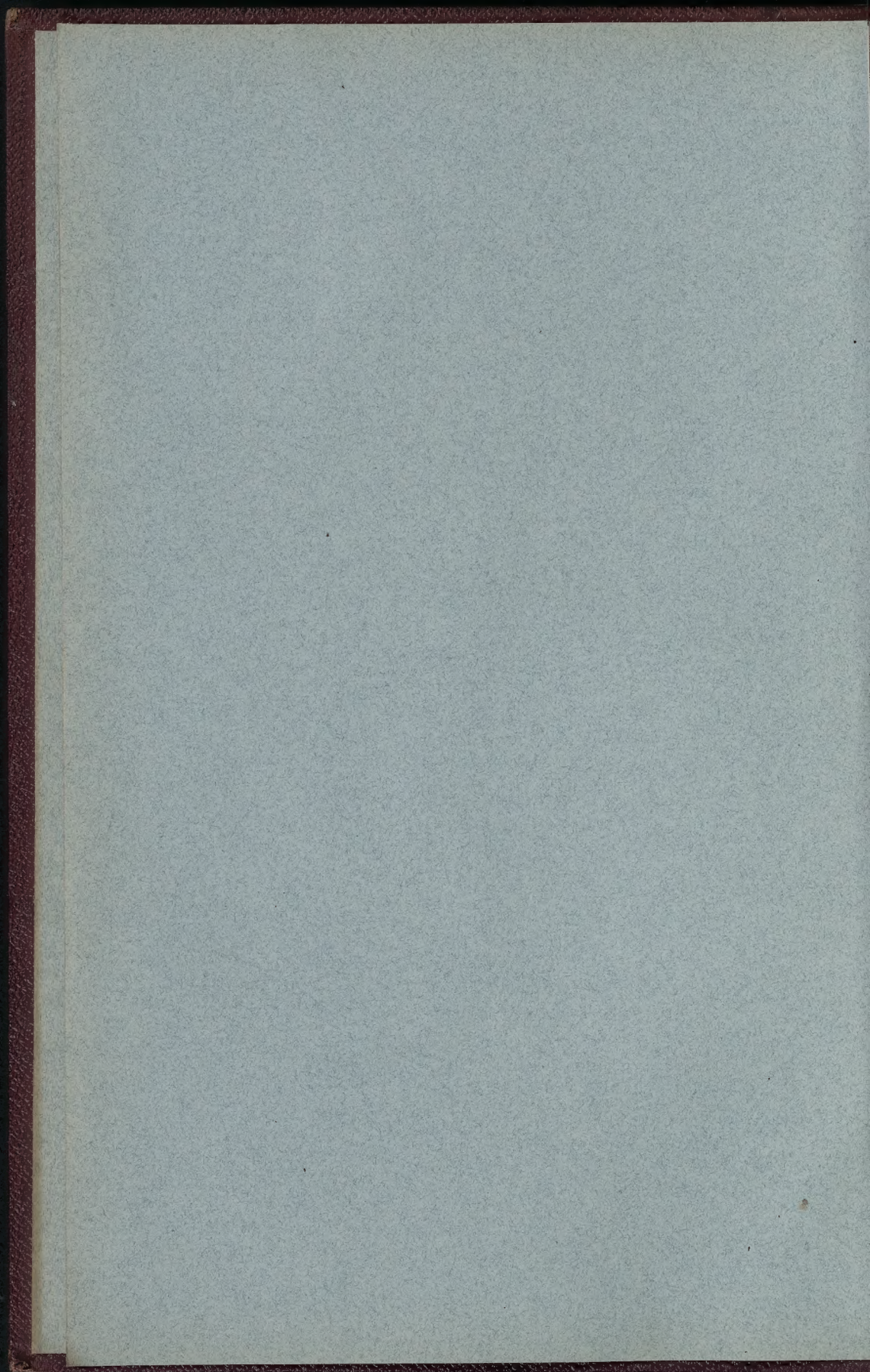


Royal Society of Arts.

MS
789



VOLUME
CI.

JULY-DEC
1911

THE BUILDER

AN : ILLUSTRATED : WEEKLY
MAGAZINE : FOR : THE
ARCHITECT : ENGINEER : AR-
CHÆOLOGIST : CONSTRUCTOR :
SANITARY-REFORMER : AND
ART-LOVER.

"EVERY man's proper mansion-house, and home, being the theater of his hospitality, the seat of self-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kind of private principedome, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

"Architecture can want no commendation, where there are noble men, or noble mindes."—SIR HENRY WOTTON.

"OUR English word To BUILD is the Anglo-Saxon Bylsan, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen; and is applicable to all other things as well as to dwelling-places."—DIVERSIONS OF PURLEY.

"ALWAYS be ready to speak your mind, and a base man will avoid you."—WILLIAM BLAKE.

OFFICE: CATHERINE-ST. STRAND: LONDON: W.C.

INDEX TO VOLUME CI.

JULY TO DECEMBER, 1911.

CONTENTS.

	PAGE
Articles, Notes, Reviews, and General	ii
Reports of Meetings, Papers Read, Law Cases, etc.	vii
Correspondence:	
Subjects of Letters	viii
Writers of Letters	ix
Architects, etc., of Buildings Illustrated	ix
Illustrations	x

ARTICLES NOTES, AND REVIEWS.

ABBEY: Bardney, 78; Paisley, 550; St. Albans, 557; Tintern, 545
 Abbots, Border, 73
 Aberdeen: Building in, 142;
 Bureaucracy v. Competition, 322;
 Church Alterations, 428; Improvements, 243, 370
 Aberystwyth, Library, 40
 Accident, Chelsea, 142
 Adelphi, Royal Society of Arts, 545
 Admiralty, Changes at the, 469
 Adshad, Professor, on Memorial to King Edward, 135
 Advertising, the Abuses of, 323
 Aesthetic Vigilance Societies, 139
 Africa, South, Quantity Surveyors in, 227
 Air: Compressed, Applying Cement Mortar by, 781; Measuring Vitiations of, 468
 Alabaster Industry, Italy, 229
 Aldwyck Site, Australia and, 357, 444, 674, 702, 735
 Aleppo, the Citadel of, 155
 'Allow' or 'Provide'? 651
 Amalfi, 661
 American: Academy in Rome, 32;
 Cement Production, 229; Park City, Development of an, 18;
 Society for Testing Materials, 512
 Americans, British Timber Reserves and, 514
 America, Visitors from, 18
 Amphitheatre, Roman, of Lutetia, 307
 Amsterdam: International Exhibition, 564; Rembrandt's Homes in, 5
 Amya v. Barton, 609
 Anerley, North Surrey Schools, 43
 Antiquities: Egyptian, Exhibition of, 5; of Asia Minor, 215
 Apothecaries' Hall, Blackfriars, 301
 Appointments, 99, 242, 700, 655
 Aqueduct, Deep-level, New York, 335
 Arbitrator: Appointment of an, 398;
 Architect as, 224
 Archaeological Restoration of French architects, 293, 303
 Archaeology: and Architecture in Wales, 426; in India, 410, 469
 Architect, County, Essex, 151
 Architect, the, as Arbitrator, 224; as Builder, 154; as 'Decorator', 469; Civics and, 263; Modern Ships and, 235
 Architect-Painter, an, 306
 Architects and: Bridges, 382; Gardens, 401
 Architects: Clerk, the, 765; Congress, Rome, 183, 270, 302, 470; Garden, the, 381; Judicial Position, the, 155; Procedure, the, London, 773
 Architects, Contemporary, and Their Works: Reginald Blomfield, 94, 102; Walter Cave, 593, 604; Eames & Young, 352, 362, 363
 Architects: French, Fees of, 557; Responsibilities of, 732
 Architectural: Assistants at Board of Works, 634, 702; Competition, Purpose of the, 379; Congress, Rome (see 'Rome')
 Architectural Association: Future of the, 380; Silver Medal, 401; Students' Work and Prize Awards, 97
 Architecture: at South Kensington, 342; Department of, University College, 37; for the Masses, 265; French, Abroad, 271; French Neo-Classical, 435; French Renaissance, 319; Liverpool School of, 327; London Street, 523; Modern, in the East, 624; 'Official', in Glasgow, 625; of the Far East, a Forgotten, 73; Polytechnic (Regent-street) School of, 327; Press and, 550; Stage, 350; Woman and, 765

Arding & Hobbs's Premises, Clapham Junction, 449
 Argentine, British Memorial to Centenary of, 741
 Army and Navy Stores, Palmer's Cradles at, 335
 Art: Archaeology and, Indian, 469; Commission, New York, 605; Gallery for London, Proposed New, 270; Gallery, Whitechapel, 493, 709; in the Borough, 357; Lady Students of, 695; Publications, 477; Teaching of, 33; Teaching and Examination in, 131; Treasures, Care of, 767
 Artists, Australia and, 686
 Artist, an, and Archaeologist, 665
 Arts and Crafts: a Master of, 237; Central School of, 357
 Ashton, Northants, 357
 Asia Minor, Antiquities of, 215
 As Others See Us, 35
 Asphalt, 336
 Athens, British School at, 509, 613
 Attorney-General v.: Dorin, 684; Mayor, etc. of Lewes, 256
 Auctioneers' Institute, 271
 Austin Dam Collapse, 382
 Australia: 'Aldwyck' Site and, 357, 444, 674, 702; Artisans and, 666; Marble from, 445
 Australian: Building and Labour Notes, 169; Coat of Arms, 372; Federal Capital, 12, 38, 132, 428, 446, 508, 555, 560, 723; Wages Board System, 546; Regulations for Concrete Construction, 454
 Avignon, Modernity at, 195
 BAKER-STREET Station Improvements, 105, 333
 Baker v. Ingall, 724
 Balliol College Chapel, 499, 530, 561, 705
 Bank of England, National Provincial, 444
 Bardney Abbey, 78
 Barker v. Herbert, 343
 Barracks, St. George's, Trafalgar-square, London, 255
 Bartholomew Close New Thoroughfare, 367
 Basements and By-laws, 181
 Baths, Swimming, on the Lines of the Amphitheatre, 243
 Battersea Polytechnic, 301
 Batt v. Metropolitan Water Board, 144
 Bayswater, Orme-square, 356
 Beams, Reinforced Concrete, 397
 Beatt's Tests, Perfector Bat, 103
 Becker v. Earl's Court, Ltd., 585
 Bedford, Cabinet Works, 487
 Bedford College for Women, 5
 Bedrooms, Unventilated, 237
 Belcher v. Roodean School, 398
 Belfast, Church, 498
 Belgian Cement Trade, 580
 Bell-John, H., on: Building Plant in Pretoria, 252; Quantity Surveyors in South Africa, 227
 Request for Bristol Cathedral, 300
 Berlin: Metropolitan Railway, Stations on the, 18; New Town Planning Authority for, 608; Partition Walls in, 397
 Bessemer Memorial Laboratory, 742
 Bethnal Green, St. Peter's Ch., 535
 Beton, Homogeneity and Imperiousness of, 781
 Bevan v. Energlyn Colliery Co., 609
 Billericay R.D.C. v. Poplar Guardians, 398
 Bills: (London) for Session 1912, 671; Private, Evidence in, 153
 Birkbeck College, 327
 Birmingham: Cathedral Tower, 515; Soho Works, 635; University, 368
 Bishopsgate Institute, 357

Blackpool: Library, etc., 612; Opera House, etc., 228; Promenade, 251
 Blomfield, Professor Reginald, Works of, 34, 102, 164
 Board of Works, Architectural Assistants at, 634, 702
 Bocholt Church Tower, 514
 Boiler: Explosion, 336; Settings, Reinforced Concrete, 46
 Bolt Socket for Concrete Work, 397
 Books, Accumulation of, 470
 Books, Magazines, Pamphlets, etc., Notices, Reviews, and Articles as to
 Adams, H., Examination Work in Building Construction, 10
 Allan, C. E. & F. J., Housing of the Working Classes Acts, 245
 Architectural History of Glasgow Cathedral, 68
 Architecture: in London, a History of, 271; of the Renaissance in France, 319
 Architektonische Handzeichnungen alter Meister, 59, 69
 Arc Lamps and Apparatus, 39
 Ashbee, C. R., Teaching Art, 635
 Audsley, G. A. & B., Art of Polychromatic and Decorative Turning, 636
 Bates, E. L., and F. Charlesworth, Mathematics and Geometry, 477
 Beams and Columns, Reinforced Concrete, 62
 Bentley, E. G., and S. P. Taylor, Guide to Town Planning Schemes, 10
 Bethlehem, Church of the Nativity, 179, 187
 Blomfield, Reginald, French Architecture, 390, 435
 Books Received, 12, 72, 102, 133, 164, 246, 272, 323, 361, 389, 419, 444, 477, 508, 540, 572, 602, 636, 672, 701, 745
 Bosboom, J., and W. Maris, Pictures by, 361
 Bradley, A. G., in the March and Borderland of Wales, 655
 Brickmaking, Modern, 217
 Briggs, R. A., Essentials of a Country House, 602
 British: and Foreign Building Stones, 38; School at Rome and Athens, 615
 Broadfoot, S. Kenneth, Motors, Secondary Batteries, etc., 10
 Building: Construction, a Glossary of, 217; Construction and Drawing, 327; Construction, Examination Work in, 10; in London, 419; Superintendence, 217
 Buildings, Principles of Planning, 636
 Bumpus, T. F., Cathedrals of Central Italy, 477
 Butterworth's: Workmen's Compensation, 245
 Cambridge and Ely, Highways and Byways in, 69
 Cambridgeshire & Ely Churches, 68
 Canadian Railway, a Great, 360
 Castles and Walled Towns of England, 126
 Catalogues, Trade, 87, 113, 147, 257, 285, 492, 522, 551, 686, 790
 Cathedrals of Central Italy, 477
 Ceilings and their Decoration, 419
 Cholsey, Church of St. Mary, 389
 Church: English Parish, Historical Growth of, 672; St. Mary, Cholsey, 388; Study Plan of, 327; the Nativity at Bethlehem, 179, 187
 Churches of Cambridgeshire and Ely, 68
 Civic Art, 247
 Cole, F. J., Church of St. Mary, Cholsey, 388

Books, Magazines, etc. (continued):—
 Columns, Calculation of, 217
 Concrete: Reinforced, Beams and Columns, 602; Work, Reinforced, Specification for, 10
 Conder, J. B. R., Law of Private Street Works, 186
 Continent, Tourists' Guide to, 39
 Conybeare, E., and F. L. Griggs, Highways and Byways of Cambridge and Ely, 69
 Combe, R. G. N., the Law of Light, 217
 Corrosion, Iron & Steel, 216, 389
 Cubitt, H., Building in London, 419
 Decoration of Ceilings, 419
 Dovey, R. G., Mill and Factory Wiring, 407, 733, 742, 774
 Diddin, W. J., Composition and Strength of Mortars, 774
 Directory, Post Office, London, 774
 Drake, F. & J. M., Stained Glass, Exeter Cathedral, 360
 Easements, The Law of, 245
 Egger, Professor, Portfolio of Drawings, 59, 69
 Electrical Mining Installations, 477
 Engineering: Civil, Manual of, 602; Structural, 672
 English: House Design, 349, 358; Ironwork, 559; Parish Church, Ground Plan of the, 327
 Evelyn-White, C. H., Churches of Cambridgeshire and Ely, 68
 Examination Work in Building Construction, 10
 Exeter Cathedral, Ancient Stained Glass of, 360
 France, Architecture of the Renaissance in, 319
 French Architecture, 390, 435
 Fremdenmacher, P. W., on Electrical Mining Installations, 477
 Friend, J. N., Corrosion of Iron and Steel, 216, 389
 Gardner, J. Starkie, English Ironwork, 559
 Gasfitting, Advice on, 477
 Gas Producer, Suction, How to Manage, 217
 Geometry, Mathematics and, 477
 Gilbreth, F. B., Motion Study, 10
 Glasgow Cathedral, Architectural History of, 68
 Glossary of Bldg. Construction, 217
 Goddard, N. L., Innes' Law of Easements, 245
 Godfrey, W. H., a History of Architecture in London, 271; the English Staircase, 9
 Gregory, C. H., Glossary of Building Construction, 217
 Hadden, R., the Inventors' Adviser, 245
 Halkett, R., Gasfitting, 477
 Harvey, A., Castles and Walled Towns of England, 136
 Health Law, Public, 217
 Highways and Byways in Cambridge and Ely, 69
 Holidays, the, 217
 House: Design, English, 349, 358; Essentials of a Country, 602
 Houses, London, from 1650 to 1820, 523
 Housing of the Working Classes Acts and Town Planning, 245
 Husband, J., and W. Harby, Structural Engineering, 672
 Innes, L. C., the Law of Easements, 245
 Inventor's Adviser, the, 245
 Iron and Steel Corrosion, 216, 389
 Ironwork, English, 559
 Itals, C. H., Guide of Central, 477
 Japanese Art, 505
 Johnson, J. H., Arc Lamps, 39
 Kershaw, G. B., Sewage Purification, 217

ARTICLES, NOTES, AND REVIEWS

(continued):—

Books, Magazines, etc. (continued):—

Law: as to Paving, etc., of Streets, 186

Light, the Law of, 217

Lindley, P., Tourist's Guide to the

Continent, 39

London: a History of Architecture

in, 271; Building in, 419; Citizens'

Year-Book, 217; Directory, Post Office, 774; Houses from

1560 to 1820, 528

Magazines and Reviews, 72, 218,

361, 445, 615, 757

Marks, P. L., Principles of Plan-

ning, 556

Materials, Testing, 188

Mathematics and Geometry, 477

Mawson, T. H., Civic Art, 247

Mill and Factory Wiring, 477

Mining Installations, Electrical, 477

Mortars, Composition, etc., of, 774

Motion Study, 10

Motors, Secondary Batteries, 10

Nichols, E., Building Superinten-

dence, 217

Nielsen, T., Calculation of

Columns, 217

Papal Collections in Rome, 297

Patents: Designs, etc., Inventor's

Adviser to, 245; Trade Marks,

Claims, 477

Paving of Streets, Law as to, 186

Penstone, M. M., Church Study, 774

Pictures by Bosboom & Maris, 361

Planning Bldgs., Principles of, 636

Post Office London Directory, 774

Public Health Law, 217

Railway, a Great Canadian, 360

Road, E., Steel Bar and Plate

Tables, 11

Renaissance in France, Archi-

tecture of, the, 319

Richardson, E., and C. L. Gill,

London Houses, 528

Rome: and Athens, British Schools

at, 613; Papal Collections in, 297

Rothery, G. C., Ceilings, 419

Rugg, Judge, and D. Knocker,

Buckworth's Workmen's Compen-

sation, 245

Scholfield, J., and G. R. Hill, Law

as to Paving, etc., of Streets, 186

School, Planning, 360

Scott, G. A. H., and P. M. Fraser,

Specification for Reinforced Con-

crete Works, 10

Searle, A. B., Modern Brick

making, 217

Sewage Purification, 217

Simmonds, T. C., Woodwork,

Carpentry, and Joinery, 10

Smith, C. A. M., Handbook of

Testing Materials, 188

Spanish Artists, Story of, the, 69

Stirling-Reinforced Concrete

Works, 10

Stained Glass, Ancient, of Exeter

Cathedral, 360

Staircase, the English, 9

Steel Bar and Plate Tables, 11

Stirling-Reinforced Concrete

Works, 10

Stones, British and Foreign Build-

ing, 38

Streets, Law as to Paving of, 186

Street Works, Law of Private, 186

Tables, Steel Bar and Plate, 11

Talbot, F. A., a Great Canadian

Railway, 360

Taylor, F. Noel, Civil Engineering

Practice, 626

Testing Materials, 188

Thompson, A. H., English Parish

Church, 672; Ground Plan of the

English Parish Church, 327

Tookey, W. A., How to Manage

a Suction Gas-Producer, 217

Town Planning: Review, 15, 251;

Schemes Guide, 10

Turner, S. G., Public Health

Law, 217

Turning, Art of Polychromatic and

Decorative, 636

Two-streets, W. N., Reinforced

Concrete Beams and Columns, 602

Wales, in the March and Border-

land of, 635

Ward, W. H., Architecture of the

Stained Glass, 360

Watson, H. S., Sewerage, 217

Watson, J. S., British and Foreign

Building Stones, 38

Watson, T., Glasgow Cathedral, 68

Webb, W. H., School Planning, 360

Whitaker's Almanack, 742

Willmott, E., English House

Design, 349, 558

Books, Magazines, etc. (continued):—

Wiring, Mill and Factory, 477

Woodwork, Carpentry, and

Joinery, 10

Workmen's Compensation, Butter-

worth's, 245

Year-Book, London Citizens', 217

Borough Polytechnic, Art in the, 357

Bosset, a Monument to, 538

Boston, Maverick Cotton Mill, 331

Bournemouth: Sea-front, 564; Town

Planning, 608

Brasses, Monumental, 306

Brass, the Touchet, Shere, 545

Brazilian City, Growth of, a, 368

Bricks, Cork Paving, 46

Bridge: a Bowstring Concrete, 222;

Bristol, 138; Charing Cross, 367;

Concrete, Reinforced, Cork Univer-

sity College, 782; Glasgow, 301;

Middleborough Transporter, 107;

Portsmouth, 351, 439, 506; Quebec,

222, 334; Riscignento, Rome, 334;

Southwark, 66

Bridge Collection, the, 171

Bridge, St. Paul's, 5, 13, 32, 33, 60,

92, 151, 752

Bridge, the Story of, the, 155, 164,

181, 190, 210, 218, 237, 245, 265, 274,

294, 323, 382, 391, 412, 420

Bristol: Baptist College, 399; Bridge,

138; Building Trade Wages, 651;

Cathedral, Bequest for, 300;

Church, 517; Guardians v. Water

works Co., 616; Street Widening,

484

British: Fire Prevention Committee,

382, 558; Memorial to Centenary

of Argentine, 741; Pavilion, Rome,

Fine Art Exhibition, 182; Thom-

son-Houston Metal Filament

Lamp, 229; Timber Reserves,

Americans and, 514

British Museum: Appointments,

655; Lectures on Architecture, 357;

Report, 270

British School at Rome, 411, 592, 613,

624, 695

British Schools at Athens and Rome,

509

Bruges, 207

Bruxelles-aux-Champs, 494

Budden, L. B., on the Museo Bar-

racco, Rome, 268

Budget and the Building Trade, 784

Builder, the, 767

Builder, the Architect as, 154

Builders': Alliance, United, 80;

Labourer, Medieval, 48; Mer-

chants' Business, an Old, 418, 446;

Tools in the Middle Ages, 20

Builders: Combination among, 722;

Extraordinary Traffic, and, 369;

London Co-operative Union of,

546; Medieval, at Work, 196

Building: Act Reform, 754; Act, the

London, 25, 35; Code, New York,

283; in Canada, 165; Industries,

Cent of Production and, the, 284;

Labour and, in Melbourne, 170;

Labour, Forced, in Middle Ages,

652; Labour Notes and, Australia,

169; Loose, 72; News,

General, 21, 42, 49, 61, 80, 109, 124,

126, 142, 170, 183, 197, 208, 225, 246,

255, 282, 310, 337, 370, 399, 428, 456,

465, 515, 520, 547, 580, 609, 610, 611,

652, 681, 722, 755, 784, 786; on

Consecrated Ground, 705; Plans

and Prospects, 141, 515; Plant in

Proterozoic, 252; Site, Old Materials

on, a, 335

'Building': New Method of, 209

Building Trade: Employment in the,

463; Labour, etc., Lomon, 756,

784; Rates of Wages, 282; the,

Budget and, 784; Trouble in, 198

Buildings: and Site Value, 184; for

Explosives Works, 220; Influence

of the Sun on, 293; New York

Bureau of, 355; Projected New, in

Provinces, 22, 50, 82, 109, 143, 171,

193, 226, 254, 283, 310, 338, 371, 399,

429, 458, 488, 517, 548, 581, 612, 653,

681, 722, 756, 785

Buller Memorial, Winchester, 215

Bunyan Window, Westminster, 564

Bureaucracy: a Competition, 322

Burghes v. Attorney-General, 636

Burial Ground, Building over a, 38

Burslem Town Hall, 399

Bury Secondary School, 242

CAISSONS, Quebec Bridge, 334

Calico Printers' Association v.

Higham, 609

Cambodia Architecture, 74, 75

Cambridge: Fitzwilliam Museum,

505; Housing, 608; University, 602

Canada: and Germany, Delegations

from, 18; Building in, 165; Indus-

trial Expansion of, 492

Canadian Town, a Progressive, 608

Canberra, City of, 12, 38

Cannon-street Hotel, London, 635

Canterbury Cathedral, 440

Cape Colony Labour Market, 617

Cape Town, Labour in, 464

Cardiff: Bath, Open-air, 357;

Church, 109; Technical Institute,

216, 703, 737

Carnarvon Castle, 31, 33, 671

Caroe, W. D., and Churches, 381, 529

Carolyn v. Harrington, 508

Carpenter, London, 400 Years Ago, 80

Carpenters' Company, the, 390; 703

Carshalton Parish Church, 38

Castings, Figure, 549

Cast-iron, Permanent Expansion of,

by Heat, 107

Castle: Carnarvon, 31, 33, 671;

Dyserth, 215; Fotheringhay, 99;

Haggerston, 565; Tattershall, 293

301, 323, 349, 351, 476, 538, 562

Catalogues, Trade, 87, 115, 147, 257

261, 422, 522, 551, 686, 790

Cathedral: Canterbury, 440; fo.

Colombo, New, 601; Protestant

Episcopal, New York, 31; South-

wark, 602; Westminster, 742; Win-

chester, 154, 34

Cave, Walter, Works of, 598, 604

Ceilings, 132

Ceilings, Sound-resisting Walls and,

280

Cement: Bags, Dust-proof, 221; for

Panama Canal, 1

German, 344; in Egypt, 552;

Manufacture, German Methods of,

226; Mortar, Applying, by Com-

pressed Air, 781; Production

American, 229; Trade, Belgian, 559

Consent of Production and the Build-

ing Industries, 264

Centenary of the Argentine, British

Memorial to, the, 741

Cham Architecture, 75

Chapel: Balliol College, 499, 530,

561, 703; of the Thistle, Edin-

burgh, 62, 72

Charing Cross Bridge, 367

Chelsea Town Hall Decorations, 703,

751

Chichester, Bishop of, Cope and

Mitre for, 774

Chimney, a Smoke-diffusing, 514

Chubb's Sprungless Lock, 458

Church: a City, 306; Building News

21, 49, 61, 80, 109, 124, 126, 142, 197,

226, 232, 310, 337, 369, 428, 456,

465, 498, 515, 516, 547, 610, 611,

681, 722, 755, 785; Erection in

Slabs, 209; Restoration, 97; Tower,

Moving a, 514

Church: London (Endell-street,

W.C.), 564; London (Spital-square),

545; Upton (St. Margaret), 185;

Uffington (Wrought-iron Gates), 396

Church, Sir A., and the Barty Pro-

cesses, 476

Churches: Bathnal Green, 635; Car-

shalton, 38; Cleveland, 357;

Epping, 65; Harrow, 486; High-

gate, 38; Ilfley, 505; Leicester, 417;

Little Easton, 426; Little Malvern,

545; Llandilo, 426; London (a

City), 306; Mal, 54; Overstrand,

Puddletown, 132; St.

John's Wood, 602; Stoke Golding,

545; Upton, 185

ARTICLES, NOTES, AND REVIEWS
(continued).—

- Congress: of Architects, Rome, 183, 276, 302, 470; of Hygiene, a, 9; Trades Union, 237, 305
Consecrated Ground, Building on, 703
Construction: Monthly Review of, 43, 165, 275, 393, 511, 675; Testing Materials of, 260
Contemporary Architects and their Work: Reginald Blomfield, 94, 102, 164; Walter Cave, 598, 604; Eames & Young, Messrs., 352, 362, 363
Continental Ideas of Slatting, 276
Contract, R.I.B.A., Conditions of, 593
Contracts: for Sale, Deposits on, 489; Government, 80, 225, 337, 486, 611, 755; Prime Cost, 680
Control, Divided, Street Improvements and, 591
Cooking Apparatus, Electric, 334
Co-operative Union of Builders, London, 546
Co-partnership Tenants, Ltd., 564
Cope and Mitre for Bishop of Winchester, 774
Coping for a Sea Wall, Reinforced Concrete, 106
Copper Tubes, Standardisation of, 755
Coptic Monasteries, Wady-el-Natroun, Egypt, 421
Copyright, 122
Corboda, Medina Azahara, 307
Corfu, Excavations at, 134
Cork: Paving Bricks, 46; Reinforced Concrete Bridge at University College, 72
Coronation Honours, India, 742
Corrosion of Muntz Metal in Sea Water, 107
Corstoptium (Corbridge), 753
Cox & Hughes, 338
Cottages: New Towns, 417; Purchase Scheme, L.C.C., 33; Timber, 271
Cotton Mill, Maverick, Boston, 331
Cradles, Palmer's Travelling, 556
Craftsmen and State Aid, 635
Crane Hook, Safety, 49
Creosoting Timber, New Process of, 396
Crooks, Mr., Bill as to Labour Disputes, 222
Cross, Wick, Worcestershire, 749
Crouch, Mr., on Architectural Work in India, 624
Croydon, Relief Road at, 368
Crystalline Pigments in Paints for Wood, 46
Crystal Palace, 243, 351, 469, 498, 538
Cyrene, Stonehenge and, 293
- DAM COLLAPSE, Austin, 382
Darlington, School, 310
Daumet, M.: Death of, 733; Presentation to, 121
Davies & Gillespie, Case of, 609
Day Works, 721
Debtors' Insolvent, Court, Lincoln's Inn, 426
Decoration of: Chelsea Town Hall, 731; the Royal Exchange, 162
Decorative Materials, 409
"Decorator," the Architect as, 469
Definitions Used in Structural Mechanics, 44, 155
Delegations from Canada and Germany, 18
Delhi: Durbar Camp, 454; the New Capital of India, 695
Departmental Methods and the R.I.B.A., 527
Deposits on Contracts for Sale, 489
Deputy Central Library, 72, 132, 155, 164, 302
Dering: Collection, 671; Sale, 742
Derrick Tower Construction, 19
Designer and Producer, 593
Diaries, etc., 703, 742, 774
Discipline, the Teaching of, 243
Dispensaries, Sanatoria, and for the Tuberculous, 527
Disputes, Trade, and Picketing, 181
District Surveyors': Examinations, 634; Fees, London, 444
Drabage, House of Commons, 357
Drawings, Standardised, for Reinforced Concrete, 107
Driver, D. G., the Late, 562
Drury Lane Theatre, London, 225
Dublin: Royal College of Science, 37; Town Planning and, 484
Dunfries, County Buildings, 456
Durbar Camp, Delhi, 454
Düsseldorf, Town Planning, 365
Dust-proof Cement Bags, 221
Duties on Land Values, 485
Dwellings: Lake, 411; Workmen's, Greenock, 484; Workmen's, St. Ives, 372
Dyserth Castle, Flintshire, 215
Dyson & Attorney-General, 549, 636
- EAMES & YOUNG, Messrs., Works of, 352, 362, 363
East, Far, a Forgotten Architecture of the, 73
East, Modern Architecture in the, 624
East, Berkshire County Cncl., 724
Ecclesiastical Law, Anomalies in, 529
Economy, False, 623
Edinburgh: Chapel of the Thistle, etc., 62, 67, 72; Old, 139; School, 225; Usher Hall, 132
Edmunds v. Owners of Ship *Peterson*, 609
Educational Advance, 93
Education and Examination, 497, 499
Edward VII. Memorial (see "Memorial")
Egypt: Cement in, 652; Exploration Fund, 506
Egyptian: Antiquities, Exhibition of, 81; Mortar, 345; 753; Portraits for National Gallery, 194
Electric: Cooking Apparatus, 334; Lighting Lectures, 358; Lighting, Strikes and, 209; Railway, Schöneberg, 482
Electrolysis in Reinforced Concrete, 578
Embankment Scheme, Forgotten, 482
Empire Palace Fire, the, 382
Employers' Parliamentary Council, 455, 495
Employment: in the Building Trade, 468; Strikes and, 337
Engineering: Monthly Review of, 103, 219, 351, 449, 573, 777; Structural, and Reinforced Concrete Instruction, 301
English Renaissance Ironwork, 559
Enock, C. R., on Railways, 397
Erosion, Coast, 107
Esplanade, Westcliff, 417
Estate: Deceased Builder's, 2:2, 356, 580, 722; Kingswood, Surrey, 38; Lord Howard of Walden's, Marylebone, 565; Oak Common, N. Hammersmith, 18
Euston-road, London, Widening, 417
Evidence in Private Bills, 153
Examination: Education and, 497, 499; in Art, 131
Examinations, District Surveyors', 634
Examiner of Plays, New, 664
Excavations at: Corfu, 194; Meroë, 194; Vale Royal, 195
Exchange, Royal, Decoration of, 162
Exeter: College, 456, 487; Sanatorium Extension, 399
Exhibition Buildings, 45
Exhibitions: Alfred Stevens, 561; Allied Artists' Association, Ltd., 61; Amsterdam International, 564; Architectural Association, Students' Work, 97; Art, 745; at Rome, 76; Brewer, H. C., Water Colours by, 531; Cities and Town Planning, 506; Egyptian Antiquities, 5; Ghent, 506; Goupil Gallery Salon, 531; Grafton Gallery, 389; Leicester Galleries, 628; Liverpool University Students' Work, 64; L.C.C. Central School of Arts and Crafts, 97; London Sketch Club, 625; Manchester Building Trade, 517; Model Engineer, 417; Modern Society of Portrait Painters, 440; National Competition, the, 153; National Gallery of British Art, 638; New English Art Club, 601; Patents, a, 270; Picture, 440, 551, 601, 625; Retrospective Art, Rome, 76; Rome International, 756; Royal Academy, 127; Royal College of Art, 158; Royal Institute of Oil Painters, 440; Royal Society of British Artists, 440; Salon, the London, 61; Schools, Russia, 492; Smoke Abatement, 533; Students' Work (Three), 97; Turin, 489; University College (Students' Work), 97; Venice Art, 382
Expansion, Permanent, of Cast-iron by Heat, 107
Experiment, an Interesting, 31
Expert Witness, Position of the, 180
Explorations in the River Wye, 78
Explosives, Boiler, 336
Explosives Works, Buildings for, 220
Extras, Some Legal Questions about, 140, 169, 224
Eye, Hygiene of the, 209
- FACTORY and Commercial Property Sales, 785; Workshop, Lime-washing, 109
Faculty Pews, 477
Failures, Commercial, 67
Farrow, F. R., on Architects and Decoration, 469
Fees: District Surveyors', London, 444; of French Architects, 559
Fifty Years Ago, 39, 72, 102, 134, 189, 218, 246, 272, 302, 330, 362, 392, 419, 445, 480, 510, 540, 568, 604, 638, 674, 705, 743, 776
Figure Castings, 549
Finance Act, Form IV., 549
Fine Arts, A Ministry of, 4
Fire: Alarm, Grinnell Sprinkler and, 755; Gas, the, 358, 444; Losses, 243; Precautions, 683; Precautions, Hampton Court Palace, 162; Preservation of Churches from, 561; Prevention Committee, British, 538; Resisting Buildings, Water Outlets for, 222; Service Council, International, 703
Fireplaces, Tattershall Castle, 293, 301, 323
Fireproof: Building, Russia, 403; Lincolne, 280
Fires: Empire Palace, 382; Glasgow, 357; Shoe-lane, E.C., 572
Flats, Houses and, 351
Fleetwood, Screw Piles in Victor a Pier, 333
Flooding, Reinforced Concrete, with-out, 395
Floor Surfaces, Concrete, 46
Florence, Housing and Water Supply, 607
Foreign and Colonial, 38, 53, 81, 87, 112, 132, 146, 175, 229, 257, 256, 344, 375, 403, 464, 492, 507, 550, 617, 686, 703, 725, 745, 773, 774, 786
Forestry in India, 440
Forum, the Roman, 305
Fotheringhay Castle, 99
Fountain, Leamington, 352, 453, 780
Foundations, Compress System of, 45
France, the Renaissance in, 319
Franco-British Exhibition, 45
French: Architects, Archaeological Restorations by, 293, 303; Architects, Fees of, 557; Architecture Abroad, 271; Neo-classic Architecture, 435; Revolution, Heroes of the, 565
Frescoes, Preservation of Stone Masonry and, 476
Frittwell Manor, 444, 664
Frozen and Retained Mortar and Concrete, 279
Fry v. Mayor of Cheltenham, 609
- GALTON LABORATORY, University of London, 441
Garden: Architect's, 381; Cities, etc., Lectures on, 368; City, Manchester, 18; Suburb, a Possible, 484; Suburb, Haslemere, 608; Suburb Trust, Hantsford, 18
Gardens, Architects and, 401
Gas: Fire, 358, 444; Mains, 724
Gases, Uffington Church, 396
Geological Survey, 99, 357
German: Building Trade Lock-out, 492; Cement Industry, 344; Emperor, Statue of the, 444; Metal Partition Walls, 53; Methods of Cement Manufacture, 226; of Reinforced Concrete Columns, 107
Ghent Exhibition, 506
Gidea Park, Romford, 61
Gilmour v. Dorman, Long, & Co., 281
Girders, Reinforced Concrete, 169
Glasgow: Bridge, 301; Building Trade, 428; City Improvements, 538; Fire, a, 357; Improvements, 327; Langside District Library, 390; Official Architecture in, 625; Post-office, 652; Training College, 598, 635; West of Scotland College, 487
Glass, Fragmentary Old Painted, 14
Glazing, a New System of, 514
Gold Medals, R.I.B.A., 6
Goodrich House, Hatfield, 538
Government Contracts, 80, 225, 337, 486, 611, 755
Grafton Gallery Exhibition, 389
Gray's Cooking Apparatus, 334
Grinnell Sprinkler and Fire Alarm, 756
Guildhall: Londonderry, 132; London, Improvement, 767; London, Views of Old, at the, 426; Middlesex, 197
- HAGGERSTON CASTLE, 565
Hall: Rivington, Lancs., 506; St. Andrews, 337
Hall v. Burnell, 489
Hamburg, River Elbe Tunnel, 223
Hammersmith, North, Oak Common Estate, 18
Hampshire County Council and Advertising, 333
Hamstead: Garden Suburb Trust, Ltd., 18; Town Hall, 142
Hampton Court Palace and Fire Precautions, 162
Harding v. Bryndda Colliery Company, 308
Harrowgate, Schools, 399
Haslemere, Garden Suburb, 608
Hastings, East Sussex Hospital, 210
Hatchett's, Piccadilly, 351
Hatfield, Goodrich House, 538
Hayler, G. W., on Streets of To-day and To-morrow, 159
Haymarket, London, Changes, 388
Heating: Course, University of London, 67, 417; Hot-water, Doubtful Points in, 334; Stations, Central, for Cities, 106
Heat, Permanent Expansion of Cast-iron by, 107
Heraldic Improprieties, 351
Heroes of French Revolution, 565
Highway, an International, 608
Highways, Waste Land by, 724
Hill, L., on Vegetation, 295
Hillside Planning, 608
Historical Review, Monthly, 73, 181, 303, 421, 541, 747
Historic Buildings, Ancient Monuments and, 77
Hilary Course, London University, 67
Hilroyd Palace, Edinburgh, 62, 67, 72
Homes, Whiteley, 215
Honours, Bestowal of, 72, 99
Hook, Safety Crane, 49
Horace, the Villa of, 307
Horsley, G., Address by, 380
Hospital, British, Montevideo, 506
Hotel: Cannon-street Terminus, 635; Cecil, Strand, 506
Hot-water Heating, Doubtful Points in, 334
Householders, Liabilities of, 343
House of Commons Drainage, 357
Houses: Notable, in London, 215; of Parliament, Repairs at, 476
Houses v. Flats, 351
Housing and Town Planning: Act, 22; Association, National, 67; Council, 538
Housing: Cambridge, 608; Florence, 607; Middlesex, 265; Naples, 482
Housing, etc.: Conference, Westminster, 445; Provincial, 301; Rural, 265; State Aid and, 322
Huguenots, the, in Wandsworth, 753
Hyde Park-corner: for King Edward, 154; Improvement, 135
Hydraulic Power Company, London, Pumping Station for, 38
Hygiene: a Congress of, 9; of the Eye, 209
- IFFLEY CHURCH, Oxon, 505
Improvement: Civic, at Ottawa, 367; Park View, St. Louis, 363
Improvements: City, Glasgow, 538; Municipal, and District Committees, 351; New Street, 368
Increment Value, 281
India: Archaeology in, 410; Capital, New, of, 695; Forestry in, 440; King Edward Memorial, 417; Modern Architecture in, 624; Muttra Museum, 424
Indian: Art and Archaeology, 469; Empire Coronation Honours, 742; Mortar Mill, 222
Industrial: Buildings, Cost of, 397; Council, the, 423, 455
Infirmary Site, Manchester, 411, 733
Inland Revenue, 242
Insect-Destroying Apparatus, 722
Inspectors of Mines, etc., 327
Institute: Bishopsgate, 357; Northampton, Clerkenwell, 358; Poplar, 21
Institute of Architects, N.S.W., 506
Institute of British Architects, Royal: Address to the King, 5; Australian Capital and the, 550; Conditions of Contract, 593; Departmental Methods and, 527; Education and Examination, 497, 499; Gold Medal, 6; Past Session, the, 119; Reinforced Concrete Report and the, 275; Seasonal Meetings, 1911-12, 264; Town Planning and the, 253; Two Honorary Associates, 665
Insurance Bill: Leicester Building Employers and, 109; National, Sanatoria and, 555
Insurance, Unemployment, 546, 651
Irish Railway Strike, the, 411
Iron Bolts and Ties in Masonry, Danger of, 397
Ironwork, English Renaissance, 558
Irrigation in New South Wales, 686
Ilkington Cattle Market, 722
Italy, Alabaster Industry, 229
- JAPANESE ART, 505
Jarrow, School, 516

ARTICLES, NOTES, AND REVIEWS

(continued)

- Jerry Building, the Penalty of, 306
Jerusalem, Ancient, 73
Jobson v. Cory, 308
Johannesburg Art Gallery, 403
Judicial Position of Architect, 155
- KEEDON SYSTEM of Reinforced Concrete,** 515
Keeling v. New Monckton Collieries, 308
Kent: East, Coalfield, 732; School Planning in, 188
Khartoum, 17
King Edward Memorials (see Memorials)
King John's Palace, Southampton, 625
Knoke House, Sevenoaks, 97
Kursaal Site, Margate, 417
- LABORATORIES,** Chemical, University College, 38
Laboratory: Bessemer Memorial, 742; Galton, London, 444
Labour: Disputes, a Bill as to, 222; Forced Building, in Middle Ages, 632; in Cape Town, 464; in the Building Trade, 784; in the Colonies, 113, 785; Market, Cape Colony, 617; Unrest, London Chamber of Commerce and, 754
Labourer, Medieval Builders', 48
Labourers' Wages, Builders', 517
Lady Students of Art, 695
Luko Dwellings, 411
Lambeth, Pedlar's Acre, 742
Lamp, a New Metal Filament, 223
Land: Tax, the, 370; Tax Valuation, 610; Vacant, Cultivation Society, 190; Valuation, 636; Values, Duties on, 435; Waste, by Highways, 724
Lea Conservancy, Stort River Navigation, and, 357
Lead Poisoning, Painters and, 440
Leases: Building, 724; Repairing Covenants in, 683
Lectures on: Reinforced Concrete, 564; Town Planning, etc., 568
Leeds Theatre, Royal Institution, 774
Leeds, the Lord Mayoralty, 310
Legal: Column, 23, 83, 144, 256, 343, 489, 549, 585, 616, 636, 683, 724, 767; Questions about Extras, 140, 169
Leicester: Building Employers and Insurance Bill, 109; Galleries, 625; Public Hall, 635; St. George's Church, 417
Library: Aberystwyth, 40; Deptford, 72, 132, 156, 164; New York, 38
Librarian and Art Gallery: London, 134; Manchester (see 'Manchester')
Lighting Magnets, 334
Lighting of City Streets, 564
Lightning, Effect of, on Concrete, 397
Lights on Vehicles, 674
Limewashing, Factory, etc., 109
Lincoln Master, 194
Limekiln Works, London, Insolvent Debtors' Court, 426
Linoleum, Fireproof, 280
Little: Easton Church, Essex, 426; Malvern Church, 545
Liverpool: Building in, 233; King Edward Memorial, 564, 594; Medical Officers' Report for, 251; Parish Halls, 487; School of Architecture, 327; School of Architecture, Town Planning at, 476; University Students' Work, 64; Windows, St. Paul's Church, 506
Llandudno, Early English Church, 426
Llandudno Building Strike, 49
Llangollen's Town Planner, 121
Local: Authorities and Traffic Problems, 251; Government Board and City Aspiration, 381
Lock, Chubb's Springlocks, 458
Lock-out, German Bldg. Trade, 492
Lock-outs, Strikes and, 455
Loggie, on, 164
London: Architect's Procedure, the, 773; Art Gallery, Proposed, for, 270; Carpenter 400 Years Ago, 80; Chamber of Commerce and Labour Unrest, 754; Co-operative Union of Builders, 546; District Surveyor's Fees, 444; Edward VII Memorial, 58, 60, 93, 99, 125, 154, 193, 356, 601, 635, 664; Extension of Tubes, 233; Gloucestershire and North Hants Dairy Company v. Morley and Lancelotti, 33; Guildhall Improvement, 767; Houses, Notable, in, 215; Hydraulic Power Company Pumping Station, 38; Institution, Finsbury-circus, 664; Library and Art Gallery, 134; Ludgate-hill Station, 134; Museum, the, 23, 243, 270, 426, 635; Natural History and New Science Museum, 60; Old Views of, 426; Oxford-circus, 243; Paris and, 195; People's Palace, etc., 215; Port of, Offices Competition, 561, 604; Railway, the Greater, 155; Sketch Club, 625; Street Architecture, 528; Survey of, 381; Water Supply, 209; Whitehall Club, New, 81
London Building: Act, the, 23, 83; in, 81, 126, 142, 225, 246, 428, 487, 516, 785; Trade, the, 453; Trade Wages, 755
London, Corporation of: Library, etc., 134; Vienna Visit, 322
London County Council: Central School of Arts and Crafts, 97, 237; Cottages Purchase Scheme, 33; Regulations for Reinforced Concrete Bldgs., 777; St. Paul's Bridge and, 732; School Buildings and, 650; Tramways and St. Paul's, 493
London Salon: of Photography, 301; the (Allied Artists' Assocn.), 61
London University: British Museum and Victoria and Albert Museum Lectures, 357; Buildings, etc., for, 703, 767; Galton Laboratory, 444; Heating and Ventilating Course, 67; Holiday Course, 67; School of Architecture Academic Course, 67, 93; Sculpture Course, 297
London's Standing Grievance, 592
Londonderry, Guildhall, 132
Lorimer, Sir R. S., 93
Ludgate-hill Station, 134
Lurcott v. Wakeley, 683, 728
Lutetia, Roman Amphitheatre, 307
- MACHINE,** Torsion Testing, 454
McLaren v. Caledonian Railway, 261
McLellan v. Lord Mayor of Manchester, 585
Magazines and Reviews, 72, 218, 361, 445, 615, 757
Magnets, Lifting, 334
Mall, Plane Trees in the, 251
Manchester: Art Gallery, 38, 302, 445, 480, 674, 705, 707; Building Trade, 310, 399, 423, 455; Building Trades Exhibition, 517; Edward VII. Statue, 417; Garden City, 18; Infirmary Site, 411, 733; Libraries for, 270; Library (see Art Gallery); Y.M.C.A. Building, 93
Manor and Building of Marylebone, the, 342; Fritwell, 444, 564; Stanton Harcourt, 190
Mansion House, the, 664, 692
Mantelpieces: Tattershall (see Tattershall)
Manufacturers and Strikes, 417
Map, New Ordnance, 565
Marble: from Australia, 445; Limestone and, Portuguese, 46
Margary, H. V., on Continental Ideas of Slatting, 276
Market, Cattle, Islington, 72
Marylebone: Lord Howard de Walden's Estate, 565; Municipal Buildings, 628, 635, 665, 674, 703; the Manor and Building of, 342
Masonry: Iron bolts and Ties in, 397; Stone, Preservation of, 476
Materials: Decorative, 409; Old, on a Building Site, 335; Testing, American Society for, 512
Maverick Cotton Mill, Weston, 331
Mayors: Metropolitan, 564
Measuring Vibration of Air, 468
Mechanics, Structural, Definitions Used in, 44, 165
Medieval: Builders (see 'Builders'); Reinforced Concrete in, Paris, 397; Sawyer, the, 721
Medical Report, Liverpool, 251
Medina Azahara, Cordoba, 307
Melbourne, Bldg. and Labour in, 170
Memorial: Bessemer, 742; Baller, Winchester Cathedral, 215, 516; Cranmer, Cambridge, 742; George, Miss Lloyd, 506; MacLagan, Newington Butts, 477; Orchardson, Sir W. Q., 773; Penn, William, 617, 131; Rolls, 477; Stevens, Alfred, 538, 601; Tyndale, Belgium, 742
Memorial, Edward VII. (see also 'Statues'): Delhi, 127, 773; East London, 531; Huddersfield, 270; India, 417; Liverpool, 664, 694; London, 59, 60, 93, 99, 125, 154, 189, 246, 601, 635, 664; Marienbad and Homburg, 215; Newmarket, 270; Plymouth, 580; Tooting Broadway, 547; York, 506
Men of the Day, 37
Moroc, Excavations at, 194
Mossina, Rebuilding of, 356
Metal: Partition Walls, Germany, 53; Work, Precious, 66
Metropolitan Water Supply, 411
Middle Ages, Forced Building Labour in the, 62
Middlebrough: Cottages at, 674; Transporter Bridge, 107
Middlesex: Guildhall, 197; Housing in, 235
Military College, Sandhurst, 477
Mines and Quarries Inspectors, 327
Ministry of Fine Arts, a, 4
Minter v. Waldstein, 595
Minturn v. Barry, 84
Model Engineer Exhibition, 417
Mold Parish Church, 545
Monasteries, Coptic, Wady-el-Natroun, Egypt, 421
Montreal, 119, 122, 134
Monumental Brasscs, 306
Monument: to Bossuet, a, 536; Wellington, St. Paul's, 767
Monuments, Ancient: Duke of Rutland and, 439; Historic Buildings and, 77; Protection of, 499
Morgan v. Dixon, 609
Mortar: at Tattershall Castle, 562; Cement, Applied by Compressed Air, 761; Early Egyptian, 763; Frozen and Retlawed, 279; Inspection, Plymouth, 478; Mill, an Indian, 282
Municipal Buildings: Marylebone, 628, 655, 703; Newcastle, 390; New York, 107
Municipal: Engineers, President of Institution of, 292; Improvements and Distress Committees, 351; Work, the Professions and, 93
Muntz Metal, Corrosion of, in Sea-water, 107
Museo Barracco, Rome, the, 263, 268
Museum: British, 270; Fitzwilliam, Cambridge, 505; the London, 162, 243, 270, 426, 635; the Nutra, India, 424; Victoria and Albert, 355, 742
Museums: Arrangement of, 467; Natural History and New Science, 60, 265
Mutra Museum, India, 424
- 'NAB WOOD,'** Windermere, 476
Naples, Housing of, 482
National: Competition, the, 158; Gallery, Egyptian Portraits for, 194; Gallery, New Rooms, 61; Gallery of British Art, 638; Portrait Gallery, the, 163; Provincial Bank of England, 444
National Trust, the, and: Old Priests-house, Muchelney, 139; Tattershall Castle, 351; Ullswater, 251
Natural History and New Science Museums, 60, 265
Neolithic Remains, Yorks, 426
Newcastle: Bank, 109, 225; Cemetery Building, 323; Church, 109; Home for Incubators, 370; Municipal Buildings, 390; School, 132, 282
New English Art Club, 60
Newquay U.D.C. v. Rickard, 612
New South Wales, Irrigation in, 686
New York: Art Commission of, 605; Building Code, 293; Bureau of Buildings, 335; Deep-level Aqueduct, 335; Municipal Buildings, 107; Pennsylvania Railway-station, 218, 219; Protestant Episcopal Cathedral, 31; Public Library, 38; Rapid Transit Subway Extension, 107; Riverside Extension Scheme, 17
Nico, Building Accident at, 306
Noden v. Galloways, 609
Noise, Nuisance from, 585, 636
Norden Safety Crane Hook, 49
Northampton Institute, Clerkenwell, 358
Northampton: Building in, 370; Building Society, 358
Nude, the Semi-, 685
- OBITUARY:** Abbey, E. A., 146, 635; André, E., 550; Aumonier, J., 432; Bannatyne, J. J., 344; Broadhurst, H., 461, 721; Brown, J., 550; Carroll, J. R., 725; Chancellor, A., 586; Clemence, J. L., 522; Crabtree, R. H., 344; Crossley, W. J., 461; Daumet, P. F. Honoré, 755; Driver, D. G., 586; Durnell, R., 113; Fleury, Henry R., 725; Griggs, W., 759; Hacking, J. R., 87; Hill, W. H., 301; Hoskins, G. G., 727; Houghton, F. E., 550; Inglis, J. C., 788; Israels, J., 204; Johnson, I. C., 683; Last, W. L., 173; Lawes-Wiltewronge, C. B., 432; Legros, A. V., 725; Mason, C. T., 432; Morton, R., 403; Pritchett, J. P., 375; Putney, S., 375; Rosenheim, M., 375; Saglio, E., 727; Salmon,
- W. Forrest, 653; Seddon, H. C., 759; Shaw, J., 263; Thornhill, E. B., 301; Tschudi, Von, 653; Wise, G., 522; Wroth, W. W., 403
Offices of Works Arch. Assistants, 702
Offices: Privy Council, Whitehall, 753; Steamship, Southampton, 755
Official: Architecture, Glasgow, 625
Oil on Roads, 489
Old-fashioned, Real, 561
Opera House, etc., Blackpool, 225
Ordinance: Map, New, 565; Survey, 270, 357
Oriol College, Oxford, 352
Orms-square, Bayswater, 386
Ottawa, Civic Improvement at, 367
Overstrand Church, 671, 696
Oxford-circus, London, 243
Oxford: Encenia, 9; 'High,' and Overhead Tramways, 499; Oriol College, 362; Union Society, 9; University, 9
Ozone Water Sterilisation, 61
- PADDINGTON, G.W.R.,** 531
Page v. Watt, 536
Painted Glass, Fragmentary Old, 1
Painters and Lead Poisoning, 40
Paintings, Wall, in Surrey Churches, 77
Paints for Wood, Crystalline Pigments in, 46
Paisley Abbey, 330
Palmer's Travelling Cradles, 336
Panama Canal, Cement for, 46
Papal Collections in Rome, Publications as to, 297
Paper, Colouring, 679
Paris: Improvement, a Notable, 481; London and, 195; Medieval Reinforced Concrete in, 397; St. Séverin, 307
Park: City, Development of an American, 18; Systems, City, 18
Parks, Public, and Recreation Grounds, 189
Parliamentary Council, Employers', 455, 485
Parliament Houses, Repairs at, 476
Partition Walls: Berlin, 397; Metal, Germany, 53
Part, Walls, 427
Parties, 25, 53, 87, 113, 147, 173, 204, 232, 259, 296, 314, 344, 375, 403, 432, 464, 492, 522, 550, 586, 620, 658, 687, 728, 759, 788
Patents Exhibition, a, 270
Paving Bricks, Cork, 46
Pedlar's Acre, Lambeth, 742
Pennsylvania Railway-station, New York, 218, 219
Penn, William, Memorial to, 67, 131
Perfector Bar Beam Tests, 103
Perth, Infirmary, 254
Pews, Faculty, 477
Photography, London Salon of, 301
Piccadilly: London, the White Horse Cellars, 351; No. 119, 389
Picketing: Peaceful, 309; Trade Disputes and, 181
Picture Exhibitions, 440, 531, 601, 625
Pier Caissons, Quebec Bridge, 334
Pigments, Crystalline, in Paints for Wood, 46
Piles: Driving, through Thin Stratum of Hard Material, 107; Screw, in Pier, Fleetwood, 333
Pipes and Fittings, Water Communication, 144
Pisa, the Tower of, 167
Planning: Hillside, 608; Model, of a Seaside Suburb, 251
Plans, Building, and Building Prospects, 141
Plant, Concrete, for Cold Weather, 281
Playgrounds, School, 180, 188
Plans, New Examiner of, 664
Pointing in Brickwork, 169
Police Courts Competition, Stockport, 273
Polytechnic: Battersea, 301; Regent-street, London, 573, 675; Regent-street (School of Architecture), 327
Pond, Mr., and the Time Spirit, 529
Portland-cement Bridge, 351, 439, 506
Port of London Offices Competition, 561, 604
Portrait Gallery, National, 163, 772
Portraits, Egyptian, for National Gallery, 194
Portuguese Marble & Limestone, 46
Postage Stamps, New, 5, 33
Posters, Taxation on, 323
Posts, etc., Reinforced Concrete, 280
Premises, Arding & Hobbs's, Clapham Junction, 449
Presentation to M. Daumet, 121
President of Institution of Municipal Engineers, 292
Press, the, Architecture and, 530
Pretoria, Building Plant in, 252

ARTICLES, NOTES, AND REVIEWS
(continued)—

- Price, C. R., and Reinforced-Concrete Underpinning, 486, 548
Prime-cost Contracts, 680
Prince Albert, Canada, 608
Printing Works, London, 428
Procedure, London Architect's, 773
Producer, Designer and, 593
Production, Census of, and Building Industries, 264
Professional: Announcements, 8, 37, 67, 99, 131, 162, 188, 300, 327, 356, 389, 417, 505, 564, 671, 702, 774; Unity, 81
Professions, the, and Municipal Work, 93
Promenade, Blackpool, 251
Properties, Sale of, 389
Property: Obsolete, 625; Sales, 99, 501, 589, 565
"Provide": Allow', or, 651
Provinces: Projected New Buildings in the, 22, 50, 82, 109, 143, 171, 198, 226, 254, 283, 310, 338, 371, 399, 429, 458, 488, 517, 548, 581, 612, 653, 681, 722, 756, 785
Provincial Housing Problems, 303
Public Works Loan Commission, 330
Pumping: Station, London Hydraulic Power Company, 38; Well, Sinking a Reinforced Concrete, 223
- QUADRIGA.** Constitution Hill Arch, 538
Quantities, Variations in, 411
Quantity Surveying in S. Africa, 227
Quebec Bridge, 222, 334
Quick, A. H., on Vault Retaining Walls in Reinforced Concrete, 104
- RAILWAY:** Commission, the, 469, 485; Greater London, 155; Nationalisation, 352; Rome to Ostia, 671; Schöenberg Electric, 422; Strike, a Lesson of the, 210; Strike, Irish, 411; Unrest, the, 499, 530
Railway-station: Buildings, Baker-street, London, 335; Pennsylvania, New York, 218, 219; Waterloo, 454, 774
Railway-stations, Berlin Metropolitan, 18
Railways, Cheaper, 397
Rand Art Gallery, 403
Rayner v. Mayor, etc., of Stepney, 23
Reading: Abbey, 67; Workhouse Infirmary, 225
"Real Old-fashioned," 561
Recreation Grounds and Parks, 189
Regent's Park and the Zoological Gardens, 498
Regent-street, London: Polytechnic, 578, 675; Rebuilding in, 417
Rembrandt's Homes in Amsterdam, 5
Renaissance in France, the, 319
Reservoir, New Storage, 538
Responsibilities of Architects, 732
Restorations, Archaeological, by French Architects, 293, 302, 303
Retaining-wall Designs, Comparison of, 396
Rhéims, La Maison des Musiciens, 194
Richmond Hill: Amenities of, 565; Star and Garter Hotel, 297
Riverside Extension Scheme, New York, 17
Rivington Hall, Lancs., 506
Road: Authorities, Liabilities of, 585; Board Funds, 256; Board Grants, 163, 389; Board, New Roads and, 100; Congress, International, 538; Relief, Croydon, 368; Repairs, 274; Schemes, 18
Roads: Oil on, 489; Tarred, 608
Rochdale, Palace Theatre, 722
Rochester and Town Planning, 484
Roman: Amphitheatre of Lutetia, 307; Bridges, 181; Forum, the, 305; Remains in River Wye, 78
Rome: American Academy in, 32; British School at, 411, 509, 592, 613, 624, 695; Congress of Architects, 183, 270, 302, 470; Exhibitions, 76; Fine Art Exhibition, British Pavilion, 162; International Exhibition, 736; Museo Barracco, 265, 268; Papal Collections in, Publications Relating to, 297; "Passaggiata Archeologica" of, 291, 293, 302, 303; Risorgimento Bridge, 334
Rome to Ostia Railway, 671
Roof: Coverings, Timber in, 393, 420; Truss, Collar-beam, 511, 540
Rooms, New, National Gallery, 61
Rosebery, Lord, on Books, 470
Roth Naval Base, 370
Rothamsted, Herts, 510
Royal Academician, Election of, 564
Royal Academy: Keepership, 774; Students' Work, 693, 695, 702, 744, 776; Winter Exhibition, 476
Royal College of Art, 158, 180, 215
Royal Institution, Lecture Theatre, 774
Rudd v. Bowles, 724
Rupping Timber Preservation, 396
Rural Housing, 255
Rust-resisting Sheet Steel, 223
Rutland, Duke of, and Ancient Monuments, 439
ST. ALBANS Abbey Church, 357
St. Andrew's University, 270
St. George's Barracks, Trafalgar-square, London, 265
St. James's, Stafford House, 93
St. Jean, Troyes, 307
St. Louis Buildings and Improvements, 352, 363
St. Paul's, London: Bridge, 5, 13, 32, 33, 60, 92, 131, 732; Cathedral, Wellington Monument, 767; Tramways and, 498
St. Séverin, Paris, 307
Sale, Dering, 742
Sales: Factory, 765; Forthcoming, 416; Property, 39, 301, 389, 565
Salon, the, London, 61
Sanatoria: and Dispensaries for the Tuberculous, 237; National Insurance Bill, 565
Sanctuaries for Wild Life, 136
Sandhurst Military College, 477
Sawyer, the, Medieval, 721
Scaffolding, 47
Scarborough Undercliff, 607
Schöenberg Electric Railway, 482
School: Accommodation, 671; British, at Rome (see "Rome"); Building News, 21, 49, 80, 170, 225, 253, 282, 310, 337, 370, 372, 399, 428, 456, 461, 516, 547, 611, 650, 682, 681, 722, 785; Bury Secondary, 242; Planning, Kent, 188; Playgrounds, 180, 183
School of Architecture: Liverpool, 64, 327; London University, 67, 93; Polytechnic (Regent-street, London), 327
School of Arts and Crafts: Central, 357; L.C.C., 97
School of Art Woodcarving, 357
Schools: Exhibition, Russia, 492; North Surrey, Anerley, 43; Permanent v. Temporary, 582; Royal Academy, 702; Trades Training, 27
Schroeder v. Worthing Gas, etc., Company, 724
Sculpture: Architecture and, at South Kensington, 542; in Civic Art, 365
Seashore, Fleetwood, 283
Seaside Suburb, Model Planning of, a, 251
Seats, Outdoor, London, 592
Seawall, Reinforced Concrete Coping for, a, 106
Seawater, Corrosion of Muntz Metal in, 107
Session, Past, of the R.I.B.A., 119
Sewage Disposal, Royal Commission on, 284
Shage: Barnard Castle, 216; Burton, 189; Hartley Wintney, 164; Hucknall Torkard, 568; Kirkby Stephen, 602; Llanrwst, 565; Metropolitan, 357; Minthorpe, 98; Pencosed, 558
"Sewer" or Natural Watercourse? 256
Shadwell Park and Edward VII. Memorial, 189
Sharpe, Montagu, on the Westminster Tophill, 741
Sheffield: Church, 222; University Science Department, 399; Vandalism at, 606
Shere, the Touchet Brass, 545
Ships, Modern, and the Architect, 235
Sinking a Reinforced Concrete Pumping Well, 223
Site: King Edward Memorial, 59, 93; the South Kensington, 61; Value, Buildings and, 184
Sitter Viaduct, Switzerland, 577, 777
Slatting, Continental Ideas of, 276
Smoke: Abatement Exhibition, 538; Diffusing Chimney, a, 514
Society of Arts, Royal, 545
Soho Works, Birmingham, 635
Rust-resisting Walls, etc., 280
Southampton: King John's Palace, 625; Steamship Offices, 755; Tea House, 328
South Kensington: Architecture at, 342; exhibitions, 158; site, 61
Southwark: Bridge, 664; Cathedral Improvements, 602
Spain and Tangier, Water-colours of, 531, 540
Sparrow, W. Shaw, on the Story of the Bridge, 155, 181, 210, 237, 265, 294, 323, 382, 412
Specialist, Employment of, a, 784
Stafford House, St. James's, 93
Stage Architecture, 350
Stamps, Our New Postage, 5, 33
Standardisation of Copper Tubes, 755
Standardised Drawings for Reinforced Concrete, 107
Standing Grievance, London's, 592
Star & Garter Hotel, Richmond, 297
State-aid for Housing, 322
Statue of: German Emperor, 444; King Edward VII., Manchester, 417; King Edward, York, 506; Kitchener, 510; Minto, Lord, 742; Rolls, 477
Steel: Concrete and, Adhesion of, 396; Sheet, Rust-resisting, 223; Water Tower, Cased in Concrete, 107
Sterilisation, Ozon Water, 61
Stevens, Alfred, Memorial, 538, 561, 601, 767
Stockholm, Art Competitions, 328
Stockport Police Court, 216, 273
Stoke: Golding, Church at, 545; Out, a, 694; of To-day and Tomorrow, 139; Widening, Bristol, 484; Widening in the City, 18; Works, Private, 616
Streets, City, Lighting of, 564
Stresses, Determining, 511, 540
Strike: a Lesson of the Railway, 210; Pay, Trade Unions and, 427
Strikes: Electric Lighting and, 209; Employment and, 337; General, 237; Lock-outs and, 455; Manufacturers and, 417
Stucco, 224
Students' Work: Architectural Association, 97; L.C.C. Central School of Arts and Crafts, 97; Royal Academy, 693, 695, 744, 776; University College, 97
Suburb Seaside, Model Planning of, a, 251
Subway Extension, New York Rapid Transit, 107
Subways in the City, 477
Summary, Editorial (on Weekly)
Sun, Influence of, on Buildings, 293
Surrey, Surrey, 18
Surrey Church Wall Paintings, 77
Survey of London, the, 381
Surveyors: Central Imperial Board for, 120; Statutory Qualification for, 120
Swansea: Art Gallery, 42; Building in, 142; Improvements, 18; Town Planning for, 608
Swimming-baths on the Lines of the Amphitheatre, 243
Switzerland, Sitter Viaduct, 577, 777
- TARRED ROADS.** 608
Tattershall Castle, 293, 301, 323, 349, 551, 476, 538, 562
Taxation on Posters, 323
Teaching of: Art, the, 33, 131; Discipline, 243
Technical: Institutions, Cardiff, 737; Institutions, Assoc. of Teachers in, 506
Telescope Towers and Masts, 47
Temple of Artemis at Ephesus, 134
Terra-cotta, Economy in Building by, 280
Testing: Concrete, etc., for Reinforced Concrete, 278; Materials American Society for, 512; Materials of Construction, 280
Tests: German, of Reinforced Concrete Columns, 106; Perfector Bar Beam, 103
Text-book, a, Quaint, 291
Thames Valley, Lower, District Surveyors' Association, 538
Theatre: Comedy, London, 487; Drury Lane, London, 225
Thoroughfare, New, Bartholomew-cloze, 667
Thrale-roads, Streatham, 608
Timber: Cottages, 271; Crosscutting, New Process of, 396; in Roof Coverings, 392, 420; Preservation of, 514; Reserves, British, American, 514; Tests, Influence of Size in, 46
Time Spirit, Mr. Pond and the, 529
- Tintern Abbey, 545
Tools, Builders', in Middle Ages, 20
Tooting, Travelling Facilities to, 357
Torquay, Town Hall, etc., 142
Torsion Testing Machine, New, 454
Tottul, the Westminster, 741
Tower: Church, Moving a, 514; Derrick, Construction, 19; Pisa, 167
Towers and Masts, Telescopic, 47
Town Hall: Burslem, 399; Chelsea (Decoration of), 731; Hull, 399
Town Planner, Llangollen's, 121
Town Planning: Act, White Paper, 736; at Liverpool School of Architecture, 476; Authority, New, Berlin, 608; Council, Housing and, 538; Housing Association, National and, 67; Lectures on, 566; Review, the, 15, 251; Schemes, Two, 18
Town Planning: Bournemouth, 608; Dublin and, 484; Düsseldorf, 365; Rochester, 484; Swansea, 608; Twickenham, 484
Trade Disputes: Act, the, 455, 485; Picketing and, 231
Trade: News, 21, 81, 142, 171, 197, 226, 254, 283, 310, 337, 370, 399, 428, 456, 487, 516, 547, 580, 612, 652, 681, 722, 755, 785; Premises, Water Supplied to, 585
Trainers: Training Schools, the, 271; Union Congress, the, 237, 308; Union Law, 724; Unions and Strike Pay, 427
Traffe: Extraordinary, 369, 393; Problems, Local Authorities and, 251; Question, Hyde Park-corner, 151; Training and Reward, 183
Tramways: L.C.C., and St. Paul's, 498; Overhead, Oxford 'High' and, 499
Transport, Influence of, on Concrete, 399
Travelling Facilities to Tooting, 357
Trees, Plane, in the Mall, 251
Trentham Hall, Staffs, 538
Tribunal of Appeal Case, 663
Troyes, St. Jean, 307
Trustee, Public, Office of the, 355
Tube Railways Extension, London, 283
Tuberculous, Sanatoria and Dispensaries for the, 237
Tubes, Copper, Standardisation of, 755
Tungsten Filament Lamp, 228
Tunnel, River Elbe, Hamburg, 223
Turin Exhibition Awards, 489
Twickenham, Town Planning, 484
- UFFINGTON CHURCH.** Gates, 395
Ullawater, National Trust and, 251
Underpinning, Reinforcing Concrete in, 485, 548
Unemployment Insurance, 546, 651
United Builders' Alliance, 80, 109
Unity, Professional, 91
University, Cambridge, 692
University: Collectivity, Architectural Students' Work, 97; Chemical Laboratories, 38; Course in Heating, etc., 417; Department of Architecture, 37; New Session, 357
University College: Cork, Reinforced Concrete, 122; Exeter, 456
University of: Birmingham, 368; Liverpool (see "Liverpool"); London (see "London"); St. Andrews, 270
University, London, 767
Upon, Church of St. Margaret, 185
Usher Hall, Edinburgh, 132
- VACUUM STREET CLEANING.** 18
Valo Royal, Excavations at, 195
Vandalism at Sheffield, 606
Variations, 108, 593
Vault Retaining Walls, Design of, in Reinforced Concrete, 104
Vehicles, Lights on, 674
Venice, Art Exhibition, 392
Ventilation: of Bedrooms, 237; the Problem of, 283; Viaduct, the Sitter, Switzerland, 577, 777
Victoria and Albert Museum, 356, 357, 637, 742
Victor Mills, Ltd. v. Shackleton, 609
Vienna: Corporation of London in, 322; Foundling Hospital, 464
Vigilance Societies, 23, 46
Villa of Horace, the, 307
Vistas, 92
Vitiation of Air, Measuring, 468
- WADY-EL-NATROUN.** Coptic Monastery of the, 421
Wares: Board System, Australia, 546; Bristol Building Trade, 681; Builders' Labourers, 283, 517; Changes in Rate of, 282; London Building Trade, 756
Waldam, P. J., on Definitions Used in Structures, 44, 165
Wales, Archaeology, etc., in, 426

ARTICLES, NOTES, AND REVIEWS

Vault: Designs, Comparison of Retaining, 395; Paintings in Surrey Churches, 77.
Vaults: Ceilings and Sound-Resisting, 280; Design of Vault Retaining, in Reinforced Concrete, 104; Metal Partition, Germany, 55; Partition, Berlin, 307.
Wandsworth, the Huguenots in, 753.
Ward, J. S. M., on Sanctuaries for Wild Life, 136.
Waring-White Building Co., 756.
Water: Board, Metropolitan, 2.; Colley's Patents, 585; Phillips, 767.
Water: Charges, 787; Communication Pipes and Fittings, 144; for Domestic Purposes, 616; Gate, the

York, 307; Outlets for Fire-Resisting Buildings, 222; Percentage, Effect of, on Porosity of Concrete, 106; Plant, Stoke Workhouse, 9; Sterilisation, Ozone, 61; Supplied to Trade Premises, 585; Lower, Steel, Cased in Concrete, 107.
Water Supply: Florence, 607; London, 208; Metropolitan, 411.
Water Supply Works, 454.
Waterloo Railway Station, 454, 774.
Weather, Cold, Concrete Plant, 281.
Welds, Some Studies of, 221.
Wellington: Monument, St. Paul's, London, 767; Parliament Buildings, 566.
Westminster: Abbey, 271; Abbey, Bunyan Window, 564; Cathedral, 742; Tothill, the, 741.

Whitechapel Art Gallery, 499, 769.
Whitehall: Palace, the Great Hall, 753; Privy Council Offices, 753.
White Horse Cellars, Piccadilly, London, 351.
Whiteley Homes Trust, 215.
Wild Life, Sanctuaries for, 136.
Wimbledon Common, 469, 608.
Winchester Cathedral, 164, 194.
Window: Bunyan, Westminster Abbey, 564; MacLagan, Newington Butts, 477.
Windows, St. Bede's Church, Liverpool, 506.
Windsor, Old, and the H.A.C. of Boston, 189.
Winnipeg, Parliament Bldgs., 604, 774.
Witness, Expert, Position of the, 180.
Woman, Architecture and, 766.

Women, Bedford College for, 5.
Wood: Carving, School of Art, 357; Colouring of, 395; Crystalline Pigments in Paints for, 46.
Worcestershire Churches, 541, 747.
Workmen's: Compensation, 281, 708, 515, 608; Dwellings, Greenock, 48.
Wroxeter (Viroconium), 426.
Wye, River: Explorations in the, 78; Roman Remains in the, 78.
YERBURY, J. E., on Legal Questions as to Extras, 169.
York: King Edward Statue, 506; Watergate, the, 307.
Y.M.C.A. Building, Manchester, 93.

RECAPITULATION OF MEETINGS, PAPERS READ, LAW CASES, Etc.

Abattoir Society, Model, 706.
Abbey: Margam, 162; Neath, 162.
Abercrombie, P., on Paris and Vienna, 627.
Adams, H., on design of tall chimneys, 877.
Aesthetic treatment of concrete, 769.
Alexandria, its place in architectural history, 701.
Ambler, L., on three generations of the Smithsons, 650.
America, fireproofing in, 576.
American Society for Testing Materials, 512.

ARCHAEOLOGICAL SOCIETIES: Royal Archaeological Institute, 130, 162, 185, 417, 475; Surrey Archaeological Society, 127, 476.
Architect, domestic, woman as, 534.
Architects: Congress of, Rome, 470; incompetent, 161; the newer responsibilities of, 735.

ARCHITECTURAL ASSOCIATION: building construction and architectural education, 556; conversation, 664, 626; Driver, D. G., the late, 562; excursion, annual, 207, 212, 239, 246, 500; Jacobean architecture, 639, 749; Loire, excursion in the, 500; materials, is the texture of, a fetish? 696; members, new, 440; Pite, Professor, appointment of, 97; President's address, 385; prizes and awards, 97, 385; silver medal designs, 401, 446; town planning, 441; visits (see 'Visits').

Architectural: education, building construction and, 355; material, microscopic examination of, 471; treatment and, 189.

ARCHITECTURAL SOCIETIES: Aberdeen, 627; Bristol, 672; Glasgow (Architectural Craftsmen), 388, 471, 504, 572, 701; Gloucestershire, 474, 572; Ireland (Assoc.), 598, 700; Ireland (Institute), 36, 127, 270, 535, 697, 669, 701; Leeds and Yorkshire, 535, 626, 701, 735; Liverpool, 627, 701, 755; Manchester, 199, 443, 598, 627, 700; Northern, 356; Nottingham, 127, 475, 535, 669, 700, 768; Wolverhampton, 504.
Architectural: Canadian, 312; influence of building regulations on, 129; Jacobean, 639, 749; landscape, 474; Renaissance and ancient, 357, 417; University College School of, 102.

Asylums Board, Metropolitan, 83, 345, 489, 549, 615, 683, 757.
Athens, British School at, 509, 537.

Barker, A. H., on heating and ventilation, 518.
Bath, XVIIIth-century architecture of, 627.

Belgium, geology of, 129; Royal Sanitary Institute Congress, 93, 127, 160; tar-macadam plant, 161; town planning and, 128.

Birmingham University, town planning at, 414.

Blackburn, contract or municipal labour, 721.

Blount, B., on cement, 515, 680.
Bolton, A. T., on Jacobean architecture, 639, 749.

Bond, G. E., on Registration, etc., 613.
Boobyer, P., on municipal hospitals, 128.

Bowl, J. S., on practical geometry, 388.

Brentwood sewage works, 505.
Bridge, St. Paul's, 35, 51.
British School at Athens, 509, 537.
Brodie, J. S., on roads, 161.
Brown, J. Crichton, on abattoirs, 706.
Brownridge, C., on town planning of a modern city, 127.
Builders' Benevolent Institution, 610.
Building: accuracy in, 580; construction, architectural education and, 555; courses, Glasgow Technical College, 504; regulations, influence of, on architecture, 129; schemes, law relating to, 768; Trades Employers' National Federation of, 141.
Building Act: applications under the, 21, 49, 81, 109, 142, 171, 371, 456, 487, 516, 547, 580, 612, 652, 681, 722, 756; law cases under the, 51, 112, 144, 232, 372, 459, 520, 654, 724; reform, 764.
Buildings, old, preservation of, 199.
Burke, H., on reinforced concrete, 162.
Burnet, J. J., on drawings, etc., 598.
Byzantine architecture, 700.

Caerphilly, the Archaeological Institute at, 131.
Caldey Island, archaeological visit to, 162.

Calton Hill, Edinburgh, 672.
Canadian architecture, 312.

Cardiff, Royal Archaeological Institute at, 130.

Carpenters' Company, the, 703.
Castles: Caerphilly, 131; Carew, Tenby, 185; Coity, 162; Pembroke, 185; St. Donat's, Wales, 131.

Cement, 515, 680.
Chaddock, G. A., on ventilation, 683.

Chatterhouse, the, 476.
Chimneys, design of tall, 677.

Christian mosaics, early, 715.
Church Building Society, 132, 602.

Churches: Caldey, 162; Cardiff, 130; Coity, 162; Coychurch, 162; Kipping, 36; Ewenny, 162; Llandaff, 130; Llantwit Major, 131; St. Donat's, 131.

Churches, early Roman, 719, 736.
City: beautiful, the, 15; modern, town planning of a, 127.

Civil defence, 414.
Concrete: aesthetic treatment of, 769; reinforced, 669.

Congress of: Architects, Rome, 470; Royal Sanitary Institute, 93, 127, 160.

Councils, London (see also L.C.C.): 24, 52, 83, 112, 146, 175, 204, 229, 257, 285, 314, 345, 372, 402, 418, 451, 491, 621, 550, 567, 617, 655, 685, 703, 758, 787.

Cowan, P. C., on incompetent engineers and architects, 161.
Crawford, J., on duties of a formman mason, 701.

Darch, J., on artificial lighting of hospitals, 160.
Decorations, London Association of Master, 547.

Dickinson, P. L., on architectural matters, 598.
Dinner: British School at Athens, 537; Builders' Benevolent Institution, 610; Edinburgh Master Builders, 785; Institute of Architects, 6; Institute of Sanitary Engineers, 614; Liverpool Uni-

versity Architectural Society, 735; Master House Painters, 699; Plumbers' Company, 754; Smoke Abatement Exhibition, 539; Sunderland Building Trades Association, 721.

District Surveyors' Association, Lower Thames Valley, 535, 672.
Dixon, A. E., on early Roman churches, 739.
Domestic architect, woman as a, 534.
Draughts, sewers and, laying of, 128.

Edinburgh, Calton Hill, 672.
Education, architectural, building construction and, 355.

Engineering Societies: Bristol Association of Engineers, 564; Concrete Institute, 563, 576, 769; Institution of Civil Engineers, 169, 504, 563, 701; Institution of Municipal and County Engineers, 51, 137, 282, 444; Institution of Municipal Engineers, 504, 505, 608; Junior Institution of Engineers, 327, 505, 537, 598; Society of Engineers, 37, 677.

Engineers and architects, incompetent, 161.
Evetts, G., on gasworks, 505.
Examinations, R.I.B.A., revised syllabus of, 499.

Excursion, Architectural Association, 207, 212, 239, 246, 500.

Federation: National, of Building Trades Employers, 141; Northern Counties, 428; Scottish Builders', 310.

Fireproofing in America, 576.
Fletcher, Banister, on ancient and Renaissance architecture, 357, 417.

Forsyth, W. A., on preservation of old buildings, 199.
Foundations, 129.

French sculpture, modern, 594.
Gasworks, 505.

Geology of Belfast, 129.
Geometry, practical, 388.

Glasgow Technical College courses in building, 504.
Greater, A. D., on town planning, 51.

Green, M. A., on Bath XVIIIth-century architecture, 627.
Grenop, E., on newer responsibilities of architects, 734.

Gullman, H. F., on Belfast tar-macadam plant, 161.
Gunn, E., on woman as a domestic architect, 534.

Hall, E. T., on national sanatoria, 161.
Harpur, W., on sewage and tidal waters, 161.

Hayler, G. W., on streets, 139.
Heating and ventilation, 518.
Hill, H. H., on excursion to the Loire, 500.

Hope, W. H. St. J., on Westminster Abbey, 475.
Horne, W. E., address to surveyors, 582.

Horsley, G. C., address to the Architectural Association, 385.
Hospitals: artificial lighting of, 160; municipal, 128.

Humphrey, R. L., on fireproofing in America, 576.

Institute: of Sanitary Engineers, 614; Royal Archaeological, 130, 162, 185, 417, 475.

Institute, Royal, of British Architects: deceased members, 593, 733; dinner, annual, 6; examinations, District Surveyors', 634; examination results, 124; examinations, revised syllabus of, 499; gift, 594; honour for Mr. J. W. Simpson, 99; Licentates, special examination for, 124; members, election of new, 686; photographs of buildings in Italy, etc., 634; President's address, 331; responsibilities of architects, the newer, 735; Rome Congress, 183, 270, 302; sculpture, modern French, 594; sessional meetings, 264.

Irish national schools, 160.
Ironwork, etc., structural, 627.

Jacobean architecture, 639, 749.
Jemmett, A. R., on town planning, 249.

Kerr, H. F., on the Calton Hill, Edinburgh, 672.
Kitson, S. D., on architectural matters, 626.

Knole House, Sevenoaks, 97.
Labour, contract or municipal, Blackburn, 721.

Lamps, incandescent glow, 476.
Lancashire, W. T., on town planning, 51.

Landscape architecture, 474.
Leeds, street improvements, etc., 51.

Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Labour, contract or municipal, Blackburn, 721.

Lamps, incandescent glow, 476.
Lancashire, W. T., on town planning, 51.

Landscape architecture, 474.
Leeds, street improvements, etc., 51.

Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County Council v. Clark (see 'Clark'); London County Council v. Corbett, Tribunal of Appeal case, 520; London County Council v. Metropolitan Railway and others, Euston-road building line, 758; Lorden & Son v. The King, breach of contract, 24; Marchant v. Castleford Urban District

Leeds, street improvements, etc., 51.
Legal: Ashwell & Nesbitt v. Allen & Co., architects' certificate, 684; Carden v. Layton, dispute as to party wall, 51, 112, 144; Clark v. London County Council, Building Act case, 654, 724; Crittall Manufacturing Company v. London County Council, agent or principal, 734; Darby v. Matthews, ancient lights, 432; Densham v. Banbury, dispute over reconstruction work, 758; Donceaster Corporation v. Johnson, breach of building by-laws, 235; Dorman, Long, & Co. v. Willcock & Co., action against builders, 684; Ellis v. Llewellyn, Eastbourne building dispute, 23; Findlay v. Roques & Carvell, fees, 734; Free v. Sutton Urban District Council, District Surveyor's certificate, 724, 759; Goodwin & Hall v. Gayden, Barn staple building dispute, 536; Greig v. Rayson, Building Act case, 232; Halcovyn Club v. Westminster Corporation, nuisance case, 684; Howlett v. Harrold, Ltd., alleged nuisance, 314, 372; Keyser v. Trask & Sons and Webb, negligence, 734; Lanning v. Davey & Salter, alleged negligence, 734; Leicester Board of Guardians v. Trollope, dry rot, 734; London County and Westminster Council v. London County Council, Tribunal of Appeal case, 459, 520; London County

REPORTS, etc. (continued).—

- Council, damage by sewage flooding, 84; Minter v. Waldstein, action against building owner, 52, 84, 111, 145, 172, 201, 232, 461, 489, 535; Nash v. Spencer, Santo, & Co., Ltd., injunction against builders, 111; Parker v. Pratt, Wallasey building dispute, 586; Payne v. Prior, the Building Act, 372; Roodhouse v. Burt, case as to a contract, 112; Schworer v. Bethnal Green Borough Council, ancient lights, 460, 490; Sugden v. City of London Brewery Company, premises at Islington, 521; Todd v. Aerated Bread Company, costly dilatoriness, 550; Todd v. Franks & Simons, reinstatement after fire, 432; Tribunal of Appeal cases, 459, 520; Waller v. F. & T. Johnson, builders' test case, 345; Wheeler v. Stratton, claim for compensation, 616.
- Lethaby, W. R., on the Confessor's Shrine, Westminster, 476.
- Lighting, artificial, of hospitals, 160.
- Lights, ancient, law cases as to, 432, 460.
- Liverpool: Master Builders, 428; University Architectural Society, 735.
- Llandaff Cathedral, 131.
- Loch Leven water power works, 563.
- Loire, A.A. excursion to the, 500.
- London: Association of Master Stonemasons, 141; County Council, 11, 51, 83, 102, 134, 445, 478, 507, 549, 572, 604, 637, 674, 704, 745, 754, 777; Master Builders' Association, 370, 485, 580, 755; Master Decorators' Association, 547.
- Lovell, R. G., report on Rome Congress of Architects, 470.
- Macadam, tar, 161.
- MacLennan, H., on structural iron-work, 627.
- MacLennan, T. F., on architectural treatment and cost, 189.
- Maguire, W. R., on Irish national schools, 160.
- Mansion House, the, 682.
- Margam Abbey, 162.
- Mason, foreman, duties of a, 701.
- Master Builders' Associations (see also 'Federation'); Edinburgh, 785; Hull, 456; Liverpool, 428; London, 370, 485, 580, 755; South Shields, 547; Sunderland, 721.
- Material, architectural, microscopical examination of, 471.
- Materials: American Society for Testing, 512; is the texture of a, fish? 696.
- Mawson, T. H., on landscape architecture, 474.
- Metals, Institute of, 635.
- Microscopical examination of architectural material, 471.
- Middlesex County Council, 144.
- Middleton, G. A. T., on Alexandria, 701.
- Morris, J. T., on incandescent glow lamps, 476.
- Mosaics, early Christian, 715.
- Moss Flower, T. J., address to engineers, 564.
- Manby, A. E., on texture of materials, 696.
- Munce, J. on: geology of Belfast, 129; town planning, 128.
- Municipal and County Engineers, Institution of, 51, 137, 292, 444.
- Municipal Engineers, Institution of, 504, 505, 608.
- Municipal: hospitals, 128; labour, contract or, Blackburn, 721.
- Neath Abbey, 162.
- Nobbs, P. E., on Canadian architecture, 312.
- Norris, W. Astley, on tarred roads, 608.
- Northern Counties Federation, 428.
- Nottingham Territorial head-quarters, 700.
- Ogden, P., on science and proportion, 700.
- Olmstead, Mr., on the city beautiful, 15.
- Painters, House, Association of Master, 395.
- Paris and Vienna, 627.
- Parker, J., on tar macadam, 161.
- Pembroke Castle, 185.
- Pite, Beresford, on: aesthetic treatment of concrete, 769; building construction and architectural education, 555.
- Plans, approval of, 590.
- Plumbers' Company, the, 754.
- Plumbing, sanitary, 489.
- Preservation of old buildings, 199.
- Presidential addresses: Architectural Association, the, 385; Architectural Association of Ireland, 588; Concrete Institute, the, 563; Glasgow Architectural Craftsmen, 388; Institute, Royal, of British Architects, 531; Institution of Municipal and County Engineers, 511; Institution of Municipal Engineers, 505; Leeds and Yorkshire Architectural Society, 626; Manchester Society of Architects, 443; Royal Sanitary Institute Congress, 99; Society of Architects, 613; Surveyors' Institution, 539.
- Primrose, J. S. G., on architectural material, 471.
- Prior, E. S., on 'The London style,' 476.
- Proportion, science and, 700.
- Quantity Surveyors' Association, 38.
- Ramsey, S. C., on town planning, 442.
- Ransom, W., on slums, 137.
- Renaissance and ancient architecture, 47.
- Responsibilities of architects, 733.
- Rienmond, Sir W., on Alfred Stevens, 601.
- Roads, 161, 508.
- Roberts, A. H., on Loch Leven water power, 563.
- Roman churches, early, 719, 736.
- Rome, Congress of Architects, 470.
- Rushforth, G. McN., on early Christian mosaics, 715.
- St. David's, archaeologists at, 185.
- St. Paul's new bridge, 53, 51.
- Sanatoria, national, 161.
- Sanitary Institute, Royal: Belfast Congress, 98, 127, 160; South African branch, 444; York Congress, 162.
- Sayers, A., on laying, etc., earthenware sewers and drains, 128.
- School: buildings, 650, 671; class rooms, planning of, 160; of architecture, University College, 102.
- Schools, Irish national, 160.
- Science and proportion, 700.
- Scottish Builders' Federation, 310.
- Sculpture, modern French, 594.
- Searles-Wood, H. D., on building regulations and architecture, 129.
- Sewage: discharge of, into tidal waters, 161; purification, 99; works, Breniwood, 505.
- Sewers and drains, earthenware, laying, etc., of, 128.
- Slums, prevention of, 137.
- Smith, R. Eley, on early Roman churches, 719.
- Smithsons, three generations of, 650.
- Smoke abatement, 161.
- Smoke Abatement Exhibition, 538.
- Society of Architects: Alexandria, its place in architectural history, 701, 726; annual report, 459, 476; Presidential address, 613; Rome Congress, 301, 470.
- Statham, H. H., on modern French sculpture, 594.
- Steelwork, structural iron and, 627.
- Stella Hall, 356.
- Stevens, Alfred, 601.
- Stickland, E. A., on Windsor, 505.
- Strilgoe, L., on town planning, 137.
- Stokes, L., address to R.I.B.A., 531.
- Stonemasons, London Association of Master, 141.
- Streets of to-day and to-morrow, 139.
- Surveyors' Institution: opening meeting, 444, 582; portrait of Mr. D. Watney, 564; Presidential address, 582.
- Tanner, Henry, address by, to Concrete Institute, 563.
- Tar macadam, 161.
- Tarred roads, 608.
- Taylor, W. H., on law as to building schemes, 768.
- Tenby, archaeologists at, 162, 185.
- Texture of materials, is it a fetish? 696.
- Thames Valley, Lower, District Surveyors' Association, 538, 672.
- Touraine, Architectural Association excursion to, 207, 212.
- Town, growth of a, 249.
- Town planning: at Birmingham University, 414; conference, West Bromwich, 51, 137; formal or irregular, 441; of a modern city, 127, 128.
- Tribunal of Appeal cases, 459, 520.
- University College School of Architecture, 102.
- Unwin, Raymond, on: civic design, 414; town planning, 441.
- Ventilation: heating and, 518; the science of, 683.
- Vienna, Paris and, 627.
- Visits: Architectural Association: Hill Hall and Church, Epping, 36; Knole House, Sevenoaks, 97.
- Junior Institution of Engineers: Tottenham and Edmonton Gas Light and Coke Company, 598.
- Northern Architectural Association: Stella Hall and Axwell Hall, 356.
- Nottingham Architectural Association: Territorial headquarters, 700; Windsor and Eton, 127.
- Society of Engineers: Swancombe Northfleet Cement Works, 37.
- Surrey Archaeological Society: Charterhouse, 476.
- Wales, South, Royal Archaeological Institute, in, 130.
- Water: Board, Metropolitan, 83, 144, 549, 690, 753; Engineers, Institution of, 635.
- Webb, W. R., on school classrooms, 160.
- West Bromwich, town planning conference, 51, 137.
- Westminster Abbey, art and history in, 475; City Council, 82, 144, 460, 521, 685, 688, 723.
- White, W. H., on newer responsibilities of architects, 733.
- Windsor, municipal works of, 505.
- Windsor as a domestic architect, 534.
- Wood, E., address by, to architects, 442.
- Woodward, W., on accuracy in building, 580.

CORRESPONDENCE.

SUBJECTS OF LETTERS.

- Achilles, statue of, 775.
- Adelphi, a building in the, 568.
- Aluminium for hot-water service, 539.
- Apology, an, 672.
- Archaeological Institute, Royal, South Wales, 189.
- Architects and shop design, 163, 246, 478.
- Architect's assistant, the, 246.
- Architectural: assistants and Office of Works, 673, 743, 775; examinations and designs for public buildings, 568; material, microscopical examination of, 539, 673.
- Architecture, official, 567, 602, 637, 705.
- Artemis, Temple of, 163.
- Australian Federal City competition, 509.
- Balliol College, Oxford, 603.
- Boarding, fungus and, 329, 362.
- Bradford Royal Infirmary, 11.
- Brick and stone work, London, 446.
- Bridge, St. Paul's, 70, 189.
- Builders: combination among, 722; questions for, 11, 40, 70, 101; tools in the Middle Ages, 40.
- Building trade, continuity of employment in the, 680.
- Bureaucracy v. competition, 361.
- Burslem Public Buildings, 417.
- Butterfield, nemesis of, 603.
- Cassini paints, 11.
- Cement, Portland, inventor of, 673.
- Chelsea Town Hall, decoration of, 775.
- Church of St. John, Horselydown, 478.
- Cisterns, galvanised-iron, hot water and, 637, 673.
- Clay foundations, 418, 447.
- College, Balliol, Oxford, 603.
- Combination among builders, 722.
- Commissions and the R.I.B.A. scale, 568.
- Competition: Australian Federal City, 509; bureaucracy and, 361; Deptford Central Library, 163; Manchester Library and Art Gallery, 11, 101, 417, 446, 705; Port of London offices, 637, 673; Stafford Library, 568.
- Convenience, public, parks and, 218.
- Cooking apparatus, 569, 603.
- Coptic monasteries of the Wady-el-Natroun, 446.
- Correction, a, 673, 743.
- Decoration of Chelsea Town Hall, 775.
- Deptford Library competition, 163.
- Drainage: of premises, 71; question, a, 362.
- Drying of timber, artificial, 71.
- Ecoomy, false, 704.
- Elliott & Sons, Samuel, 563.
- Employment, continuity of, in building trade, 680.
- Estates, landed, breaking up of, 478.
- Examinations: architectural, and designs for public buildings, 568, the R.I.B.A., 539, 567, 603, 637.
- Factories, cubic space in, 568.
- Flooring, terrazzo, 380, 637.
- Floors, decaying, 509, 539.
- Foundations, clay, 418, 447.
- Fungus and boarding, 329, 362.
- Gardens, suburban, 775.
- Gidea Park, 70, 100, 132, 163.
- Horselydown, Church of St. John, 478.
- Hot water: galvanised-iron cisterns and, 637, 673; service, aluminium for, 539.
- Houses before year 1800, plans of, 705.
- Housing, national insurance and, 40.
- Hyde Park-corner, 101, 189.
- Indian Patent Act, new, 509.
- Infirmary, Bradford Royal, 11.
- Institute of British Architects, Royal: Associates and the, 704, 743; examinations and, 538, 567, 603, 637; Licentiatehip and, 603, 637, 672, 743; policy of the, 742.
- 775; scale, commissions and the, 568; Society of Architects and the, 476, 539.
- Insurance, national, 40, 704.
- Intercommunication Column, 11, 40, 71, 101, 133, 163, 302, 329, 362, 390, 418, 447, 478, 509, 539, 568, 603, 637, 673, 743.
- Inventor of Portland cement, 673.
- Joinery: cost of, 603, 637, 673, 705; shrinkage of, in hot weather, 71, 101.
- King Edward VII., memorial to, 11, 101, 133, 163, 389, 637.
- Landed estates, breaking up of, 478.
- Land: tax valuation, 610; values, rating of, 509.
- Library and Art Gallery competition, Manchester, 11, 101, 417, 446, 705.
- Library: Deptford, competition, 163; Stafford, 568.
- Licentiatehip, R.I.B.A. (see 'Institute').
- Lime mortar, 603.
- London brick and stone work, 446.
- Lychgates, 568.
- Manchester Library and Art Gallery competition, 11, 101, 417, 446, 705.
- Marylebone municipal buildings, 705.

CORRESPONDENCE (continued).—

Subjects of Letters (continued).—
 Material, architectural, micro-
 scopical examination of, 539, 673
 Memorial to King Edward VII., 11,
 101, 133, 163, 189, 637
 Microscopical examination of archi-
 tectural material, 539, 673
 Monasteries, Coptic, of the Wady-el-
 Natroun, 446
 Mortar, lime, 603
 Municipal buildings, Marylebone,
 705
 Museums, arrangement of our, 568
 Office of Works, architectural
 assistants and the, 673, 743, 775
 Offices, Port of London, 637, 673
 Official architecture, 567, 602, 637,
 705
 Order, use of the, 743
 Oxford, Balliol College, 603
 Paints, cassin, 11
 Parks and public conveniences, 218
 Patent Act, new Indian, 509
 Paps, discharge from, 40
 Plans of houses before year 1800, 705
 Playgrounds, school, 246
 Portland cement, inventor of, 673
 Port of London offices competition,
 637, 673
 Price, C. R., clay foundations, 447
 Quaint text-book, a, 328
 Rainwater 'tipper', 101, 133, 163
 Rating of land values, 509
 Restoration *en rigle*, a, 246
 Road Board, the, 271
 Royal Archaeological Institute in
 South Wales, 139
 St. Paul's Bridge, 70, 189
 School playgrounds, 246
 Shop: design, architects and, 163,
 246, 478; front, Dover-street, Pica-
 doilly, 637
 Shrinkage of joinery in hot
 weather, 71, 101
 Society of: Architects and the
 R.I.B.A., 478, 539; Arts' building,
 Adelphi, 568
 Stafford Library competition, 568
 Stone-work, staining, 447
 Strand improvement, the further
 118
 Suburban gardens, 775
 Temple of Artemis, 163
 Terrazzo flooring, 390, 637
 Text-book, a quaint, 328

Timber: artificial drying of, 71;
 brands, 743
 Tools, builders', in the Middle
 Ages, 40
 Ventilation, 328
 White-lead, 478
 Wind pressure, 302
 Woodwork, external, 390

WRITERS OF LETTERS.

Ayling, R. S., a correction, 743
 Bailey, G., Gidea Park exhibition,
 101
 Barnes, F. J., microscopical exami-
 nation of architectural material,
 539
 Beaumont, J. E., drainage of pre-
 mises, 71
 Bell, C. S., an apology, 672
 Blomfield, Reginald, the R.I.B.A.
 examination, 603
 Bonner, H. T., shop-front, Dover-
 street, Picaodilly, 637; the
 R.I.B.A. and the Associates, 704,
 743, 775
 Brown, W. Ibbis, Church of St.
 John, Horselydown, 478
 Buckingham, E., Samuel Elliott &
 Sons Ltd., 568
 Burt, W. H.: the R.I.B.A. and the
 Associates, 705; the R.I.B.A. and
 the Society of Architects, 478
 Butler, C. McArthur, the R.I.B.A.
 and the Society of Architects, 539
 Chapman, J. W., national insurance
 and housing, 40
 Cloriston, H., rating of land values,
 509
 Collins, H. R., Stafford Library
 competition, 568
 Cooper, C. H., clay foundations,
 418
 Crace, J. D.: decoration of Chelsea
 Town Hall, 775; white-lead, 478
 Cross, Amy, cooking apparatus, 603
 Dann, R., memorial to King
 Edward, Hyde Park-corner, 189
 Davis, H. A., cooking apparatus, 509
 Dickinson, H. M., Rainwater
 'tipper', 133
 Dixon, E. J., the R.I.B.A. examina-
 tions, 539
 Durham, Carter, & Durham, Gidea
 Park Exhibition, 100
 Eaton, W., the Royal Archaeological
 Institute in South Wales, 139
 Elms, G., clay foundations, 418

Gayer, F. J., employment in build-
 ing trade, 680
 Gilbert, T., combination among
 builders, 722
 Goodhart-Rendell, H. S., Balliol
 College Chapel, 603
 Gripper & Stevenson, Gidea Park,
 135

Harris, E. Swinfen, a correction, 673
 Hastwell, R. E., policy of the
 R.I.B.A., 742
 Hayward, A. B., a building in the
 Adelphi, 568
 Heathcote, C., national insurance,
 704
 Henderson, A. E., Temple of
 Artemis, 163
 Hibbert, J. V., the R.I.B.A. exami-
 nations and official architec-
 ture, 567
 Hopkins, W. B., nemesis of Butter-
 street, 603
 Horner, P. Morley, St. Paul's
 Bridge, 189

Judge, Mark: breaking up of
 landed estates, 478; bureaucracy v.
 competition, 361; further Strand
 improvement, 413; Hyde Park-
 corner, 101, 163; London brick
 and stone work, 446

Ketley, C. B., new Indian Patent
 Act, 509

Leeming & Leeming, St. Paul's
 Bridge, 70
 Leverton, W. L. H., the use of the
 'Order', 743
 Llewellyn, R. L., lych-gates, 568
 Lovett, E., the arrangement of our
 museums, 568
 Lyon, M., Manchester Library and
 Art Gallery, 11

MacAlister, Ian, Australian Federal
 City competition, 509
 Mileham, G. S., Coptic monasteries
 of the Wady-el-Natroun, 446

Norman, P., and P. W. Lovell, plans
 of houses dating before 1800, 705

Parker, J. F.: cost of joinery, 637;
 shrinkage of joinery in hot
 weather, 101
 Phillips, R., builders' tools in the
 Middle Ages, 40

Potterton, E., discharge from pipes,
 40
 Pretymann, E. G., land tax valua-
 tion, 610
 Price, C. R., clay foundations, 447
 Primrose, J. S. Glen, micro-
 scopical examination of building
 material, 673

Quennell, C. H. B., Gidea Park, 133
 Randolph, J. A., a restoration *en
 rigle*, 246
 Robinson, S. Whitmore: hot water
 and galvanised-iron cisterns, 673;
 ventilation, 328
 Robson, E. R., school playgrounds,
 246
 Russell, S. B., Burslem public
 buildings, 417

Sang, H. H. B., national memorial
 to King Edward VII., 11
 Scammel, E. F., terrazzo flooring,
 390
 Selwood, W. R., memorial to King
 Edward VII., 637
 Shepherd, H., the statue of Achilles,
 775
 Sington, T., Manchester Library
 competition, 417
 Smith, F. O., fungus and boarding,
 362
 Speaight, F. W., King Edward
 memorial, 133
 Swinstead, G. H., suburban gardens,
 775

Thompson, Wm., Gidea Park Exhi-
 bition, 100
 Travers, W., Gidea Park Exhibition,
 100
 Turner, H. A., rainwater 'tipper',
 133

Vale, E., architects and shop design,
 246

Walker, B., a quaint text-book, 728
 Wallis, W. F., shrinkage of joinery
 in hot weather, 71
 Webb, Maurice, Gidea Park, 70, 132
 Willmott, E., & H. S. East, Gidea
 Park Exhibition, 101
 Willoughby, G. H., Manchester
 Library, etc., competition, 705
 Wood, E., Manchester Library com-
 petition, 446

Yates, C. W., Gidea Park competi-
 tion, 163

ARCHITECTS, ETC., OF BUILDINGS ILLUSTRATED.

Adams, H. P., & C. H. Holden, De-
 sign, Manchester Library and Art
 Exhibition, 100
 Adams, J., British Hospital, Monte-
 video, 505, 507
 Adshad, S. D., Hyde Park-corner
 Improvement (Memorial to King
 Edward), 135
 Alberti, Giovanni, Ceiling Decora-
 tion, 69
 Allen, G. P., Church of St.
 Leonards, Bedford, 71
 Atkinson, R., Design for: Man-
 chester Library and Art Gallery,
 706-708; Marylebone Municipal
 Buildings, 665, 675
 Barnes, A. G., Decoration Design:
 'Winter', 731
 Barrias E. L., Statue: 'Architec-
 ture', 594; The Victor Hugo
 Monument, Paris, 596
 Bartholomé, M., 'Monument aux
 Morts', Paris, 593
 Bayes, G., & R. Knott, Chain Sup-
 ports, L.C.C. Hall, 275
 Bellis, A. W., Measured Drawings
 (Owen Jones Prize), 13
 Berrington, A.: A Loggia in a
 Public Garden, 164, 165; R.A.
 Schools Design for Gold Medal,
 776, 777; Sketch of Model of King
 Edward Memorial Scheme, sug-
 gested by Mr. Reynolds-Stephens,
 567
 Bigot, P., Model and Plan of
 Ancient Rome, 303
 Binney, H., Cast-iron Figures and
 Lamps, South Shields Municipal
 Buildings, 549
 Binning, A., R.A. Gold Medal

Drawings (Hall of City Company),
 744-747
 Blomfield, Reginald: New Gardens,
 Mellerstein, 305; Works by, 91,
 94-96, 102, 103
 Blow, Detmar J., & F. Billerey,
 Carlton House-terrace, 381, 392
 Bodley, G. F., St. John's Church,
 Epping, 65
 Bolton, A. T., Plans for Ideas for
 Houses, 644
 Bosboom, J., 'Sunday Morning', 361
 Bouchardon, E., Fontaine de
 Grenelle, Paris, 321
 Boucher, A., 'La Pensée', 596
 Boucher, J., 'Antique et Moderne',
 597
 Bradshaw & Gass, Design for Man-
 chester Library and Art Gallery,
 707, 709-711
 Brakspear, H., Workshop Priory
 Church, 449
 Brewer, H. C.: Orense Cathedral,
 Spain, 540; The Puerta de la
 Gloria, Santiago Cathedral, 540
 Brooks, J. Son & Adkins, Church,
 Kensington, 480, 481
 Bryan & Hodges: First Premiated
 Design, School, Roman-hill, Lowest-
 oft, 536
 Bucknell, L. H., R.A. Schools De-
 sign: Hall of a City Company,
 746, 747; St. Paul's Bridge, 43
 Bullant, J., The Châtellet, Chantilly,
 320
 Bullock, A. E., 'Feldenhurst', Box-
 moor, 67, 68
 Campbell, J., & C. Paton, Parlia-
 ment Building, Wellington, N.Z.,
 566

Castelow, C., Design for a Country
 House, 13
 Castle & Warren, Design for Dept-
 ford Library, 157, 158
 Cave, Walter, Some Works by, 581,
 589-601, 604
 Chambers, G. E., 'A Cotton Ex-
 change', 65
 Clarke, H., Chatfield, Premises,
 Threadneedle-street, E.C., 392, 393
 Cogswell, G., Churchyard Cross, Bir-
 lingham, 542
 Cooper & Slater, Design: Cardiff
 Technical Institute, 738; Man-
 chester Library and Art Gallery,
 707, 711, 712
 Cooper, T. Edwin, Marylebone
 Municipal Buildings, 623, 628, 629,
 774
 Cowper, J. B. F.: Church of St.
 Peter, Howden, 511; St. Cuth-
 bert's Church, Wells, 511; St.
 Mary's Church, Stamford, 511
 Cox & Amos: Le Crédit Foncier,
 Franco-Canadian, Montreal, 135;
 the Eastern Townships Bank,
 Montreal, 123
 Cratney, E.: Houses, Blyth, 474;
 Library, Monkwearmouth, 98
 Crickmay & Sons, House at West
 Bay, Dorset, 36, 37
 Crouch, Butler, & Savage: Selected
 Design, Manchester Library and
 Art Gallery, 706

Dalou, M., 'The Triumph of the
 Republic', Paris, 585
 Darling & Pearson, the Canadian
 Bank of Commerce, Montreal, 122,
 135

Dartine, F. de, Drawing of Bridge
 at Navilly, 414
 Davidson, W., Church of St. Mar-
 garet, Upton, 185, 186
 Davies, W. E., 'An Office Building',
 65
 Dawber, E. Guy, 'Burdocks', Fair-
 ford, 12
 Downing, H. P. Burke, School
 Bromley, 448, 449

Eames & Young, Some Works of,
 353-355, 362, 363

Falkener, E., City of Ephesus, 415
 Farrar, R. Fielding, Design for
 Manchester Library and Art
 Gallery, 707, 720
 Fehr, H. C., Sculpture, Sennowe
 Park, Norfolk, 329
 Finch, W. A., Nurses' Home, etc.,
 Hackney Union Infirmary, 284
 Fulton, J. B., St. John's College,
 Oxford, 645

Gardner, J. Starkie, Drawing of
 Gate at Hatfield, 368
 Gauquière, M., the Claron Monument,
 Condé-sur-Escaut, 585
 Gawthrop, T. G., Brass, Iship
 Church, 306
 Gibson, J. S., Skipwith, & Gordon,
 Arding & Hobbs's Premises, Clap-
 ham Junction, 449-453
 Grant, T. F. W., Edington Church,
 274

Greenlade, S. K., National Library
 of Wales, Aberystwyth, 42
 Green, W. Curtis: Design for Mary-
 lebone Municipal Buildings, 665,
 666, 675; Sketches with the A.A.

ARCHITECTS, etc. (continued).—

- Excursion in Franco, 212-214, 235.
240-242, 246.
Gutteridge, A. F. & R. F., Seale-Hayne College, Newton Abbot, 244, 245.
Hallam, J. Algernon, 'the Red House, near Hitchin, 639.
Halliday, J. T. & C. Paterson, Stockport Police Court Design, 273.
Halliday, J. T., Secondary School, Bury, 242, 243.
Hall-Jones, F., & E. S. Cummings, King Edward Memorial Hospital, Ealing, 274, 275.
Hare, C. G.: Churchyard Cross, Wick, 749; Restoration of Ashley Church, 448.
Hare, H. T., Design for Deptford Library, 158, 159.
Harris, E. Vincent, & T. A. Moodie, Glamorgan County Hall, Cardiff, 541.
Hart & Waterhouse, Business Premises, Gray's Inn-road, London, 480.
Hébrard, E., Restoration of Palace of Diocletian, Spalato, 303-305.
Henderson, A. E., Restoration of the Temple of Artemis (Diana) at Ephesus, 134.
Henderson, A. G., Design, Manchester Library and Art Gallery, 707, 712, 713.
Hodge, Vernon: Bungalow at Radpole, near Weymouth, 216.
Home, G. Wyville, A.A. Silver Medal Drawings, 401, 402.
Hooper, B. B., Residence, Dunedin, New Zealand, 339.
Horsburgh, V. D., Canadian Bank of Commerce, Fort William, 165.
Hunt, W. & E.: Addition to Balham Constitutional Club, 379, 390; No. 93, Mortimer-street, W., 480.
Japy, A. J. L., Prix de Rome Prize Design, 289.
Jemmett & McCombie, Design for Marylebone Municipal Buildings, 670.
Johnston, R. F., Cottages at Letchworth, 190.
Jones, Ivor, & P. Thomas, Selected Design, Cardiff Technical Institute, 787.
Knott, R., & G. Bayes, Chain Supports, L.C.C. Hall, 275.
Lanchester, H. V., & E. A. Rickards, Design for: Marylebone Municipal Buildings, 667, 675; National Museum of Wales, Cardiff, 330.
Leathart, J. R., Drawing of: Chain Supports, L.C.C. Hall, 275; Town Hall, Rye, 541.
Lenton, F. J., Gates, Uffington Church, 393.
Lorimer, R. S., Chapel of the Tinsle, Edinburgh, 62-64, 72, 73.
Lucas & Lodge & C. A. Farey, Design for: Marylebone Municipal Buildings, 669.
Mackenzie & Son, A. Marshall: Memorial to King Edward, Crathie, 300.
Mackenzie, A. Marshall, & A. G. R. Mackenzie, Recreation Hall, Southall, 330.
McKim, Mead, & White, Pennsylvania Railway Station, New York, 218, 219.
Maidman, E. C. H.: Consumptive Sanatorium, Co. Cork, 511; Isolation Hospital, Aberdare, 511.
Miller, S. H.: Gate to Courtyard, Hills Castle, Kirkcudbrightshire, 191; Kitchen, Stanton Harcourt, 190, 191.
Mirland, R. F. H., Prix de Rome Prize Design, 298.
Mitchell, G. A., Regent-street Polytechnic, London, 575-576, 675-678.
Monk, W., Etching of Carnarvon Castle, 51.
Moscrop-Young & Glasfield, Shoreham Cottage, Shoreham, 765, 769.
North & Robin, Design for: Marylebone Municipal Buildings, 631, 632, 675 (see correction on p. 669).
Orr, A. A., Window, St. Ann's Church, Manchester, 341.
Osborne, M., La Tour des Halles, Bruges, 481.
Pace, C. L., Australian Coat-of-Arms, 373.
Pain Clark, J., Premises, Chelsea, 467.
Pepler & Allen, Plan, Garden Village, Alton Park, Clacton-on-Sea, 250.
Pite, Beresford: Additions to Burlington-arcade, London, 393; St. Paul's Cathedral, Uganda, 420.
Pounting, C. E., Church of St. Mary, Dorchester, 638.
Poston, G. G., Gates, Forest-lane, Stratford, 559.
Poyntier, A., Clock-tower, Buenos Aires, 741.
Ransome, J., Presbyterian Church, Umballa, 480, 481.
Reynolds-Stephens, W., Proposed King Edward Memorial Scheme, 367, 368.
Robert, II., a Monumental Approach, 59.
Rogers, J. C., R.A. Schools Design for Gold Medal, 776.
Rousseau, J., Theatre at Amiens, 322.
Sanderson, G., the Mitra Museum, 421, 425, 426.
Saxe & Archibald: School for Technical Education, Montreal, 119.
Scott, Christie, & Johnson, Bungalow, Shanghai, 9.
Sharp, C. A., North Surrey District Schools, Anerley, 43.
Stirling, R., Monument in the Pantheon, 565.
Simon, F. W., Design for: Manchester Library and Art Gallery, 706, 707, 717-719.
Skipper, G. J., Sennowe Park, Norfolk, 322-330.
Smith, J., Myrtle, Design, Cardiff Technical Institute, 739.
Spain, J. E., Dixon, House at Fleet, 447, 449.
Spalding & Myers & E. G. Theakston, Design, Cardiff Technical Institute, 740.
Spencer, E., Level, Trowels, and Mallet, Royal National Library of Wales, Aberystwyth, 41.
Stabler, H., Precious Metalwork, 66.
Steele, F. H., Silver Bowl, 66.
Stone, H. C., the Royal Bank of Canada, Montreal, 135.
Tait & Whitelaw, Design for: Marylebone Municipal Buildings, 668, 669.
Tanner, H., Design for: Rebuilding Oxford-crozier, 302.
Taylor, W. A., House, Llynsted, Sitingbourne, 23.
Thomas, A. Brunwell, First Premiated Design, Deptford Public Library, 153, 157.
Thompson, W. H., 'Tram Shelter,' 65.
Thomson & Sandilands, Hutcheson's Educational Trust School, Glasgow, 255, 256.
Truelove, J. R., Design, Marylebone Municipal Buildings, 666, 667.
Tugwell, S., Alterations to Norman-court, Salisbury, 1, 8.
Unsworth, W. F., 'Saracens,' Mayford, 420, 421.
Walker, M. E., & A. W. Harwood, House at Woking, 772.
Waller, J. H. de W., Reinforced Concrete Bridge, University College, Cork, 762, 783.
Walls & Bowden, Design for: Marylebone Municipal Buildings, 629, 630 (see correction on p. 669).
Warwick & Hall: Design for: Manchester Library and Art Gallery, 714, 715; Design for: Marylebone Municipal Buildings, 632-634; Sylvester House, Hackney, 227, 228.
Whitac, W. B., the Mitchell Library, Glasgow, 569, 570, 572.
Widdows, G. H., Ilkeston Secondary School, 510.
Wilson, W., & Wills & Anderson, Second Premiated Design, School at Roman-hill, Lowestoft, 536, 537.
Woollett, J., the Castle, Nottingham, 571, 572.
Worthington & Son, Design for: Manchester Library and Art Gallery, 715, 716.
Young, A. Stanley, 'Mercury,' 479.

ILLUSTRATIONS.

[The Illustrations will be found on, or immediately following or preceding, the pages indicated.]

- ABERDARE, Isolation Hospital: E. C. H. Maidman, Architect, 511.
Aberystwyth, National Library of Wales: S. K. Greenslade, Architect, 42 (Trowels, etc., Royal, by E. Spencer, 41).
Æolian Hall, the: Walter Cave, Architect, 599, 605.
Amali, 661-663.
Amiens, Theatre at: by J. Rousseau, 322.
Ankerly, North Surrey District Schools: Cecil A. Sharp, Architect, 43.
'Antique et Moderne': M. Jean Boucher Sculptor, 597.
Approach, a Monumental: by H. Robert, 59.
Arcade Additions, Burlington, London: Beresford Pite, Architect, 393.
Architectural Association Excursion, 497, 500, 502, 503 (Sketches by W. Curtis Green, 212-214, 235, 240-242, 246).
Architectural Association, Silver Medal Drawings ('Unconquered Hall') Design by G. W. Home, 401, 402.
'Architecture': Statue for Tomb: M. E. L. Barrias, Sculptor, 594.
Arding & Hobbs's Premises, Clapham: J. S. Gibson, Skipwith, & Gordon, Architects, 449-453.
Arms, Royal, St. John's Church, Leeds: Drawn by A. W. Bellis, 13.
Ashley Church, Restoration: C. G. Hare, Architect, 448.
Aston Hall, 641, 642.
Australian Coat of Arms: Drawn by C. L. Pace, 373.
Avignon, Pont St. Bénédicte, 593.
Aray le Rideau, Château of: Sketched by W. Curtis Green, 246.
BALHAM Constitutional Club Additions: W. & E. Hunt, Architects, 379, 390.
Bank Buildings, St. Louis: Eames & Young, Architects, 353.
Bank, Eastern Townships, Montreal: Cox & Amos, Architects, 123.
Bank, Le Crédit Foncier, Franco-Canadian, Montreal: Cox & Amos, Architects, 135.
Bank of Canada, Royal, Montreal: H. C. Stone, Architect, 135.
Bank of Commerce, Canadian, Fort William: V. D. Horsburgh, Architect, 165.
Bank of Commerce, Canadian, Montreal: Darling & Pearson, Architects, 122, 135.
Beaulieu, Lock House: Walter Cave, Architect, 600.
Beckford Church, Worcestershire, 747.
Bedford Church, St. Leonard's: G. P. Allen, Architect, 71.
Berlin: Belle Alliance Bridge, 413; Sieges Allee, 2, 3.
Bernes, Bridge, 324.
Besford Church, 542.
Bethlehem, Church of the Nativity, 179, 187, 188.
Birlington Churchyard Cross: G. Cogswell, Architect, 542.
Blois, Sketches at: by W. Curtis Green, 212, 213, 246 (see also 497, 502).
Blomfield, Professor Reginald, Portrait of, 94.
Blyth, Houses: E. Cratney, Architect, 474.
Bodleian Library, Oxford, 639.
Boulevard Improvement, St. Louis: Eames & Young, Architects, 353.
Boxmoor, 'Feldenhurst': A. E. Bullock, Architect, 57.
Bramshill, Entrance Front, 639.
Brass, Islip Church: Designed by T. G. Gawthorp, 306.
Bredon Church, Jacobean Tomb, 543.
Bridge of St. Angelo, Rome, 13.
Bridge, Reinforced Concrete, University College, Cork: Designed by J. H. de W. Waller, 762, 783.
Bridge, St. Paul's, Proposed: R.A. Schools Design: by L. H. Bucknell, 43.
Bridges, 155, 156, 164, 181-183, 191, 210, 211, 219, 233, 239, 247, 265-268, 275, 284-296, 323-326, 328-335, 393, 409, 412-414, 420.
Bromley, School: H. P. Burke Downing, Architect, 448, 449.
Bruges, La Tour des Halles: Drawn by Malcolm Osborne, 481.
Bruges, Notre-Dame, 208, 209.
Bruxelles-aux-Champs, 484.
Budapest, Bridge, 325.
Buenos Aires, Clock-Tower, 741.
Bungalow, Radpole, near Weymouth: Vernon Hodge, Architect, 216.
Bungalow, Shanghai: Scott, Christie, & Johnson, Architects, 9.
Burford Priory, End of Chapel, 646.
Burlington Arcade Additions, London: Beresford Pite, Architect, 393.
Bury Secondary School: J. T. Halliday, Architect, 242, 243.
CARDIFF, Glamorgan County Hall: E. Vincent Harris & T. A. Moodie, Architects, 541.
Cardiff, National Museum of Wales: Design by H. V. Lanchester & E. A. Rickards, 330.
Cardiff Technical Institute: Selected Design, by Ivor Jones & P. Thomas, 737; Second Design, by Cooper & Slater, 739; Third Design, by J. Myrtle Smith, 739; Fourth Design, by Spalding & Myers & E. G. Theakston, 740.
Carlton House-terrace, No. 10: Detmar J. Blow & F. Billerey, Architects, 391, 392.
Carnarvon Castle: Etched by W. Monk, 51.
Castings, Figure: Designed by Hibbert Binney, 546.
Castle, the, Nottingham: Drawn by J. Woollett, Architect, 571-573.
Cathedral, Orense, Spain: Drawn by H. C. Brewer, 540.
Cathedral, St. Paul's, Uganda: Beresford Pite, Architect, 420.
Cathedral, Santiago, the Puerta de la Gloria: Drawn by H. C. Brewer, 540.
Cave, Walter, Portrait of, 598.
Ceiling Decoration, Sketch for: by Alberti, 69.
Chain Supports in Bronze, L.C.C. Hall: E. Knott, Architect; G. Bayes, Sculptor; Drawing by J. R. Leathart, 275.
Chantilly, the Château: by J. Bullant, 380.
Chapel of the Tinsle, Edinburgh: R. S. Lorimer, Architect, 62-64, 72, 73.
Château de Chiverry, 437; Rougemont, 320.
Châteaux, French, Sketches of: by W. Curtis Green, 214, 235, 246, 502, 503.
Chatsworth Bridge and House, 296.
Chelsea, Premises: J. Pain-Clark, Architect, 467.
Chenonceaux Château, 207, 214, 503.
Chinese Bridge, 211.
Cholsey Church, Berks, 388, 389.
Church, Ashley, Restoration: C. G. Hare, Architect, 448.
Church, Beckford, Worcestershire, 747.

USTRATIONS (continued):—

urch, Bedford, St. Leonards: G. P. Allen, Architect, 71
 urch, Bethlehem, the Nativity, 179, 187, 188
 urch, Dorchester, St. Mary: C. E. Ponting, Architect, 658
 urch, Edington, Wilts: Drawn by T. F. W. Grant, 274
 urch, Epping, St. John's: G. F. Bodley, Architect, 65
 urch, Howden, St. Peter: Drawn by J. B. F. Jowper, 511
 urch, Inkberrow, Worcestershire, 748
 urch, Kensington: James Brooks, Son, & Adkins, Architects, 480, 481
 urch, Messina, 247
 urch, Mold, 544, 545
 urch, Stamford, St. Mary's: Drawn by J. B. F. Jowper, 511
 urch, Umballa: J. Ransome, Architect, 480, 431
 urch, Upton, Norfolk, St. Margaret: Sketch by W. Davidson, 185, 186
 urch, Wells, St. Cuthbert's: Drawn by J. B. F. Jowper, 511
 urch, Workop Priory, New East End: Harold Brakspear, Architect, 449
 urches, Worcestershire, 541 543, 747, 748
 urch-on-Sea, Garden Village, Alton Park: Pepler & Allen, Architects, 250
 urch, St. John's, 244, 245
 urch, Tower, Buenos Aires, 741
 urch, Balham Constitutional, Additions: W. & E. Hunt, Architects, 379, 390
 urch, Brookdale, First East-iron Bridge, 326
 urch, at Arms, Australian: Drawn by C. L. Pace, 511
 urch, Moselle Bridge, 531
 urch, Oxford, St. John's: Measured Drawing, by J. B. Fulton, 645
 urch, Seale Hayne, Newton Abbot: A. F. & F. Catteridge, Architects, 244, 245
 urch, Hall (A.A. Medal): Design by G. Wyville Jones, 401, 402
 urch, Monasteries, Lower Egypt, 421-424
 urch, Consumptive Sanatorium: E. C. H. Maidman, Architect, 511
 urch, Reinforced Concrete Bridge, University College: Design by J. H. de W. Waller, 782, 783
 urch, at Croyle, 360
 urch, Coachman's, Sennow Park, Norfolk: G. J. Skipper, Architect, 329
 urch, Shoreham: Moscor-Young & Glanville, Architects, 765, 766
 urch, at Letchworth: R. F. Johnston, Architect, 190
 urch, Newton St. Cyres, Crediton, 359
 urch, 'Wyphurst': Reginald Blomfield, Architect, 91, 105
 urch, Memorial to King Edward: A. Marshall Mackenzie & Son, Architects, 300
 urch, Churchyard, Birmingham: G. Cogswell, Architect, 542
 urch, Churchyard, Wick: Restored by C. G. Hare, 153
 urch, Cottage at, 350
 urch, Entrance Doorway to Friends' House, 272
 urch, House, San Francisco: Eames & Young, Architects, 365
 urch, SIR T. MANLY, Portrait of, 37
 urch, Central Library: First Premiated Design, by A. Brunwell Thomas, 153, 157; Second Premiated Design, by Castle & Warren, 97, 158; Third Premiated Design, by H. T. Pugh, 158, 159
 urch, room, Castle of St. Angelo, Rome: Drawn by A. W. Bellis, 13
 urch, Church of St. Mary: C. E. Ponting, Architect, 638
 urch, D. G., Portrait of, 562
 urch, Nedini, New Zealand, Residence: B. B. Hooper, Architect, 339
 urch, Amalfi, 662
 urch, King Edward Memorial Hospital: F. Hall Jones & E. C. Cummings, Architects, 274, 75
 urch, W. S., Portrait of, 352
 urch, Chapel of the Thistle: R. S. Lorimer, Architect, 62-64, 72, 73
 urch, Church, Wilts: Drawn by T. F. W. Grant, 274
 urch, Railway Station, Schöneberg, 482, 483
 urch, abnckum Scheme, a Forgothen, London, 483
 urch, Temple of Artemis (Diana), at Restoration: by A. E. Henderson (Sculpture) by G. F. Bodley, 339
 urch, the City of: by E. Falkener, 415
 urch, Interior of Hill Hall, 64
 urch, St. John's Church: G. F. Bodley, Architect, 65
 urch, 'Burducks': E. Guy Dawber, Architect, 12
 urch, 'Roche Court': Walter Cave, Architect, 605
 urch, 'Little Court': Walter Cave, Architect, 604
 urch, Castings: Designed by Hibbert Binney, 549
 urch, House at: J. E. Dixon Spain, Architect, 447, 449
 urch, William, Detail of Canadian Bank of Commerce: V. D. Horsburgh, Architect, 165
 urch, Sculpture, Some Modern, 593 597

GARDEN, Bedford, 775
 Garden, the Water, Sennow Park, Norfolk: G. J. Skipper, Architect, 330
 Gardens, Mellerstain, N.B.: Reginald Blomfield, Architect, 503
 Gate, Bromley Boys' School: H. P. Burke Downing, Architect, 448
 Gate, Courtyard, Hills Castle, Kirkcudbrightshire: Drawn by Sydney H. Miller, 191
 Gate, Hatfield: Drawn by J. Starkie Gardner, 378
 Gates, Iron, English, 557-558
 Gates, Uffington Church: Drawn by F. J. Lenton, 393
 Geroma, Bridge, 219
 Glamorgan County Hall, Cardiff: E. Vincent Harris & T. A. Moodie, Architects, 541
 Glasgow, Mitchell Library: W. B. Whitley, Architect, 569, 570, 572
 Glasgow, School: Thomson & Sandilands, Architects, 255, 255
 Gubbio, Umbria, Bridge at, 412
 HACKNEY INFIRMARY, Nurses' Home, etc.: W. A. Finch, Architect, 284
 Hackney, Sylvester House: Warwick & Hall, Architects, 221, 228
 Hague, Bridge and Gatehouse at the, 248
 Hall, Zeilan: Walter Cave, Architect, 599, 605
 Hall, Concord: Architectural Association Silver Medal Drawings, by G. Wyville Jones, 401, 402
 Hall, Glamorgan County, Cardiff: E. Vincent Harris & T. A. Moodie, Architects, 541
 Hall of a City Company, R.A. School Designs for, Prize Design, by A. Binning, 744-747
 Design by Adrian Berrington, 776, 777; Design by L. H. Bucknell, 746 747; Design by J. C. Rogers, 776
 Hall, Recreation, Southall: A. Marshall Mackenzie & A. G. R. Mackenzie, Architects, 550
 Hampstead Garden Suburb, 416
 Hatfield, Gate at: Drawn by J. Starkie Gardner, 378
 Hatfield House, Herts, 643
 Hertford, Bengoe House: Walter Cave, Architect, 601, 605
 Highways, Recessed Frontages in, 139
 Hill's Castle, Kirkcudbrightshire, Gate to Courtyard: Drawn by Sydney H. Miller, 191
 Hitchin, the Red House: J. Algeron Hallam, Architect, 639
 Home, Nurses', and Lunacy Wards, Hackney Infirmary: W. A. Finch, Architect, 234
 Hospital, British, Montevideo: J. Adams, Architect, 506, 507
 Hospital, Isolation, Aberdeen: E. C. H. Maidman, Architect, 511
 Hospital, King Edward Memorial, Ealing: F. Hall Jones & E. C. Cummings, Architect, 274, 275
 House, Beaucliff (Look): Walter Cave, Architect, 600
 House, Bramhill, 639
 House, Carlton House-terrace: Detmar J. Blow & F. Bailey, Architects, 391, 392
 House, Chequers Court, Bucks: the Hall: Reginald Blomfield, Architect, 95
 House, Country, Design for a: by C. Castelow, 13
 House, Cranleigh, 'Wyphurst': Reginald Blomfield, Architect, 91, 105
 House, Fairfield ('Burducks'): E. Guy Dawber, Architect, 12
 House, Fareham (Roche Court): Walter Cave, Architect, 605
 House, Farthingstone (Little Court): Walter Cave, Architect, 604
 House, 'Feldenhurst', Boxmoor: A. E. Bullock, Architect, 67, 68
 House, Fleet: J. E. Dixon Spain, Architect, 447, 449
 House, Hertford (Bengoe): Walter Cave, Architect, 601, 605
 House, Hitchin (the Red): J. Algeron Hallam, Architect, 639
 House, Idea for a: by A. T. Bolton, 644
 House (Kent), Knightsbridge: Reginald Blomfield, Architect, 96, 102
 House, Lymington (St. Austin's): Walter Cave, Architect, 605
 House, Lynsted, Sittingbourne: W. Allen Taylor, Architect, 23
 House, Moundsmere Manor, Hants: Reginald Blomfield, Architect, 102, 103
 House, Salisbury, Norman Court: S. Tugwell, Architect, 1, 8
 House, Sandwich ('Whitehall'): Reginald Blomfield, Architect, 94
 House, 'Saracens', Mayford, Woking: W. F. Unsworth, Architect, 420, 421
 House, Sennow Park, Norfolk: G. J. Skipper, Architect, 328-330
 House, Wallingford ('Ewclme Down'): Walter Cave, Architect, 591
 House, West Bay, Dorset: Crickmay & Sons, Architects, 36, 37
 House, Woking: M. E. Walker & A. W. Harwood, Architects, 772
 Houses, Blyth: E. Cranney, Architect, 474
 Houses, Some London, 527-530
 Housing Scheme, Hackney: Warwick & Hall, Architects, 227, 228
 Howden, Church of St. Peter: Drawn by J. B. F. Jowper, 511
 Hyde Park-corner Improvement, Memorial to King Edward: by S. D. Adhead, 135

ILKESTON SECONDARY SCHOOLS: G. H. Widdows, Architect, 510
 India, the Muttra Museum Extension: Gordon Sanderson, Architect, 421, 424, 425
 Inkberrow Church, Worcestershire, 748
 Inna, the George, Southwark, 272
 Institute of Architects: Owen Jones Prize Drawings: by A. W. Bellis, 13
 Institute, Technical, Cardiff (see 'Cardiff')
 Ironwork, English, 557-560
 Isip Church, Brass: Designed by T. G. Gawthorp, 395

JACOBAN ARCHITECTURE, 639-648

KENSINGTON, Church: J. B. Adams, Son, & Adkins, Architects, 480, 481
 Kensington Palace, the Orangery Interior, 271
 King Edward Memorial: Scheme by W. Reynolds-Stephens, 367, 368
 Kirby Hall, Northants, 648
 Kitchen, Stanton Harcourt, Oxford: Drawn by Sydney H. Miller, 190, 191
 Knightsbridge, Kent House: Reginald Blomfield, Architect, 96, 102

LEEDS, Royal Arms, St. John's Church: Drawn by A. W. Bellis, 13
 Letchworth, Cottages at: R. F. Johnston, Architect, 190
 Lethbridge Bridge, Alberta, Canada, 385
 Library and Art Gallery, Manchester (see 'Manchester')
 Library, Deptford (see 'Deptford')
 Library, Mitchell, Glasgow: W. B. Whitley, Architect, 569, 570, 572
 Library, Monkwearmouth: E. Cranney, Architect, 98
 Library, National, of Wales, Aberystwyth: S. K. Greenslade, Architect, 42 (Trowels, etc., Royal, by E. Spencer, 41)
 Library, St. Louis, Crundenbranch: Eames & Young, Architects, 363
 Limestone Illustrations, 697, 698
 Lincoln Minster, Capitals, 195
 Liverpool: Proposed King Edward Memorial, St. George's Hall, 693; University School of Architecture Designs, 65
 Llangollen Bridge, 210
 Loches, le Château Royal: Sketched by W. Curtis Green, 246
 Lodge, Entrance, St. Louis: Eames & Young, Architects, 363
 Loggia in a Public Garden: R.A. Travelling Studentship Drawings, by A. Berrington, 164, 165
 Loggia, Montgomery Duicy, 437
 London County Council Hall, Chain Supports in Bronze: R. Knott, Architect; G. Bayes, Sculptor: Drawing by J. R. Leathart, 275
 London: Houses, Some, 527-530; London and Waterloo Bridges, 294
 Louvre, the South Front, 319
 Lowestoft, School at Roman Hill: Design placed first, by Bryan & Hodges, 536; Design placed second, by W. G. Wilson & Wills & Anderson, 556, 537
 Lymington, 'St. Austin's': Walter Cave, Architect, 605
 Lynsted, House at: W. Allen Taylor, Architect, 23

MANCHESTER LIBRARY and Art Gallery: Designs by: H. P. Adams & C. H. Holden, 719; Robert Atkinson, 706, 707, 708; Bradshaw & Gass, 707, 709-711; Cooper & Slater, 707, 711, 712; Crouch, Butler, & Savage (Selected Design), 706, 707; R. F. Farrar, 707, 720; A. G. Henderson, 707, 712, 713; F. W. Simon, 706, 707, 717-719; Warwick & Hall, 714, 715; Worthington & Son, 715, 716
 Manchester, Window in St. Ann's Church: Designed by A. A. Orr, 341
 Map of Part of Surrey, 136
 Marylebone Municipal Buildings: Designs placed: First, by T. Edwin Cooper, 623, 628, 629, 674; Second, by Wallis & Bowden, 629, 630; Third, by North & Robin, 631, 632, 675 (see correction on p. 659); Fourth, by Warwick & Hall, 632, 633, 634
 Marylebone Municipal Buildings: Designs by: Robert Atkinson, 665, 675; W. Curtis Green, 665, 666, 675; Jemmett & McCombie, 670; Lancaster & Rickards, 667, 675; Lucas & Lodge and C. A. Farey, 669; Trail & Whitelaw, 666, 669; J. Reginald Trulove, 666, 667
 Mayence, New Bridge, 331
 Mayford, Woking, House: W. F. Unsworth, Architect, 420, 421
 Mellerstain, N.B., New Gardens: Reginald Blomfield, Architect, 503
 Memorial to King Edward, Catholic Church: A. Marshall Mackenzie & Son, Architects, 300
 Memorial to King Edward, Hyde Park-corner: by S. D. Adhead, 135
 Memorial to King Edward, Liverpool, Proposed, 593
 Memorial to King Edward: Scheme by W. Reynolds-Stephens, 367, 368
 'Mercury': by A. Stanley Young, 479
 Messina, Church at, 247
 Mississippi, Bridge over the, 382
 Model Plan of Ancient Rome: by P. Bigot, 303

ILLUSTRATIONS (continued) —

- Mold Parish Church, 544, 545
 Monasteries, Coptic, Lower Egypt, 421-424
 Monkwearmouth, Library: E. Cratney, Architect, 58
 Montacute House, Somersetshire, 349
 Montauban, Bridge, 219
 Montevideo, British Hospital: J. Adams, Architect, 506, 507
 Montreal, Canadian Bank of Commerce: Darling & Pearson, Architects, 122, 135
 Montreal, Eastern Townships Bank: Cox & Amos, Architects, 123
 Montreal, Le Crédit Foncier, Franco-Canadian: Cox & Amos, Architects, 135
 Montreal, Royal Bank of Canada: H. C. Stone, Architect, 135
 Montreal, School for Technical Education: Saxe & Archibald, Architects, 119
 Monumental Approach, a: by H. Robert, 59
 'Monument aux Morts,' Paris: M. Bartholomé, Sculptor, 593
 Monument, Clarion, Condé-sur-Escaut: M. Gauquie, Sculptor, 595
 Monument in the Pantheon: F. Sicard, Sculptor, 565
 'Monument to the Glory of the Independence of a Great Country' (Prix de Rome): Designs by MM. René F. H. Mirland and A. J. L. Japy, 286, 299
 Monument, Victor Hugo, Paris: M. E. L. Barrias, Sculptor, 596
 Monuments, Well-placed, New York, 605-607
 Messale, Bridge over the, 384
 Moundsmere Manor, Hants: Reginald Blomfield, Architect, 102, 103
 Municipal Buildings, Marylebone (see 'Marylebone')
 Museum, National, of Wales, Cardiff: Designs by H. V. Lanchester & Richards, 330
 Museum, the, Muttra, India: Extensions, Gordon Sanderson, Architect, 421, 424, 426
 NAVILLY, Bridge at, 414
 Navers, Porte de Paris, 15
 Newcastle, High Level Bridge, 323
 Newton Abbot, Seale Hayne College: A. F. & R. F. Gutteridge, Architects, 244, 245
 Newton St. Cyres, Crediton, 359
 New York, Pennsylvania Railway Station: McKim, Mead, & White, Architects, 218, 219
 New York, Well-placed Monuments in, 605-607
 Nottingham, the Castle: Drawn by J. Woollett, 571-573
 Nurses' Home, etc. Hackney Infirmary: W. A. Finch, Architect, 284
 ORENSE CATHEDRAL, Spain: Drawn by H. C. Brewer, 540
 Orléans, Bridge over the Loire, 421
 Oxford-circus, London, Design for Rebuilding: Henry Tanner, Architect, 302
 Oxford, Porch of St. Mary's Church, 639
 Oxford, St. John's College: Measured Drawing by J. B. Fulton, 645
 Oxford, Schools (the Bodleian Library), 639
 Oxford, Stanton Harcourt: Kitchen, Drawn by Sydney H. Miller, 190, 191
 PALACE OF DIOCLETIAN at Spalato: Restoration by E. Hébrard, 303-305
 Pantheon, Monument in the: F. Sicard, Sculptor, 565
 Paris, Fontaine de Grenelle: by E. Bouchardon, 321
 Paris, Grand Prix de Rome: Designs by MM. René F. H. Mirland and A. J. L. Japy, 286, 299
 Paris, 'Monument aux Morts': M. Bartholomé, Sculptor, 593
 Paris, Monument in the Pantheon: F. Sicard, Sculptor, 565
 Paris: Bridges from St. Gervais, 296: La Chapelle du Val de Grâce, 481, 482: Sculpture from 355, 593-597: the Hôtel Davaux, 455; the Pont Neuf, 324; the Tuileries, 436
 Paris, 'The Triumph of the Republic': M. Dalou, Sculptor, 595
 Paris, Victor Hugo Monument: M. E. L. Barrias, Sculptor, 596
 Parliament Building, Wellington, N.Z.: J. Campbell & C. Paton, Architects, 566
 Pennsylvania Railway Station, New York: McKim, Mead, & White, Architects, 218, 219
 Police Station and Courts, Stockport: J. T. Halliday & C. Paterson, Architects, 273
 Polytechnic, Regent-street, London: F. T. Verity & G. A. Mitchell, Architects, 573-576, 675-678
 Portrait of: Reginald Blomfield, 94; Walter Cave, 598; T. Manby Deane, 37; D. G. Driver, 562; W. S. Lames, 352; T. C. Young, 352
 Premises, Chelsea (King's-road): J. Pain-Clark, Architect, 467
 Premises, Clapham Junction: J. S. Gibson, Skipwith & Gordon, Architects, 449-453
 Premises, Gray's Inn-road, London: Hart & Waterhouse, Architects, 480, 517
 Premises, Mortimer-street, W.: W. & E. Hunt, Architects, 480
 Premises, Oxford-circus: Henry Tanner, Architect, 302
 Premises, Threadneedle-street, E.C.: H. Chatfield, Architect, 339
 Pugin Studentship Drawings: by J. B. F. Cowper, 511
 RADIPOLE, Bungalow at: Vernon Hodge, Architect, 216
 Railway Station, Pennsylvania, New York: McKim, Mead, & White, Architects, 218, 219
 Residences, Dunedin, New Zealand: B. B. Hooper, Architect, 339
 Residence, St. Louis: Eames & Young, Architects, 355
 Residence, Town, Viscount Ridley's: Detmar J. Blow & F. Billerey, Architects, 391, 392
 Rochefort-sur-Mer, Gate of the Prefecture, 15
 Roman Bridges, 181-183, 191
 Rome: Bridge of St. Angelo, 13; Model of, Liverpool, 291; Museo Barracco, 263, 268, 269; 'Passeggiata Archeologica' of, 191-193; Ponte Rotto, 409
 Rome, Castle of St. Angelo, Dining-room: Drawn by A. W. Bellis, 13
 Rome, Model and Plan of Ancient: By P. Bigot, 303
 R.A. Schools Design: A Loggia in a Public Garden, by A. Berrington, 164, 165
 R.A. Schools Design: Proposed St. Paul's Bridge, by L. H. Bucknell, 43
 R.A. Schools, Gold Medal Designs (Hall of a City Company): Prize Design, by Alan Binning, 744-747; Design by Adrian Berrington, 746, 777; Design by L. H. Bucknell, 746, 747; Design by J. C. Rogers, 776
 R.A. Schools: 'Winter,' Design by A. G. Barnes, 731
 Rye, Town Hall: Measured Drawings by J. R. Leathart, 541
 ST. LOUIS, Buildings, etc.: Eames & Young, Architects, 353-355, 362, 363
 St. Paul's Bridge, Proposed: R.A. Schools Design, by L. H. Bucknell, 43
 Salisbury, Alterations to Norman Court: Sydney Tugwell, Architect, 1, 8
 Sanatorium, Consumptive, Cork: E. C. H. Maidman, Architect, 511
 Sandwich, 'Whitehall': Reginald Blomfield, Architect, 94
 San Francisco, Customs House: Eames & Young, Architects, 363
 Santiago Cathedral, Puerta de la Gloria: Drawn by H. C. Brewer, 540
 Saumur, St. Pierre, 439
 Schiller Monument, New York, 606
 Schöneberg, Electric Railway Station, 482, 483
 School, Bromley: H. P. Burke Downing, Architect, 443, 449
 School, Barry Secondary: J. T. Halliday, Architect, 242, 243
 School, Glasgow: Thomson & Sandilands, Architects, 255, 256
 School, Ilkeston Secondary: G. H. Widdows, Architect, 510
 School, Lowestoft: Design placed first, by Bryan & Hodges, 556; Design placed second, by W. G. Wilson and Wills & Anderson, 536, 537
 School, Technical Education, Montreal: Saxe & Archibald, Architects, 119
 Schools, North Surrey District, Anerley: Cecil A. Sharp, Architect, 43
 Sculpture: Modern French, 593-597; Paris and Versailles, 363-365
 Sennowe Park House, Norfolk: G. J. Skipper, Architect, 323-330
 Shadwell, Proposed King Edward Memorial: Scheme by W. Reynolds-Stephens, 367, 368
 Shanghai, Bungalow: Scott, Christie, & Johnson, Architects, 9
 Sheffield-square, a, 607
 Shop Front, Dover-street, Piccadilly: Walter Cave, Architect, 600
 Shoelham, Cottage: Moscrop-Young & Glanville, Architects, 765, 769
 Southall, Recreation Hall: A. Marsh Mackenzie & A. G. R. Mackenzie, Architects, 330
 Spalato, Palace of Diocletian: Restoration by E. Hébrard, 303-305
 Stamford Church, St. Mary's: Drawn by J. B. Stanton Harcourt, Oxford: Kitchen, Drawn by Sydney H. Miller, 190, 191
 Statue for Tomb, 'Architecture': M. E. Barrias, Sculptor, 594
 Temple of Artemis (Diana) at Ephesus: Restoration, by A. E. Henderson (Sculpture by Bayes), 154
 Theatre at Amiens: by J. Rousseau, 322
 Toledo, Bridge, 395
 Tomb, Saville, Methley Church, near Leeds: Drawn by A. W. Bellis, 13
 Tottenham, L.C.C. White Hart-lane Estate, 137
 Town Hall, Rye: Measured Drawings, by J. Leathart, 541
 'Triumph of the Republic': Paris: M. Dalou, Sculptor, 595
 Trovells and Mallet, Royal, National Library, Wales, Aberystwyth: Designed by E. Spencer, 41
 Trust Company Buildings, St. Louis: Eames & Young, Architects, 363
 Tuileries, the, Paris, 436
 Turin, the Po Bridge, 421
 UFFINGTON CHURCH GATES: Drawn by F. Lenton, 393
 Uganda, St. Paul's Cathedral: Beresford Phipps, Architect, 420
 Umballa, Presbyterian Church: J. Ranson, Architect, 480, 481
 Underpinning, Mr. Price's Method of, 486
 Upton, Norfolk, Church of St. Margaret: Sketched by W. Davidson, 185, 186
 VANNES, Hôtel de Limier, 438
 Venice, Ponte Rialto, 294
 Verona, Ponte della Pietra, 414
 Versailles, Sculpture, 364, 365
 Vestry, St. Lawrence Jewry, London, 271
 WALES, National Library of, Aberystwyth: S. J. Greenslade, Architect, 42; Trowels, etc., Roy: by E. Spencer, 41
 Wales, National Museum of: Design by H. Lanchester & E. A. Rickards, 330
 Wallingford, 'Evelme Down': Walter Cave, Architect, 591
 Warehouses, St. Louis: Eames & Young, Architects, 354
 Wellington, N.Z., Parliament Building: J. Campbell & C. Paton, Architects, 566
 Wells, St. Cuthbert's Church: Drawn by J. B. F. Cowper, 511
 West Bay, Dorset, House at: Crickmay & Son, Architects, 36, 37
 West Point Improvements, U.S.A.: Eames & Young, Architects, 362
 Wick, Churchyard Cross: Restored by C. G. Hay, 748
 Widnes and Runcorn Transporter Bridge, 325
 Wilton, the Double-Cube Room, 359
 Window in St. Ann's Church, Manchester: Designed by A. A. Orr, 341
 'Winter,' Design for Decoration, by A. G. Barnes, 731
 Woking, House: M. E. Walker & A. W. Harwood, Architects, 772
 Worcestershire Churches, Some, 541-543, 747, 748
 Worcester Priory Church, New East End: Harold Brakspear, Architect, 449
 YOUNG, T. C., Portrait of, 352

THE BUILDERS

CONTENTS.

PAGE	PAGE	PAGE
FRAGMENTARY OLD PAINTED GLASS: ITS DUE TREATMENT (WITH ILLUSTRATIONS).....	1	MONTHLY REVIEW OF CIVIC DESIGN:—
NOTES.....	4	ST. PAUL'S BRIDGE (WITH ILLUSTRATIONS).....
THE ROYAL INSTITUTE OF BRITISH ARCHITECTS' ANNUAL DINNER.....	6	"THE TOWN PLANNING REVIEW" (WITH ILLUSTRATIONS).....
ALTERATIONS AND ADDITIONS TO NORMAN COURT, SALISBURY (WITH ILLUSTRATIONS).....	8	THE CITY BEAUTIFUL.....
GENERAL NEWS.....	8	RIVERSIDE EXTENSION SCHEME, NEW YORK (WITH DIAGRAM).....
BUNGALOW AT SHANGHAI (WITH ILLUSTRATIONS).....	9	KHARTOUM (WITH ILLUSTRATION).....
BOOKS (WITH ILLUSTRATION).....	9	NOTES.....
THE LONDON COUNTY COUNCIL.....	11	THE BUILDING TRADE:—
CORRESPONDENCE.....	11	RECENT DERRICK TOWER CONSTRUCTION (WITH ILLUSTRATIONS).....
INTERCOMMUNICATION COLUMN.....	11	BUILDERS' TOOLS IN THE MIDDLE AGES (WITH ILLUSTRATION).....
EDITORIAL SUMMARY.....	12	GENERAL BUILDING NEWS.....
MEETINGS.....	12	APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.....
COMPETITION NEWS.....	12	PROJECTED NEW BUILDINGS IN THE PROVINCES.....
NOTES TO ILLUSTRATIONS.....	12	HOUSE AT LYNSTED, SITTINGBOURNE (WITH ILLUSTRATIONS).....
		LEGAL COLUMN.....
		LAW REPORTS.....
		LONDON COUNCILS.....
		PATENTS.....
		SOME RECENT SALES.....
		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN.....
		PRICES CURRENT.....
		TENDERS.....

Illustrations.

"BURDOCKS," FAIRFORD, GLOUCESTERSHIRE.
MR. E. GUY DAWBER, F.R.I.B.A., ARCHITECT.
DESIGN FOR A COUNTRY HOUSE. BY MR. C. CASTLOW.
R.I.B.A. OWEN JONES PRIZE DRAWINGS.
BY MR. A.-W. BELTIS.



Alterations to Norman Court, Salisbury. Mr. Sydney Tugwell, A.R.I.B.A., Architect. (See page 8.)
(Royal Academy Exhibition, 1911.)

FRAGMENTARY OLD PAINTED GLASS: ITS DUE TREATMENT.

WHEN the restoration of an ancient church is taken in hand, assuming that it has not been dealt with, except by way of occasional repair, for the last 350 years or thereabouts, it is often found that every window exhibits bits, more or less fragmentary, of stained and painted glass of a date prior to the first year of Edward VI., and it must be a rare case indeed when the windows show no remains of old glass.

Speaking, by way of example, of the smaller parish churches, some such arrangement as this is very usual. In the great east window are one or more

figures, often mutilated, of Our Lady or some of the Saints. Sometimes it has been an Annunciation window—Our Lady is there with hands held up in token of wonder, but the Archangel Gabriel, formerly by her side, has wholly or in part disappeared, while, in other cases, the Archangel is there and Our Lady has gone. In other instances a Crucifixion has been in the east window, and there may be left the cross or part of it, with fragments, here and there of the sacred Figure and of Our Lady and St. John on either side and St. Mary Magdalene behind. If there be side chapels, their east windows may show

remains of the coat-armour of those who built them, placed there as mute beseechings for prayers for their souls. The nave or aisle windows on the north side may have remains in their main lights of figures of the Prophets and Evangelists, while on the south side, in the main lights, will be fragments of the Apostles and Saints. The tracery lights will contain small figures of angels, Cherubim or Seraphim or Saints. The west window, if there be one, will usually show fragments of a picture of the Last Judgment, while in all the windows are seen remains of borders—conventional leaves, ostrich feathers, or lions' heads,

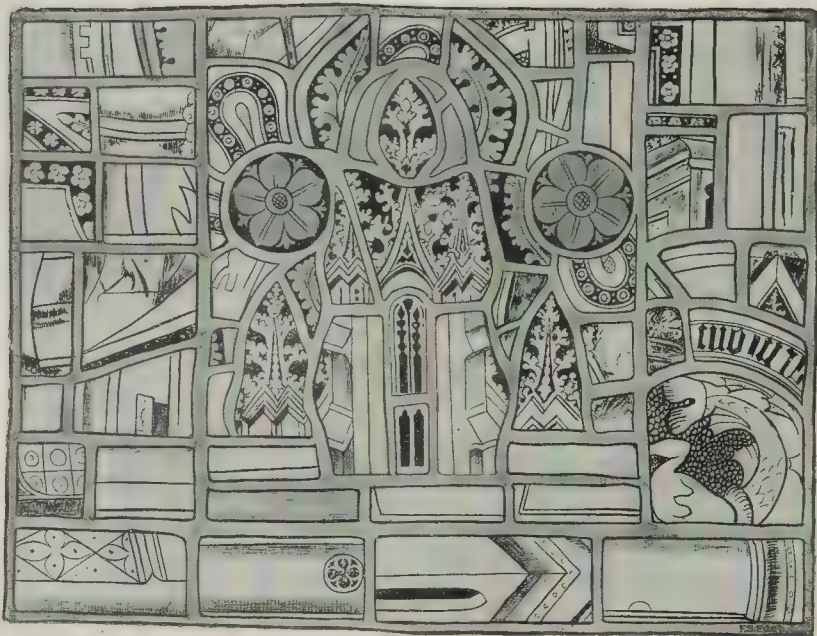


Fig. 1. Fragmentary Glass in Sheering Church, Essex.

maybe, in brown outline heightened with yellow, alternating with pieces of ruby or blue glass—and of quarries decorated with little designs, maple or oak leaf, ivy or vine perhaps, in which the pictures have been set.

The important point is that all these fragments of the old picture windows are, in such a case as we have assumed, the first restoration in modern times of an ancient church, found to-day *in situ*. They are in the positions in which they were originally placed, and, as is evident, they constitute, even in their fragmentary condition, most valuable evidence of the former condition of the church in the matter of window glazing.

The reason for this state of things seems to be that, contrary to popular notions, there was comparatively little violence done to painted church windows in the troublous days of the XVIth and XVIIth centuries. Such violence as there was was probably, so far as secular churches were concerned, chiefly directed against cathedral and collegiate churches, the greater number of which, being in the larger cities and towns, were more exposed to mob violence than country churches. In most places it is probable that the old picture windows were simply left to decay, clear glass being inserted as the pieces of coloured stuff bit by bit fell out of their settings or were accidentally broken. This would seem to be the tale told by the fragmentary painted glass which has survived to our time, even were other testimony lacking. Fortunately, however, we have contemporary evidence on the subject. Harrison, in his "Description of England," prefixed to "Holmes's Chronicle" (Bk. II., ch. 4, p. 223), after referring to the removal and defacement

of images and other "monuments of idolatry," says, "Onlie the stories in glasse windowes excepted, which, for want of sufficient store of new stuffe, and by reason of extreame charge that should grow by the alteration of the same into white panes throughout the realme, are not altogether abolished in most places at once, but by little and little suffered to decaie that white glass may be set up in their rooms." If this statement is reliable, and we know no reason for doubting it, we have a complete explanation of the state to-day of the window glass of our ancient parish churches prior to restoration. Given a set of church windows in the condition which we have pictured, surely, having regard to the high value which such an arrangement has as well for the art student, the architect, and glass painter as for the student of history, ecclesiology, heraldry, and allied subjects, one should study to preserve such a record and to extract from it means whereby the windows of the church, when restored, shall serve the same ends and teach the same lessons as they did of old when filled with painted glass. This notion is in accordance with the idea which is supposed to prompt church restoration nowadays, namely, how to make a church answer the same purposes—worship, sacrifice, prayer, and teaching combined with appreciation of what is fitting in external things—as it was originally meant to serve.

If these be, indeed, the objects to be aimed at in church restoration, how do we stand with regard to the old windows? Have we hitherto dealt with them in a manner helpful towards a restoration of their usefulness and beauty?

In most cases we have not done so.

Whatever the cause may be—thoughtlessness, misapprehension as to the true use of painted glass, monetary considerations, or what not—the lamentable fact is that most people have got to look upon fragmentary old glass as of no practical value, and while out of deference to a half-apprehended notion that it must not be destroyed, but in some way or other preserved, they have not the courage to throw it aside, they do with it what is almost as bad by removing it from its setting, cutting it up into convenient shapes, and leading it all up together into a composite mass of coloured glass. Thus these precious fragments, which if left *in situ* would have served as a key for reconstruction of the old picture windows, are rendered useless, and the only result of such well-meant efforts to preserve old fragmentary glass is to make a "jumble window," a thing dazzling and confusing to the eye, without beauty or teaching capacity, and of no earthly use to anybody. To take a few examples. Why was the fragmentary tabernacle work which formerly stood *in situ* in one of the windows of Sheering Church in Essex, and which might have been a guide in reconstructing a window as nearly as possible similar to itself when new, stuck all together, some pieces sideways, others upside down, mixed up with broken pieces out of other windows, and finally fixed in the head of the south chancel window? Fig. 1 shows this modern example of what not to do with fragmentary old glass.

Again, why did the person responsible for repair of the old glass at Netteswell Church near Harlow perpetrate so ridiculous an anachronism as to tack on to the under part of an ox the lower



Fig. 2. Symbol of S. Luke in North Nave Window, Netteswell, Harlow, Essex.

part of a draped human figure (Fig. 2)? This was, in the circumstances, inexcusable, for a very little study of the fragments in other windows would have shown that the drapery was part of a broken figure belonging to a set (originally four) of which two are still in the tracery of the window opposite to that in which the ox occurs. The arrangement is, two perpendicular side windows facing each other with four tracery compartments in each. In the north window tracery are the symbols of the four Evangelists, among them the ox in question, and on the south are the two figures shown in Fig. 3. No doubt the fragment leaded on to the ox is the lower part of one of the two otherwise lost figures—either Our Lady or St. Mary Magdalene, for it is likely that the four Marys were originally in these tracery lights. Netteswell, too, reminds us that in the head of the south chancel window there are many fragments leaded together haphazard fashion which, had they been left in their original positions, might have enabled us to reconstruct the windows referred to in the *Gentleman's Magazine* (1796, I. 380) as "pictures of two or three of our Kings." Probably these Kings were Sainted Kings, the Edwards and St. Edmund the Martyr.

A jumble window is bad in itself, but it is worse by reason of the fact that it does not completely answer the intentions of those who have caused it to be made. No doubt their purpose is to carefully preserve, in the sense of *not to destroy*, the fragmentary old glass, but their

agent, the glazier, has one object only in view, viz., how to make the fragments fit in with one another and how to make the whole composition, when leaded up, go into the window opening where he is to fix it. The result, of course, is that the fragments are made more fragmentary still, and some actual waste is inevitable. All jumble windows give evidence of this wasteful process—here a piece cut off a letter, there an essential part of a design shorn away. An apt illustration is the quarry from a jumble window in the Lethieullier Chapel at Little Ilford (church, Essex (Fig. 4). This quarry, once rectangular, bearing "the crown in the thorn bush" badge of Henry VII., with his initials H.R. below the badge, has been cut to make it fit into a circular window, and in the cutting the H. has been taken off.

But what is the alternative to the "jumble window"?

True restoration is, first of all and all along, conservation, and so we think that whatever else we do we should preserve such evidence as has survived of the original plan of decoration of each window. If, further, we can restore it to what it was up to the days of Edward VI., thereby renewing its teaching capacity, we shall do well.

Some such plan as the following might be carried out:—

As a preliminary step, each window should be examined at close quarters to see whether any remains of painting,

not visible from the floor level, are still discernible. Any work so brought to light might be strengthened with water-colour mixed with gum-water. This would adhere to the glass and could be washed out afterwards. In this connexion we may mention that it is a common occurrence to find that the lines of faded work, of the existence of which there had been no suspicion when standing on the floor of the church, can upon close inspection be seen.

Accurate tracings might then be made of every window, and from these full-sized coloured drawings could be made for preservation among the parish archives.

An attempt might next be made, working on tracing paper stretched over the original tracing, to reconstruct the window. Of course, if the fragments are so slight as to offer but little guide to the run of the original design, the painter would have to apply his knowledge of ancient art, aided by careful comparison with the other windows of the church and, if possible, those of neighbouring churches, in the reconstructive, or rather semi-creative, process. In many cases, however, little difficulty would be experienced in reproducing the old design from its existing fragments.

The reconstruction accomplished on tracing paper, is the window to be in reality a new one with the old fragments merely leaded in and lost among the new pieces of glass? Emphatically no.



Fig. 3. SS. Mary Cleopha and Mary Salome in Tracery of South Window of Nave, Netteswell, Harlow, Essex.

The fragments ought still to be clearly distinguishable from the reconstructed portion. To this end we would suggest that the fragments, while their exact places in the window are preserved, should be set in sheets of clear white glass, which should fill up the entire window except where the fragments occur. Upon this clear glass the reconstructed parts might be painted in oil colours mixed with amber medium, the leading being indicated by thick black lines. Thus, to a spectator from within the church, while the ancient portion would be easily distinguishable from the new, the whole design would appear as one, and it would depend for its effect upon the knowledge and skill of the man who drew the reconstructed portions.

In the course of time, when criticism had done its work and the reconstruction was finally approved, the sheet glass might be removed, and the reconstructed portions painted in glass colours and leaded up with the fragments in the usual way. Even then, however, the old part should be distinguished in some way from the new, perhaps by the lead round them being gilded. The art student and the antiquary would then, at all times, be able to tell the old work from the new.

For practical demonstration, and by way of suggestion only, an attempt has been made (Fig. 5) partially to reconstruct a piece of XVth-century glass, believed to represent St. Edmund of Canterbury, in the south chancel window of Roding Abbess Church, Essex, and to give the result (Fig. 6). This is, of course, a case where the original positions of the fragments cannot now be exactly ascertained, the run of the design having been lost in 1866 when the existing jumble was made, and it is not, therefore, quite an apposite illustration to our argument, which has been mainly concerned with *unrestored* windows. Still, it may serve

to make our suggestions clearer than they would be without it. We might add that we have confined our remarks to the lower and principal part of this glass. There is a great deal of confused tabernacle work, not shown in the illustrations, over the figure, which we have not attempted to reconstruct, and, with regard to the inscriptions on the scrolls, we have suggested a verse from the sixth Psalm which fits in with the fragments *dne* and *quo*; but we are quite ready

of expense might, in many cases, militate against its adoption. We admit the validity of the objection where money is scarce, and we cannot but think that the proper course in that event is simply to leave the fragments alone, taking care only to re-lead and strengthen the settings where necessary. At a future time, and as funds permit, the reconstructive process might be carried out.

Again, it often happens that a fragmentary ancient window is removed to make way for a modern memorial window. How much better would it be to reconstruct the old glass—a not more expensive process than the designing and making of a new window—and thereby not only to set up a worthy memorial to a departed soul, but to restore a lost feature to the fabric of the church!

NOTES.

A Ministry of Fine Arts.

A SHORT time back we dealt with the obvious necessity for a Minister of Fine Arts, in view of the numerous occasions that arise in which reliable artistic advice should be at the disposal of the Government and other authorities, and we cannot but welcome the action taken by the *Daily Graphic* in obtaining the opinion of some of our leading artists on the desirability of forming a permanent advisory committee of artists in connexion with a Ministry of Fine Arts. Whenever any scheme arises involving one or more of the arts it almost invariably drifts into a state of confusion from which it only emerges after a series of unseemly wrangles in a mutilated and abortive form. Thus all our attempts to secure an adequate artistic expression for our patriotic and national aspirations are nullified by the lack of competent direction at the initiatory stages. This is mainly due to the fact that no provision is made to ensure that those whose



Fig. 4. Quarry at Little Ilford.

to stand corrected on that point, and, indeed, on the whole attempt at reconstruction. We do, however, suggest that nothing in Fig. 6 is incongruous to the ancient fragments, and that, on the whole, it constitutes a more useful and teachable picture than the patched-up design in Fig. 5.

No doubt it may be objected that such a plan for dealing with fragmentary old glass as we have ventured to put forward is in the nature of a counsel of perfection, and that considerations



Fig. 5. XVth-Century Glass at Roding Abbess Church.



Fig. 6. Suggested Reconstruction.

opinion is of real value are consulted, and decisions of the highest artistic importance are left to quite unqualified authorities, elected or appointed to perform services utterly different in character. We need not quote instances, they are present in the minds of all, and form the most conclusive arguments in favour of some form of artistic authority not merely critical in its functions, but also charged with the duty of organising the methods to be adopted in the realisation of all important proposals having an æsthetic intention.

St. Paul's Bridge. WE are glad to be able to congratulate the City Corporation on taking the reasonable course of consulting Sir William Emerson, Mr. T. E. Colcutt, and Mr. J. J. Burnet to advise them as to their future course of action in dealing with a town-planning scheme of such unusual architectural interest and importance. We presume these gentlemen are to be asked for their independent advice on the whole situation. A delicate and most responsible duty is placed upon them, in the right discharge of which they will, we are sure, receive the whole-hearted support of the profession. In such matters as this a public authority is often in the position of needing someone to advise them how and where to obtain advice, what steps to take to ensure that the work they have in hand is entrusted to those who are specially qualified to undertake it. We are confident that everyone can rely on the public spirit and fearless independence of the gentlemen selected, and that, realising the gravity and the magnitude of the issues involved, they can be relied on to advise the course of action they honestly believe to be in the best interests of architecture and to the credit and ultimate renown of the City of London.

St. Paul's Bridge and Continental Methods. It has always been understood that the former Chairman of the Bridge House Estates Committee announced the intention of his Committee to advise the Corporation to institute a competition for St. Paul's Bridge. We hope this intention has not been abandoned, as the question is essentially a public one, appealing to the imagination and public spirit of all architects or town planners. Nothing but good can possibly arise from enlisting the active sympathy and interest of all those who have given any thought to the matter, or from collecting the best ideas on the subject; for these do not always occur just at the right moment to the most gifted of individuals or the most competent of permanent officials. Particularly is it necessary to obtain the ideas of the younger generation, for, by reason of their superior education in monumental planning, the most able monumental designers should, if education counts for anything, be found in their ranks. Without a competition these ideas may never see the light. If we are to obtain such satisfactory results as are to be seen in many Continental capitals we cannot do better than emulate, not only their combined enthusiasm and breadth of view, but also their better methods of procedure, as seen, for instance, in the methods

adopted by the Municipality of Vienna in dealing with the problem of the layout of the Karlsplatz. Not only was a competition held in which awards were made to Dr. Stiibben, Dr. Otto Wagner, Professor Meyreder, and Professor Back, in conjunction with an engineer, but official designs were afterwards made by Professor Meyreder and then further studied for modifications by Dr. Otto Wagner and Professors Ohmann and Goldemund. The procedure here adopted to obtain the best results is most striking. First of all, the importance of the matter is fully recognised by those responsible. Nothing is considered final while improvement is possible, neither time nor expense is spared. A system obtains whereby the best minds can be brought to bear on the subject and to contribute ideas to the common fund. Every one seems willing to work loyally together and to be perfectly ready to abandon or modify his own ideas in face of better ones, to subordinate his own personal interests and opinions for the common good of the community, so as to obtain by combined effort a finer result than any one man alone would be likely to achieve. That is what is wanted here. We have no doubt whatever that architects in this country would be capable of the same disinterested and public spirited action if they were appealed to in the right way. We would again most emphatically point out that the public interest demands that the best available talent be employed in the public service, whether it be secured by means of a competition or not.

The R.I.B.A. Address to the King.

THE R.I.B.A. illustrates in the *Journal* the address presented to his Majesty on the occasion of the Coronation. Designed and executed by Mr. Graily Hewitt and Mr. L. Macdonald Gill, the whole is conceived in a thoroughly decorative spirit. The first page displays the Royal arms on a banner laced to two shepherds' crooks, over the centre of this appears the Royal Crown, and above is a shrine enclosing a crown of thorns. The only feature to which we think exception might be taken is the inclusion of the upper stage of the two Westminster Abbey towers on either side of the shrine; they are hardly in scale, and, if intended to suggest that the Abbey front lies behind the banner, are not in correct relationship to each other. The design would have been better had these been omitted. The form and distribution of the lettering in the address itself are deserving of the highest praise.

Our New Stamps.

THE new issue of postage stamps marks another downward step in the quality of what may be termed official art. Apart from the lack of character in the portrait, the design of the enclosing frame is even feebler than in the stamps of Edward VII. The effect of the penny stamp is confused by the lack of symmetry in the lion, which is both out of scale with the wreath, and forms an unsatisfactory starting-point for it, while the attempt at a cartouche in the half-penny stamp is simply lamentable in its lack of decorative firmness and its ragged outline. We may admit a certain quality of draughtsmanship in the penny stamp, but the halfpenny touches the lowest

ebb of ineptitude in design. We may sincerely wish King George V. a long and prosperous reign without desiring any but the shortest life for the stamps that have been prepared to mark his Majesty's Coronation.

Bedford College for Women.

THE governing body have just secured a ninety-nine years' lease of the site and grounds, about 10 acres, of South Villa, Inner Circle, Regent's Park, at a cost of some 18,000*l.*, and propose to expend from 70,000*l.* to 80,000*l.* upon the erection of new buildings after plans and designs which have been prepared by Mr. Basil Champneys; the library, a gift of Lady Tate, will be planned by Mr. Sidney R. J. Smith. South Villa, whose grounds extend to the margin of the lake, was opened two years ago as an additional residence for students of the College in York-place, Baker-street. It was the home of George Bishop, F.R.S., who, in 1837, built the observatory there in which, in 1847-54, Dr. Hind made his renowned observations of the asteroids and discovered ten new planets. About thirty years ago the owner of South Villa obtained a fresh lease from the Crown and spent more than 50,000*l.* upon a general improvement of the property.

Rembrandt's Homes in Amsterdam.

AN exhibition of drawings and etchings by Rembrandt is opened in the house No. 4, St. Antonies Bréestraat, to celebrate its dedication as a museum and library in commemoration of the great artist who lived there in the days of his prosperity, and quitted it in 1658 for humbler quarters in the Rozengracht. The house, which had been subdivided into two and otherwise maltreated, was rescued five years ago at the instance of Joseph Israels and J. P. Hartsen, and, having been acquired from the Municipality, was restored as far as possible to its pristine state under the architect Bazel's directions and superintendence. In the course of the work it was found that the original stepped gable, of 1606, had been removed for the existing one with cornice and pediment, and that the house had begun to lean over. The inventory made in 1656 of Rembrandt's effects has availed as a guide, to some extent, in the reinstatement of the interior apartments, and the arrangement of the exemplars of his work. The later house, wherein he passed the close of his life, is entirely modernised for trade purposes.

Exhibition of Egyptian Antiquities.

THE annual exhibition of the British School of Archaeology, which is at present being held at University College, is of unusual variety and interest. The work accomplished by Professor Petrie and his assistants during the past session has been prolific in its results. The sites of the excavations, Haward, Meydum, and Memphis, were all within 50 miles of Cairo, Professor Petrie having undertaken the charge of the first named (one of his old exploring grounds), while operations at the other places were carried on by Mr. Wainwright and Mr. Mackay. In continuation of his work of 1888 on the same site Professor Petrie has unearthed from the cemetery at Haward a large number

of Roman portraits of the greatest interest, dating from A.D. 100—250. Not more than one per cent. of the mummies buried at Haward had portraits, so that this branch of the undertaking business seems to have been limited to the more well-to-do class. The custom appears to have been, not to bury the mummies with the portraits, but to place them in the colonnade around the atrium of the private dwellings, until such time that the mummy cases fell into disrepair or a generation succeeded in whom the portraits awakened no sentimental or family interest, and then they were relegated in groups to a pit in the burial grounds. Notwithstanding the character of this custom, the portraits possess considerable artistic quality. They carry the conviction of individuality and likeness, and they are carefully painted. They are in a wonderful state of preservation, and altogether provide an interesting commentary on Roman painting of the time. In addition to the portraits the exhibition includes some examples of gilt cartonnage heads from mummies of earlier date, and some specimens of elaborate mummy wrapping; in one case the folds are thirteen layers deep, in rhombic pattern, in blue, red, white, and gold. In other cases, the mummy cloths, which have been unfolded, are of considerable decorative interest. There are a large number of smaller objects, such as scarabs, beads, gold rings, imitation gems of coloured glass, toys, and so on, as well as objects of domestic service of ware and other materials. Decorative slabs, inscriptions of various dates, and pieces of sculpture (including a limestone head of life size with the eyes filled with white glass) go to form one of the most interesting exhibitions which the School has provided of late years.

The Institute Medal of the Institute Gold Medal.

The award of the Gold Medal of the Institute year by year with unfailing regularity appears to assume that there will be an equally unfailing supply of recipients of outstanding merit, of real distinction, to maintain the traditions of a roll on of which are inscribed such names as Viollet-le-duc, Charles Garnier, Cockerell, and Barry. But Nature unfortunately cannot always be relied upon to accommodate her inflexible laws to those of the Institute, and to produce the man of distinction with the regularity required. Such an honour as this loses its value if it becomes a matter of routine, and is looked upon as one which, in the ordinary course of promotion, should crown a successful but blameless career. While the Institute continues to keep a watchful eye over the whole field of foreign architecture, archaeology, and letters there is hope that—as in the case of Dr. Wilhelm Dörpfeld—the necessary man of distinction will be discovered. When we consider how small a proportion of the civilised inhabitants of the globe are so fortunate as to dwell in these diminutive islands we realise how exceptionally gifted we must have been to supply forty-three out of a total of sixty-three distinguished recipients of the medal; unless we are to presume that it has sometimes been awarded more as an encouragement than as a reward. Should

there be any sign in the future of the failure of the home supply of men of distinction the Institute might perhaps reconsider their present method of awarding the medal by a system of rotation.



ANNUAL DINNER.

The annual dinner of the Royal Institute of British Architects was held at the Fishmongers' Hall, Adelaide-place, London Bridge, on Tuesday, when a large and distinguished number of architects and guests assembled. The President, Mr. Leonard Stokes, presided, and there were present amongst others:—

Mr. John G. Abraham	Mrs. Hornblower
Mr. John W. Abraham	Mr. Edgar Horne, M.P.
Mrs. John W. Abraham	Mr. Gerald Horsley
Mr. Maurice B. Adams	Mr. George Hubbard, F.S.A.
Sir Lawrence Alma-Tadema, O.M., R.A.	Mrs. Hubbard
Mr. L. A. Asherley	Mr. John Hudson
Joncs, K.C., M.P.	Mrs. Hudson
Mr. Maxwell Ayrton	Mr. John Hunt
Mr. F. G. Baker	Mrs. Hunt
Sir Thomas Barlow, Bart., K.C.V.O.	The Very Rev. Professor Inge, D.D.
Mr. Douglas C. T. Bartley	Mr. T. E. Lidiard James
Mr. Walter C. Beutles	Mr. W. Goscombe John, R.A.
Mr. G. E. Bond	Mrs. Goscombe John
Mr. C. W. Bowles	Mr. Alderman Sir Charles Johnston
Sir Thomas Brook, K.C.B., R.A.	Mr. W. G. Keith
Sir Henry Buckingham	Mr. J. P. Lassen
Mr. John J. Burnet, A.R.S.A.	Sir Charles Lawson-Witterwonge, Bart.
Sir Edward H. Busk, M.A.	Mr. Sydney E. Letia
Mr. C. MacArthur	Mr. W. J. H. Leverton
Mr. J. Dixon Butler	Sir James Linton, P.R.I.
Sir Henry T. Butlin, Bart.	The Right Hon. the Lord Mayor of London
Mr. Henry C. Charlewood	Mr. Edwin L. Lutyens
Mr. Christian Christensen	Mr. Ian MacAlister, Secretary, R.I.B.A.
Mr. Edgar F. Church	Mrs. Ian MacAlister
Mr. Harold E. Church	Mr. J. Y. MacAlister
Mr. H. Chatefield Clarke	Mr. Fred W. Marks
Mr. Max Clarke	Mr. R. W. May
Mr. T. Costigan	Mr. Stanley J. May
Mr. S. Forrest Cowell	Mr. H. A. Miers, F.R.S.
Mr. J. D. Crace	Mr. Alfred Moor-Radford
Mrs. Crace	Mr. Philip Morrell, M.P.
Mr. Richard Creed	Sir Henry Morris, Bart.
Mr. Richard Creed, jun.	Mr. John Murray
Miss Creed	Mr. Fred W. Marks
Mr. T. Harrison Dakin	Mr. E. Turner Powell
Dr. W. Morrison Davies	Sir Edward Poynter, Bart., P.R.A.
Mr. T. Raffles Davison	Mr. Andrew N. Prentice
Mr. Frank Dicksee	Mr. Richard M. Roe
Lady Emerson	Mrs. Roe
Mr. Rudolf Dircks	Mr. P. P. Rowell
Mr. J. W. Domoney	Mr. Joseph Sawyer
Sir William Emerson	The Right Hon. the Lord Saye and Sele
Mr. C. W. English	Mr. W. H. Seth-Smith
Mr. Frederic R. Farrow	Mr. Herbert Shepherd
Mr. W. Fleming	Sir Frank Short, R.A.
Mr. William Flockhart	Mr. John W. Simpson
Mr. Frank Fox	Sir John Slater
Mr. Percival M. Fraser	Mrs. Slater
Sir Ernest George, A.R.A.	Mr. Marion H. Spielmans
Mr. James S. Gibson	Mr. Leonard Stokes
Mrs. Gibson	Mrs. Leonard Stokes
Mr. G. Bird Godson	Mr. Basil M. Sullivan
Sir Laurence Gomme, F.S.A.	Mr. J. Sylvester Sullivan
Mr. Edward Greenop	Mr. F. Swanzy
Mrs. Edward Greenop	Mr. C. Tanner
Mr. Stanley Hamp	Mrs. W. H. Harrison
Mr. Henry T. Hars	Mrs. W. A. Hawes
Mr. G. Lovell Harrison	Sir Charles Henry, Bart., M.P.
Mrs. G. Lovell Harrison	Mr. Lewis Hind
Mr. W. H. Harrison	Miss Florence Hobson
Mrs. W. H. Harrison	Mr. James S. Holliday
Mr. W. A. Hawes	Mr. George Hornblower
Sir Charles Henry, Bart., M.P.	
Mr. Lewis Hind	
Miss Florence Hobson	
Mr. James S. Holliday	
Mr. George Hornblower	

His Grace the Lord Archbishop of Westminster
 Mr. Thomas B. Whinney
 Mr. A. G. White
 Mr. Edward White
 Mr. J. G. White
 Mr. W. Henry White
 Mrs. W. Henry White
 Mrs. Clyde Young

The loyal toasts having been proposed by the President and honoured,

Mr. H. A. Miers, F.R.S.,

Principal of the University of London, in proposing the toast of "Architecture and the Sister Arts," said he assumed that he had been called upon to propose the toast because he knew nothing about architecture—of the practice or purpose of architecture—or of the sister arts. Most people would wish to be artists even if they had not been born with the taste or desire, and he could say that from his earliest days he had taken an interest in architecture, and one of his earliest escapades was, after reading Parker's Glossary, to run away from school with a comrade to study the architecture of Ilfley Church. He could claim that the tender influences of the art had been acutely felt by him in his later life, for no one who had spent five years under the engrossing influence of Elton, three years at Oxford as a student, and thirteen years afterwards as a Professor, without realising what an important part architecture plays and must play in the education of one whose early life is passed in contact with some of its most beautiful examples. The traditions and inspiration of both Oxford and Cambridge were largely due to the fact that they possessed these beautiful old buildings. There was a passage in the autobiography of John Stuart Mill where he explains how, when a boy, living amid sordid surroundings, with nothing to inspire him in the buildings in which he lived, great was the effect upon him of a visit to the Bentham at Ford Abbey, among historic and romantic surroundings; and, he wrote, these fine old buildings gave him a freer existence. Coming from Oxford to London, he (the speaker) had felt not so much the inspiring influence of architecture as its deplorable absence. He called to mind the visit some time ago of a German professor, who was sent to report on the buildings in England which seemed to represent an idea, which were the expression of a dream—some historical fact or faith which stood for something to the people. Coming from Oxford to London he found this great difference—whereas in Oxford there were buildings which stood for ideas and tradition, he was ashamed, in coming to London, to find that the University city which had no buildings that it could call its University, no central hall or residence; and if London could ever, with the help of some generous benefactor, and with the assistance of some great sculptor and painter, erect a fine work of architecture which would stand for the academic idea—be the visible expression of the University—then they would have performed a great service to London. Only once had he met a London cabman who professed to know where the University of London was, and that man said, "It is somewhere in Hoxton, sir, or is it Holloway?" There was, it seemed, some confusion in the cabman's mind between the University and the Union. If that was so, it was because not only was there no University building in London, but because architecture had run riot, and had produced buildings intended for unions which could be mistaken for Universities. The attempt was being made in one part of London, owing to the enterprising of Professor Geddes, to give Crosby Hall something like an academic surroundings, and something in the nature of University character. Until he came into the building that evening he did not know what were the sister arts, but he had little doubt that sculpture was one. In coming to London he had been impressed, again, with the want of alliance between architecture and sculpture—the sort of alliance that impressed the mind of those who study the ancient arts or visited Greece and saw what that alliance meant in the days of the best Greek art. The ordinary traveller who visited the sculpture galleries of Europe or the ruins of the fine buildings of Greece or Rome, failed to realise

what an important part sculpture played in those days—in the beauty and meaning that it conferred upon those buildings. Those who visited museums and saw sculpture torn from its surroundings and wrongly restored did not always understand the important part it played in the buildings. He hoped that this association in the toast of the two arts of sculpture and architecture meant that we realise the need of a close union between the two. Those who visited the Continent and went to Dresden, for instance, and saw a headless statue there, and then went to Bologna and saw a bust labelled "Head of a Youth," failed to realise that together they made up the Athena Lemnia that once stood on the Acropolis. Many travellers missed the meaning of this association because the sculpture and architecture were not brought together. London was the only great city of the world which did not possess an adequate collection of casts from the antique. At Munich, Berlin, Copenhagen, and elsewhere were fine collections, but no so in London, though a beginning was being made, he was glad to say. As to painting, at the present moment there was an exhibition at the University of London which took one back to the beginnings of painting; he meant the extraordinary collection brought back from Egypt by Professor Flinders Petrie. He did not know what other arts were to be associated in this toast; perhaps the art of town planning, which now figured so largely in the public mind, could be included. The English were not to be regarded as an artistic nation, but the interest in town planning indicated a desire for artistic architecture to make our towns a systematic development of artistic buildings rather than a collection of structures thrown together in an haphazard way, as most of them were at the present time. We were endeavouring now to take steps to further architectural education in the University of London by combining what were now two small and scarcely adequate schools of architecture in the hope that we might make of them one large and strong school in which, he trusted, they would not only have the help of the Institute, but of the whole profession of architects. He hoped, before long, to be able to say that they were beginning to teach properly the subject of sculpture at the University of London. The toast was "Architecture and the Sister Arts"—the sister arts being the Three Graces that accompanied architecture throughout the world, or, from another point of view, the Three Fates which determined the careers of many of those assembled at that dinner.

Professor A. Beresford Pite, in responding for "Architecture," said that Professor Reginald Blomfield had designated architecture as the Mistress Art, and in his absence he would make no apology for the Academic use of the expression. He accepted with gratitude the compliment paid to them by the Principal of the University of London proposing the toast. It could not fail to be noticed by any keen observer that in the basis of a sound and completely organic system of architecture the great arts of painting and sculpture lived, moved, and had their being. We were living in an age of a high degree of specialisation of all forms of thought and action; painting had specialised in itself, and had come in to decorate frames; and sculpture had left the historic position it formerly occupied in the pediment and the frieze and was now isolated in various other ways in buildings. In the proper subordination of these arts to the Mistress Architecture they had their proper sphere. In the family of the arts—their proper application in the external and internal decoration of buildings which was necessary for their life and existence. In this proper subordination to the Mistress Art, something was done to restore the arts to that proper equilibrium which the proposer of the toast referred to when speaking of the great buildings for the University of London which he hoped to see erected one day. The Principal thought our buildings did not express artistic tradition, but we had artistic tradition as great as any artistic nation. There was a larger and deeper interest in the beauty of our cities at large than some of us were quite conscious of, and as an Institute of Architects they had a right to claim attention. Speaking in the presence of the Lord Mayor of London, he congratulated him on presiding over the

destinies of one of the most beautiful cities in the world. Within the area governed by the Lord Mayor and the distinguished Chairman of the London County Council were the Palaces of Greenwich, Somerset House, Waterloo and London Bridges, to say nothing of St. Paul's Cathedral, a crown of Renaissance building such as no other city possessed. What city was there in France or Germany which had such a collection of mediæval structures as the Tower of London, Westminster Hall, St. Bartholomew, Smithfield, the Temple Church, Southwark Cathedral, and, last of all, Westminster Abbey? Architecture in London was well served in the past. It was difficult to speak of the future. They were in the presence of those who were making the present we live in. Having alluded to the recent remarkable Town Planning Conference arranged by the R.I.B.A., the Professor said that the gathering together of men to consider the adequate treatment of buildings and their sanitary state and effect was a movement of the greatest importance, and he would suggest to the Principal of the University that town planning was architecture in its largest idea and most universal aspect. It was beautiful and touching to find that Parliament had recently conferred on the Corporation the honour of opening up and of exhibiting to the other side of the river and the world that lay beyond a view of St. Paul's Cathedral which would be unrivalled. He congratulated the Corporation on having secured the assistance of the three distinguished members of the Institute, in whose character and ability they had every confidence in regard to the new bridge, but the question was too large to be left only to them; it affected the dignity of the whole City and their appreciation of the greatest monument of the architectural art we possessed as a nation. It was a question which concerned all who valued this great wonder of architectural art. They possessed in the site upon Ludgate-hill and the river at its foot a situation which placed London in the position of beauty which was well worth their interest and demanded their greatest attention. They might hope that it would be successfully dealt with. He was not sanguine enough to believe that the solution was quite so near as they should like. It was complicated with many questions. It was complicated with the question of the safety of the dome; it was complicated with a number of intimate financial questions of which he must not venture to speak. But whatever the difficulties, whatever the responsibility might be, he was sure they would back the Corporation and support them in any scheme which was sufficiently large to do justice to St. Paul's Cathedral and to Sir Christopher Wren.

Sir E. J. Poynter, Bart., P.R.A., responded for "Painting," and said they had done him the honour of calling upon him to reply for "Painting." He felt some difficulty in approaching a subject so vast, in view of the very brief limits which he should impose upon himself; for, short of a studied lecture, there was no way of dealing adequately with a topic so complicated and so questionable in its aspects. Nor did he know exactly how he should best return thanks for "Painting" as an abstract proposition. If the toast was intended as an expression of their kind wish for the prosperity of the art from a commercial point of view, he felt some regret at not being able to summon the ghost of his great predecessor, Sir Joshua, or one of his contemporaries to reply to it, for in the picture market they were now experiencing such a success as his (the speaker's) own contemporaries might well look upon with envy; nevertheless, for their good wishes, so far as they extended in this direction, he thanked them most heartily, not without a pious hope that they might be realised. As for that other success, the "succès d'estime," the success which, though less substantial, was no less a source of pride and encouragement, he might truly say that the English School had of late years gained it in a remarkable degree. In all the international exhibitions that had been held in the last twelve or fourteen years the English painters had, to say the least of it, shown themselves second to none, and notably at the present Exhibition at Rome, where, by common consent, the English section was acclaimed as the most distinguished feature of the Exhibition, and he ventured to say that

the English school of painters, if they would keep their own individuality and cultivate that love of beauty which had been its distinguishing characteristic from the days of Reynolds, Constable, and Turner, and others—he ventured to affirm that they had nothing to fear in any competition for honours in the world. But he had not forgotten that this toast, as well as that of "Sculpture," was associated with that of "Architecture," as was only right on an occasion when painting and sculpture were the guests of the distinguished Institute which was so hospitably entertaining them; nor did he forget that painting took its highest form and fulfilled its noblest function when used for the decoration of great works of architecture. It was the first use to which painting was put, and he might say that the majority of the greatest works of painting that the world had seen were produced for such a purpose, adding a lustre to ecclesiastical and public buildings and private palaces which frequently outshone the edifices which they adorned. When he mentioned the works of Michelangelo and Raphael in the Vatican, the paintings of Giotto in the Arena Chapel, of Oragna and Ghirlandajo in the Sala Terrena, of Pinturicchio in the Library at Siena, he merely touched at random on a few amongst the hundreds of examples which the combination of painting with architecture presented to them in Italy alone, and where, if the building would suffer by the loss of the paintings, it might with equal justice be said that the painter would never have risen to such heights but for the architecture, whose beauty he was called upon to enhance, for the treatment of great spaces in noble architectural surroundings led to the highest form of expression which the art of painting could achieve. He had frequently dwelt in this sense on the importance of giving opportunities of this kind to our painters. The mere fact that an artist felt himself to be working for something that should permanently appeal to the public, that he was doing something of national importance, was a stimulus to him to put forth his best efforts, to bring his intellectual and artistic faculties to their highest use. Such efforts were the best antidote to that loose method of work from nature which too often formed the staple of our exhibitions; and it was sincerely to be hoped, in the interests of art, that public spirit would not stop at the completion of the corridor in the House of Lords, which had proved such a success, but carry further the scheme of decoration originally proposed for the Houses of Parliament. But the association of painting with architecture had another field of the highest usefulness, in which architecture became the handmaid of the painter. He was hardly over-stating the case when he said that from the time of Giotto to that of Tintoretto there was not a painter in Italy who had not a thorough knowledge of architecture and did not understand its value as an adjunct to his compositions; indeed, everywhere, up to the middle of the XVIIIth century, there was hardly a figure painter who could not enrich his subjects with the splendour of architectural backgrounds and accessories. Those in this country who were capable of so doing at present might almost be counted on the fingers of both hands. This lamentable ignorance of a great and closely allied art was a serious handicap, both by the limit which it imposed on painters in the choice and treatment of their subjects, and by the still more lamentable failure to design correctly when they attempted anything of the kind. It was his hope that in the Royal Academy Schools a course of architecture might before long be imposed on our painter students, instead of its being left, as at present, to the student to take it up as a voluntary exercise.

Sir Charles Lawes-Wittewronge, President of the Royal Society of Sculptors, responded for Sculpture, and was understood to say that the alliance between the arts was much more of a pleasure to be associated in than to talk about. The Society he was connected with was quite a young Society, but they had been immediately recognised by the Board of Trade, and it became their duty to organise various exhibitions which had taken place, and especially the British Exhibition at Rome. The use of sculpture to decorate our buildings reacted in favour

of the school of sculptors, and he hoped that our sculptors in the future would be able to hold their own, and perhaps even surpass the contemporary schools of the world.

Sir Aston Webb, C.B., C.V.O., R.A.,

When proposed the toast of "The Houses of Parliament." He said it was usual on occasions of the kind to say that Parliament had little to do with matters of art, but he thought that in the last two or three years they had had more to do with questions of art than before. The House of Lords had dealt with several important art matters, including the decoration of their own building, and the House of Commons had just given an opinion on the subject. Another speaker then decided that art should be considered in such an important matter as throwing a bridge over the Thames at St. Paul's. He had been told by an M.P. that what the result of the debate on the question would be in the House of Commons no one knew until it was declared, and said that he thought it was the first time that the House of Commons had expressed a direct opinion on a question of art and being left entirely free to express their views. He thought that result was largely due to the persistence of the President. Another speaker said that the House of Commons had devoted a good deal of time to and which had interested architects very largely was as to housing and town planning. A gentleman asked him quite recently if a Bill on the subject had been passed, and if it would do any good and would enable him to pull down insanitary cottages, as in his parish there were a large number of cottages, the bedrooms of which had no windows, the only openings being 9 by 9 in the walls, filled up with a solid bit of glass. He (the speaker) replied that it was a splendid measure, and the more it was used the more that would be realised. It was on these lines that the Houses of Parliament could assist them in their art work. They all knew that the Houses of Parliament could not provide a design, nor the Cabinet Council, or the Parliamentary Committee, or even their own Institute as an Institute; but what all these public bodies could do, and he was glad to say, were doing, was to see that when great public schemes were brought forward that they were placed before those who could and would fill in the scheme for them. It was on the lines of the Housing and Town Planning Act that so much could be done by the Legislature towards the good of our art and the people. If it was true, as they knew it was, that

righteousness exalted a nation, it was also true that bright and happy homes and beautiful surroundings would increase and multiply the happiness and brightness of the people of the country.

The Right Hon. Lord Saye and Sele having humorously responded for the House of Lords, and Mr. Edgar Horne, M.P., President of the Surveyors' Institution, for the House of Commons.

Mr. Paul Waterhouse

proposed the toast of "The Guests." In the course of his remarks he referred to the admirable manner in which the Lord Mayor was carrying out the duties of his office, and with the toast he coupled the names of Sir Vesey Strong and Dr. Bourne; the Lord Archbishop of Westminster. In speaking of the Church which Dr. Bourne represented, he said there were many architects who had worked for that Church in this country, but two names stood out in his (the speaker's) mind, and they were the last names he mentioned. The first was the name of Henry Pugin and the great period of fifty years. Pugin at the beginning and the architect of the Westminster Cathedral at the end. Both of those men showed in a conspicuous way how a man's art could be wrapped up in his faith. Of Bentley it might almost be said that it was part of his fame that he was so little known. One could hardly imagine a man who worked so industriously and so successfully, who when his great work was done was almost as little known as the great builders of the Middle Ages. In concluding his remarks Mr. Waterhouse said they owed the success of the day to the permission of the Fishmongers' Company that they were allowed to dine in that stately hall, and all would wish to express their thanks to the Company for this privilege.

The Right Hon. the Lord Mayor,

in reply, said it was a great pleasure to meet the members of the profession, and to come into the citadel of architecture and learn from them.

His Grace the Lord Archbishop of ^{the} West-
minster

also replied, and said that he came into contact with the profession on the ecclesiastical side, and they had shown great magnanimity in inviting him to be present, because, dealing with a large and congested and not over-rich population, the greater part of his work consisted in trying to set up ecclesiastical buildings of the simplest possible character at the least possible expense, and he thought that his first interview with the many architects with whom he might claim friendship was the most

pleasurable of a series; he entertained great hopes and his friends entertained great hopes of possible things they might accomplish, and then later on he had the unpleasant task of trying to reconcile artistic conceptions with a very exiguous purse. He could not forget that he was continually living in the shadow of what was regarded, he believed, as the very masterpiece of modern English art, and he could not but feel that account, if at times he had to curb artistic aspirations, he could not be ungrateful to members of the profession, because of what we all owe to the late Mr. Bentley. It was the Christian Church which had offered to architects in every age the highest opportunities for exercising their skill, and they on their part had done more than anyone else to add majesty and dignity to the Divine worship. He was sure that the Church may have had every possible success in every department of their art, that they would never fail to find in religion the fullest and highest source of their artistic conceptions.

The proceedings then terminated.

ALTERATIONS AND ADDITIONS TO NORMAN COURT, SALISBURY.

THE plan reproduced shows the new portion in the black and the old hatched. The house and the estate, which belonged to the Baring family, was purchased some few years ago by Mr. Washington Singer for over 200,000*l*.

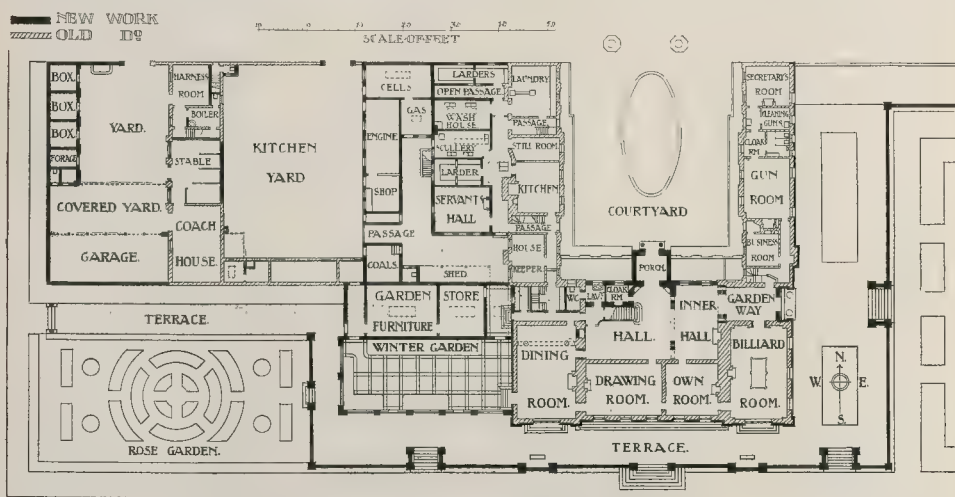
Both the interior and exterior have been entirely remodelled, and new terraces, winter garden, kitchen wing, stables, and garage have been added.

The works have been in progress for two and a half years, and the contract for the main block has been carried out by Messrs. Trollope & Colls, and other works by the estate workmen, from the designs of Mr. Sydney Tugwell, A.R.I.B.A., Mr. R. Manser acting as clerk of works.

GENERAL NEWS.

Professional Announcements.

Messrs. Hubbard & Moore announce that their partnership terminated on June 30, and that both Mr. Hubbard and Mr. Moore will continue to practise from their present address. 112, Fenchurch-street, E.C. - Messrs. Huskins & Mayell, architects and surveyors, have removed their offices from Bank-chambers, 76a, Westbourne-grove, W., to 124, Westbourne-grove, W., after being over thirty years at the first-named address.



Alterations to Norman Court, Salisbury. (*See also page 1.*)
Mr. Sydney Tugwell, A.R.I.B.A., Architect.

Oxford Encenia.

In the course of presentations for the honorary degree of D.C.L. at the Encenia on June 28, Dr. Warren, Professor of Poetry and President of Magdalen, introduced Mr. T. G. Jackson, R.A. (whom the Vice-Chancellor greeted with the salutation, "Artifex Oxoniensissime"), with the words, "Oxoniam antiquae repostor Oxoniae autem novae creator," and the Right Hon. Lewis Harcourt, formerly First Commissioner of Works, with the words, "Factaque sunt orbis quae prius urbis erant." The honorary degree of D.Sc. was also conferred upon Sir William Thiselton Dyer, formerly Director of Kew Gardens.

Oxford Union Society.

The new wing of the Oxford Union Society's buildings, which contains a large library, with writing, smoking, and billiard rooms facing the garden, and steward's house, was opened recently. The block was designed by the late W. E. Mills, A.R.I.B.A., since whose death in April last year the work has been completed by Mr. John Thorpe. The garden front is after the domestic Tudor style, and is built of brick with Clipsham stone dressings, and roofing of dark green Westmorland slate, and ridge and finials of stone.

A Congress of Hygiene.

The third International Congress for Sanitary Dwellings will be held in Dresden from October 2 to October 7. The first Congress was held in Paris in 1904, and the second in Geneva in 1906. The work of the next Congress has been divided into nine sections, namely:—

1. Town planning (building, forms of country settlement, garden cities, width of streets, height of building).
 2. Construction of buildings (planning, distribution of space, building material, foundations, basement, kitchens, lavatories, floors and ceilings, staircases, lifts and roofs).
 3. Internal arrangements (lighting, heating, ventilation, furnishing).
 4. Sanitation (cleaning, removal of refuse, disinfection).
 5. Town dwelling-houses.
 6. Country dwelling-houses.
 7. School buildings, boarding-schools, prisons, hotels, lodging houses, hospitals, convalescent homes, baths, churches, theatres, and other public buildings.
 8. Workrooms and workshops, means of communication and transit (railways, tramways, ships, vehicles, etc.).
 9. Legislation, executive, statistics, etc.
- Full particulars may be obtained from Dr. Hopf, the Kongresskanzlei des III. Internationalen Kongresses für Wohnungshygiene, Dresden, neues Rathaus, Zimmer 156.

Stoke Workhouse.

Under the direction of Messrs. Edwards & Shaw, consulting engineers, of Birmingham,

a water-softening plant and a centralised hot-water supply system have been installed in the Stoke Union Workhouse by the Brightside Foundry and Engineering Company. The water supply is obtained from three different sources, viz.:—The Potteries Waterworks Company, and two wells, each supply being of quite a different character to the others, but all containing a considerable quantity of incrustating material. To overcome the difficulty involved it was arranged to remove the scale-forming elements, and to centralise and operate the whole of the heating and domestic hot-water supply from one central source with a view to effecting the maximum economy in fuel and attendance.

Oxford University.

The new buildings for Oriol and Brasenose Colleges are nearly completed. The former, opposite to St. Mary's, have been erected in pursuance of the will of the late Mr. Cecil Rhodes, from designs by Mr. Basil Champneys, which preserve as much as was possible of the old quadrangle of St. Mary's Hall, originally the parsonage house granted in 1326 by Edward II. to his almoner, Adam de Brome, as endowment for the college. Nearly opposite, in High street, stand Mr. T. G. Jackson's latest additions to Brasenose College, which complete his work begun for the college some years ago—see our illustrations of June 4, 1887; August 4, 1888; and June 7, 1890—and form the new and larger quadrangle, which has supplanted the old tenements in Amsterdam-court (named

**Bungalow, Shanghai.**

Messrs. Scott, Christie, & Johnson, Architects.

after the ancient Amsterdam or Broadgates Hall), together with some timber and plaster buildings that served for undergraduates' rooms, and, as we understand, the site of the brew-house or brasinium of King Alfred's palace. This, the latest and south, side of the new buildings faces High-street, and stands between Lincoln College and Dean Aldrich's early XVIIIth-century church of All Saints, and the church of St. Mary the Virgin. The façade is after the "Collegiate Gothic" style with modified XVth-century Perpendicular details. The block is planned for the Principal's house and rooms for fellows and undergraduates, with a muniment-room in the upper story of the gate-tower, which is recessed from the main frontage line.

BUNGALOW AT SHANGHAI.

MR. W. SCOTT, A.R.I.B.A., MR. J. CHRISTIE, and MR. G. A. JOHNSON, A.R.I.B.A., have lately designed and carried out this work for Messrs. H. & T. Veitch. The house is designed on the bungalow type, the materials used being local bricks rendered with rough-cast, red-brick plinth, Singapore hardwood timber, Ningoo stone dressings, and red Marseilles tiles. The external woodwork was treated with Solignum, and the rough-cast tinted a cream colour. Some of the windows have lead lights, which were made in England.

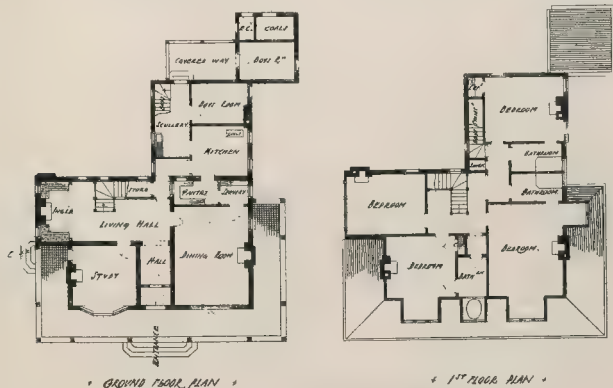
BOOKS.

The English Staircase. By WALTER H. GODFREY. With 65 colotype plates and other illustrations. (Batsford. 18s.)

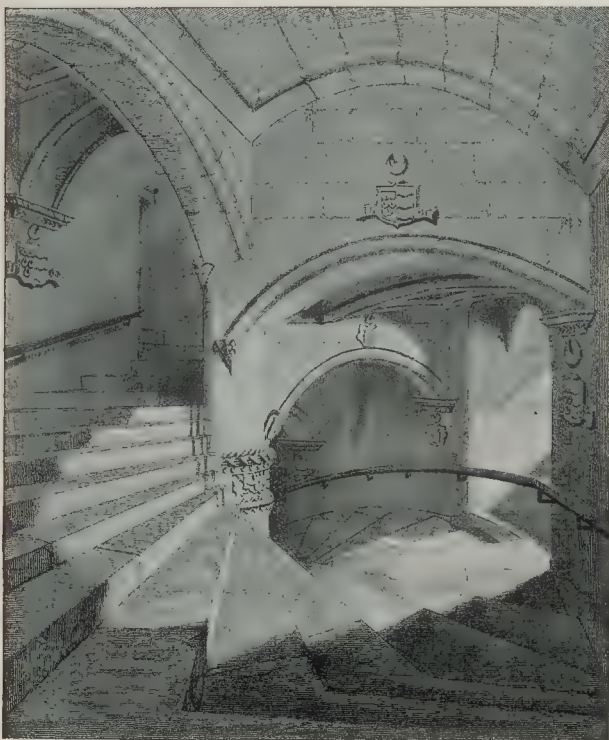
THIS is a valuable contribution towards the history of architectural design in England. The author modestly disclaims any attempt at an exhaustive treatise; but the series of illustrations, comprising sixty-three plates and fifty-six illustrations in the text, is arranged chronologically, and of itself gives an excellent idea of the development of design in the important feature with which it deals.

So important must always have been the means of getting from one floor to another, that the tale which every young architect's relations inflict upon him of that other young architect, who designed and built a house, and only discovered when it was approaching completion that he had forgotten the staircase—this hoary legend can only be a myth, without even the slender foundation upon which most myths rest.

It is rather curious that until the last quarter of the XVth century, although substantial dwelling-places of more than one story had been erected during 400 years, the staircase in universal use had always been the simple unadorned corkscrew or newel stair, supplemented at rare intervals by straight flights of steps equally devoid of ornament. It is true that in a few cases the head of the tube in which the winding stairs were contained was vaulted with some

**Bungalow, Shanghai.**

Messrs. Scott, Christie, & Johnson, Architects.



Fyvie Castle.

(From W. H. Godfrey's "The English Staircase." Batsford.)

attention to design; it is also true that, in some cases, a continuous handrail was worked in the stone wall. But these seem to have been the only efforts made by English designers towards ornamenting their staircases. French examples, on the other hand, especially in the early XVIIth century, abound in delightful touches, and many of them are monumental in character. It is interesting to see that the only specimens given by Mr. Godfrey which at all approach to the French treatment, are in Scotland; and they serve to emphasise the connexion of that country with France in the matter of architectural design. There is, perhaps, one exception figured in the book to the monotonous use of the spiral stairs in the Gothic period. This is shown on Plate II., and is at Downholland Hall, near Ormskirk. No date is suggested, but the balustrade is of solid oak pierced with cusped openings, and may be of the XVth century. It is a remarkable example.

The change in design which took place in Elizabeth's reign was quite startling. Hitherto stairs in circular turrets had of necessity been all "winders"—landings were very few. Now, they were all straight, and landings were introduced at frequent intervals, very few flights having more than eight or ten steps—"winders" were eschewed. Stone (or brick) had been the usual material employed, now it was wood. The construction was simple but substantial; the supports were obvious; the heaviness of the construction was lightened by a mass of ornament. In turning over Mr. Godfrey's plates, it would seem that the tendency of staircase design was to simplify the ornament and to reduce the heaviness; the obvious points of support gradually disappeared, and the contrast is remarkable between the early examples, with their huge newels, their stout handrails, and their massive strings, and the late examples, with neither newels nor string, and only an insubstantial handrail, representing, indeed, as Mr. Godfrey says, merely an "upward gliding plane."

There is a good selection of details, and the text is simple and to the point. Mr. Godfrey is accurate and painstaking (in spite of an apparent slip in regarding the new staircase at Rushon as being old), and he not only affords an insight into the development of staircase design, but gives interesting bits of detail of all periods. The get-up of the book is worthy of its contents.

Examination Work in Building Construction.

By Professor HENRY ADAMS, M.Inst.C.E., M.I.Mech.E., F.R.San.I., M.S.A., etc. (Published by the Author. 1911. Pp. 54. 2s. 6d. net.)

PROFESSOR ADAMS is already known to our readers as the author of several standard treatises on structural subjects. The present book is one which should be found of considerable value to students preparing for examinations kindred to those of the Society of Architects. It comprises a collection of the examination papers prepared by the author for the Society mentioned, together with an answer to every question and accompanying diagrams reproduced to half the size required in the examinations. The subject-matter covers a very wide range of information, and a fully-detailed index makes the book additionally useful.

Woodwork, Carpentry, and Joinery. By THOS. C. SIMMONDS, Hon.A.R.C.A. Second Edition, revised. (London: George Allen & Sons. Pp. 66. 1s.)

INTENDED as an elementary course of instruction in compliance with the requirements of the Board of Education and the City and Guilds of London Institute, this excellent introduction to the subject has been found so far useful as to demand the issue of a second edition. The treatment is particularly rudimentary, and, while suited to the special purpose for which it is written, the book is one we do not recommend to others than absolute beginners.

A Specification for Reinforced Concrete Works. By A. ALBAN H. SCOTT and PERCIVAL M. FRASER. (London: Witherby & Co. 1911. Pp. 29. 3s. 6d. net.)

THE desirability of a standard specification for works of the kind denoted above has already been recognised by several firms of reinforced concrete specialists, but until publication of the volume here noticed nothing of the kind has been written in this country by independent professional men. There are several clauses in this specification which are distinctly open to discussion, particularly from the standpoint of the contractor. The book will probably serve a useful purpose by encouraging the issue of a standard specification by the Concrete Institute after all interests involved have been duly taken into account, and purely technical points have been duly considered by a committee of architects, engineers, and specialists in reinforced concrete.

Motion Study. By FRANK B. GILBRETH, M.Am.Soc.M.E. (London: Constable & Co., Ltd. 1911. Pp. 116. 4s. 6d. net.)

AT first sight this book appears to be a treatise on the study of mechanical movements, but it is in reality nothing of the kind as the term is commonly understood. The object of the author is rather to invite the study of motions made by workmen and others in the performance of their daily tasks, and to show how the amount of work accomplished may be greatly increased without increased labour simply by proper attention to working conditions, the proper subdivision of labour, and scientific management. The book is highly suggestive, and is one which we have pleasure in bringing before the notice of building contractors, feeling sure that they will find in it many hints of specially valuable character.

Motors, Secondary Batteries, Measuring Instruments, and Switch-gear. By S. KENNETH BROADFOOT, A.M.Inst.E.E. (London: Constable & Co., Ltd. 1911. Pp. 96. 1s. net.)

THIS is one of a series of electrical installation manuals, the scope of which is generally shown by its title. The book is conveniently arranged in numbered paragraphs, each with a clearly-printed title, which, with the assistance of the index, should make the manual very useful for the purposes of reference. All information is given in concise terms, and the book is one which may be commended to those requiring guidance on the subjects discussed.

A Practical Guide in the Preparation of Town Planning Schemes. By E. G. BENTLEY, LL.B., and S. POINTON TAYLOR, A.R.B.A. (London: George Philip & Son, Ltd. Price 5s. net.)

THE book aims at providing a practical work for the guidance of the members and officers of the various local authorities concerned in the preparation of town-planning schemes.

Considering the somewhat complicated nature of the regulations of the Local Government Board, we have no doubt that a carefully-compiled treatise, which endeavours to put the subject before the public in a comprehensive and intelligible manner, and which reviews the various subjects which may be dealt with in the town-planning scheme in the order in which they will require consideration, will meet with a cordial welcome.

As Mr. Raymond Unwin points out in a foreword, the collaboration of a lawyer and an architect to produce a book on this subject is particularly appropriate, and we think the result of this collaboration will be found most useful to all concerned.

The book contains appendices giving the text of the Act; the Procedure Regulations; Extracts from the Hampstead Garden Suburb Act, 1906; Extracts from the Liverpool Corporation (Streets and Buildings) Act, 1906, etc. Also specimen forms of notices and advertisements, and a model set of coloured plans, in a separate thumb case, prepared in accordance with the regulations, which, we think, should prove most valuable.

But this is not merely a book of reference. Many of the points, such as, for example, the preservation of objects of natural beauty or antiquarian interest, the comparative values

of straight and sinuous roads, the placing of trees and grass margins, and the treatment of forecourts and gardens are referred to in a suggestive and helpful manner.

The criticisms and suggestions for the future improvement of this book which the authors invite will come more aptly from those who have had the opportunity to test its usefulness in an entirely new form of procedure. We will content ourselves with entreating the authors not to continue the "pursuit of oneness as a unit" or of "oneness as a whole" until they have exhausted the resources of the language in the pursuit of a better expression.

Steel Bar and Plate Tables. By EDWARD READ. (London: E. & F. N. Spon, Ltd. Sheet of 4 pp. 1s. net.)

THE tables on this folding sheet give the weight of L, T, and flat bars, plates, nuts, bolt heads, round and square bars, chains, corrugated sheets, sheet and hoop iron, lead pipes, and wrought-iron tubes. The arrangement is convenient, and the tables will doubtless be found useful to those having frequent occasion to deal with weights of the kind included.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held in the County Hall, Spring-gardens, S.W., on Tuesday, Mr. E. Whit, Chairman, presiding.

Loans.—It was recommended by the Finance Committee, and it was agreed, that a loan of £3,790, should be made to the Islington Borough Council for purchase of premises at Hornsey for homes for children.

Theatres, etc.—Drawings have been approved by the Theatre and Music-Halls Committee as follows:—

Adelphi Theatre—Enlargement and rearrangement of urinal apartment for the stalls.

Prince of Wales Theatre—Ventilation of rooms in basement.

Royal Adelaide Galleries, Strand—Various internal alterations.

Imperial Hall, Grove-vale, East Dulwich—Rearrangement of exit from small hall.

London Opera House—Addition of six private boxes on the stalls level.

London Palladium—Duct work for proposed ventilation at the London Palladium.

New Gallery Restaurant—Provision of a waiting-room and alterations in the basement.

Whitechapel Public Baths—Cinematograph box.

Chelsea Palace of Varieties—It is proposed to enlarge the first circle at this hall for the purpose of rearranging the seating in the auditorium with other small alterations.

Cinematograph Theatre.—The same Committee also reported that it was proposed to erect a cinematograph theatre on a site at the rear of 23, High-street, Putney.

Repaving.—In a Report of the Highways Committee it was stated that the wood-paving of the bridge carrying Chalk Farm-road over the Regent's Canal was worn out, and that the British Cork Asphalt, Ltd., have offered to repave the bridge at 10s. per yard super., and also to maintain the paving for five years at 6d. per yard super. per year.

Crossness Pumping-Station.—The Main Drainage Committee recommended, and it was agreed, that tenders should be invited for lithographing the drawings and printing the specification and quantities in connexion with this pumping-station, which is to be enlarged.

School Accommodation.—The Education Committee reported that it was desirable to provide 1,240 additional school places in Islington, and that negotiations for the acquisition of a site for the erection of a school are in progress.

It was also stated by the same Committee that it was proposed to erect a school for about 100 physically defective children in Elthorne-road, Islington, N.

Fire-Station.—A new fire-station is to be erected at St. John's Wood, the estimated cost of which is £3,000. The Fire Brigade Committee reported that a suitable site had been purchased for £3,000, for that purpose.

Tottenham Fields Estate.—The Housing of the Working Classes Committee reported that in view of the progress made in the erection of cottages on section C of this estate, it was desirable to complete the carriageways and footways of the roads at an estimated cost of about £370.

Victoria-embankment-gardens.—Owing to the condition of the York-water-gate at these gardens, the Parks and Open Spaces Committee reported that the stonework was to be treated with baryta water, which would render the stone resistant to the attacks of the atmosphere.

CORRESPONDENCE.

Manchester Library and Art Gallery Competition.

SIR,—Certain passages in the letter of protest against the award in the Manchester competition which appeared in your columns last week seem to call for criticism, and I shall be glad if you can devote a small space to the following remarks.

In regard to the objection raised to the premiation of certain competitors, on the ground that their plans exceeded the limit of area imposed by the conditions, does Mr. Willoughby advise the rejection of a brilliant design because the projection of a base-course was exaggerated on one-sixteenth-inch scale plans? For in a building of this size such an error might well account for an area of 50 yds. The writer goes on to say that an additional area of 50 yds. would admit of a "row of handsome columns" along the front. No doubt it would; but surely the suggestion that a building provided with a "row of handsome columns" is, *ipso facto*, more beautiful than another not so endowed is one of the grossest fallacies of the amateur. Doubtless the public thinks so, for the public loves a column—particularly if it be handsome—just as an Englishman loves a lord—probably from similar motives. But an architect is not a tradesman who must supply his public with what he thinks it wants, but an artist whose aim it is to create beauty, which will supply his public with what he knows it needs.

I cannot conclude without reference to Mr. Willoughby's protest on the ground that the assessor has never superintended the erection of any building of a similar character to the proposed Library and Art Gallery.

Was not the fact that the writer himself competed, in full knowledge of the assessor's name, a tacit acceptance of his ability to adjudicate? If Mr. Willoughby had been one of the selected ten, is it likely that he would have raised any objection on this score, or have hinted, be it never so delicately, that the assessor was quite unfitted for the onerous duty which he had undertaken to perform?

MAURICE LYON.

A National Memorial to King Edward VII.

SIR,—Now that the memorial to the late Queen Victoria has at last been opened in the Mall we should seriously think of erecting a grand and fitting memorial to our late great King, Edward VII. the Peacemaker, in the Metropolis of this vast empire. There has been a good deal of agitation lately about building a new bridge across the Thames near St. Paul's Cathedral. In my humble opinion this scheme of a memorial to King Edward VII. in the City of London would be most suitably carried out by erecting a fine bridge and grand avenue from south to north on the western side of St. Paul's Cathedral, the proposed avenue cutting through a grand square to be named St. Paul's-square, on the western side of St. Paul's, this square to be treated in a similar manner as that of St. Peter's, in Rome; our much-lamented late King, Edward VII. The grand square would open up the view to St. Paul's Cathedral, which is at present most cramped up and built in, a large equestrian statue of Edward VII. facing the west in front of the Cathedral. In Paris, Berlin, Vienna, and other great continental cities they perpetuate the memory of their great by erecting grand and lasting memorials. As I said before, we must not lose this opportunity, but carry out the scheme of a memorial to our late King Edward VII. the Peacemaker, not by the erection of a statue in some street, square, or park, but such as suggested above. Every Englishman, both at home and all over the world, would gladly subscribe to this grand national scheme. HENRY H. B. SANG, Architecte-Decorateur (Paris)

Bradford Royal Infirmary.

SIR,—I have seen Mr. Pite's design in your current issue, and have read your interesting criticism upon it with pleasure. One does not, as a rule, criticise the work

of men who have beaten one, but in this instance I hope you will find space for these remarks of mine, which may be of interest.

With regard to the spacing of wards, one wonders whether the omission of the sanitary annexes from the end is caused by the closeness of spacing, or suggested by it, or whether they have been so placed for convenience of working. The sun balconies are thus left unprotected from east and west winds, and in our climate will be somewhat exposed.

In Mr. Pite's planning of the administrative building has not the struggle to avoid the internal court (really immaterial in such a low building) seriously affected the general compactness and convenient working of this very important department?

The Nurses' Home has an east and west axis, so that many of the 120 bedrooms will have a north aspect. This applies also to the Servants' Home.

The placing of the maternity ward necessitates patients, entering as they do by the out-patient building, "running the gauntlet" of the entire length of the main connecting corridor. The operating-rooms, being of two stories, render the lighting from the top (a definite "instruction," by the way) of the lower ones an impossibility.

I suppose there are few competitors who do not think their own scheme far finer than the winning one, and that their non-success is, of course, due to the predilections of the assessor. To all such I would say, "In future study those predilections, and better luck next time." NEVER SAY DIE.

Questions for Builders.

SIR,—From time to time various grievances have been ventilated in your columns, but I venture to assert comparatively few that directly concern the builder.

It is not that these grievances do not exist, as the very keen competition prevailing, together with the damaging effect of current legislation and the tyranny of the authorities, have made the business of the builder very onerous.

It is to be regretted that the Master Builders' Association do not by the force of its co-operation put sufficient pressure on those concerned to relieve the growing evils affecting its members.

I am certain a list of these evils could be given that would keep the Master Builders' Association busy for a long time endeavouring to secure that reform which is daily becoming more necessary if the builder is to continue his existence.

I may add that while I am not a member of the Master Builders' Association, yet I would gladly join them if they defended the interests of their members one-quarter as much as some of the operative unions protect their members.

At the moment I will content myself to quoting one item, viz.:

That the City of Westminster Council invariably demand anything from five to ten times the ultimate cost of reinstatement after hoardings and gantries, and that they hold large balances considerably longer than they as servants of the public are entitled to do.

It is not so much a question of loss of interest on this money, but I am of the opinion that, working on their own experience of the costs of reinstatements, the payments demanded could be more in proportion to the cost, and balances paid out within, say, a week or two of completion.

This is but one of many grievances that should be remedied, and one that will readily be recognised by fellow-sufferers in the business, and I should very much like to see a continuation of this correspondence that would bring to light the worst of the grievances, in the hope that they may be remedied. BUILDER'S MANAGER.

INTERCOMMUNICATION COLUMN.

Cassell's Points.

SIR,—I am seeking information about Cassell's paints. If any of your readers would be good enough to give me their experience of them, also which is the best, and where it can be got, I should be greatly obliged. ARCHITECT.

EDITORIAL SUMMARY.

The leading article is entitled "Fragmentary Old Painted Glass: Its Due Treatment," and it includes several illustrations bearing on the subject.

Notes, p. 4, contain: "Bedford College for Women"; "Rembrandt's Homes in Amsterdam"; "Exhibition of Egyptian Antiquities"; "St. Paul's Bridge"; "The Institute Gold Medal"; "A Ministry of Fine Art"; "Our New Stamps"; "The R.I.B.A. Address to the King."

The annual dinner of the Royal Institute of British Architects was held on Tuesday in Fishmongers' Hall, Adelaide-place, London Bridge, in the presence of the Lord Mayor of London, the President of the Institute and Mrs. Stokes, and a large gathering of ladies and gentlemen. A report appears on p. 6.

Book Notices (p. 9) include: "The English Staircase"; "A Practical Guide in the Preparation of Town Planning Schemes"; "A Specification for Reinforced Concrete Works"; "Motion Study"; "Examination Work in Building Construction," etc.

Correspondence (p. 11) includes letters on: "Manchester Library and Art Gallery Competition"; "Questions for Builders"; "A National Memorial to King Edward VII."; "Bradford Royal Infirmary."

The Monthly Review of Civic Design (p. 13) contains: "St. Paul's Bridge" (with illustrations); "Town Planning Review" (illustrated); "The City Beautiful"; and Notes.

The Building Trade Section (p. 19) includes: "Recent Derrick Tower Construction" (with illustrations); "Builders' Tools in the Middle Ages"; "Projected New Buildings in the Provinces"; "Applications under the 1904 Building Acts," etc.

Legal Column (p. 23) includes: "The London Building Act"; "The Housing and Town Planning Act."

Our Law Reports (p. 23) include: "Eastbourne Building Dispute"; "Lorden & Son v. The King."

MEETINGS.

SATURDAY, JULY 8.

The Architectural Association.—Visit to HUL Hall, near Epping, and to the Church of St. John, Epping. Train leaves Fenchurch-street 2.12 p.m.

MONDAY, JULY 10.

Incorporate Guild of Works' Association (Carpenters' Hall, London-west).—Monthly meeting. 7 p.m.

TUESDAY, JULY 11.

Guild of Architects' Assistants.—Visit to the British Museum Extension. 6.30 p.m.

COMPETITION NEWS.

Australian Federal Capital.

Some particulars were given in the *Builder*, June 23 (p. 789), as regards this competition. We have now received from the offices of the High Commissioner for Australia, 72, Victoria-street, S.W., full details, which arrived from Melbourne by the last mail. The documents furnished us are voluminous, and comprise a map of preliminary contour survey of country about Canberra (scale 20 chains = 1 in.); two copies of map of contour survey of site of Federal capital at Canberra (scale 400 ft. = 1 in.), contours (5 ft. vertical intervals); topographical map of Federal territory of about 900 sq. miles (scale approximately 6,000 ft. = 1 in.); map of the State of New South Wales, and map of the south-eastern portion of the said State; geological map of the city site, and two reports by the Government geologist of New South Wales; map showing rainfall and temperature statistics of the site for the Federal capital and surrounding districts; report by the Commonwealth meteorologist on the climate of the Yass-Canberra district; reproductions of two landscape sketches taken from points within the city site.

The particulars and conditions for guidance of competitors state that the Commonwealth undertakes to remunerate the authenticated author or authors of the designs that may be placed respectively first, second, and third in order of merit at the final adjudication as follows:—For the design placed first, premium 1,750*l.*; for the design placed second, 750*l.*;

for the design placed third, 500*l.* Geometrical plans and sections are to be prepared to scales based on the British standards of measurement, and the general map of city design shall be drawn on contour map of the survey of site of Federal capital at Canberra, which is one of the documents mentioned above. No other restriction is placed on the method or character of the drawings submitted. It is desirable that at least suggested outlines of the more important public and other buildings, parks, gardens, bridges, and principal constructional features be indicated in so far as they illustrate the general design. The drawings are to be mounted on linen and on stretchers, and it is desired that these shall not greatly exceed the dimensions of the contour map already referred to. The designs must be delivered to the Secretary of the Department of Home Affairs, Melbourne, on or before January 31, 1912. The designs delivered and admitted to competition will be submitted to a board consisting of an engineer, an architect, and a licensed surveyor, appointed by the Governor in Council for investigation and report to the Minister of the Department of Home Affairs. The Minister will adjudicate upon the designs, and his adjudication will be final and without appeal. The decision of the Minister will be announced in Melbourne within two months of the date of the receipt of the designs or as soon thereafter as is possible.

Immediately after the announcement of adjudication, it is intended to publicly exhibit in Melbourne for a reasonable period all designs admitted to competition. Should the competitors desire, on their own behalf, to arrange a second exhibition in London or elsewhere, the Minister will, if requested, supply as exhibits reproductions from the originals of the premiated designs only. The premiated designs shall become the property of the Government for its unrestricted use either in whole or part. Any claim for further remuneration by one or by all of the authors or their assignors or legal representatives will not under any circumstance be recognised. The Government, in consideration of the undertaking to pay the premiums mentioned, becomes entitled to call for, and to be furnished with, additional information, including such elucidating plans, sketches, and reports as it may be advised by the Board are requisite. Such information need not necessarily be in the nature of working drawings or specifications, but similar in character to the original designs themselves, and such as may not have been practicable to fully develop in the first instance without such further information. On the application by the Minister for such information, the competitor shall forward the same so that it may be received within four months from the date he should have received the application in the ordinary course of the post, but such application shall be made, if at all, within two months of adjudication upon the original designs. The premiums mentioned are to cover the cost of supplying the additional information, and the Minister will not recognise any claim for payment beyond these amounts. Of the several premiums, 75 per cent. will be paid on adjudication, and the remaining 25 per cent. on the receipt of such additional information as may have been asked for, if any. Should,

however, the Board consider the designs as submitted to be sufficient, the full premiums will be paid on the final adjudication. No unsuccessful competitor shall have any claim for payment in respect of any apparent adoption of his proposals or any part of them as disclosed by any designs he may deliver. The Government, by its own officers, will give effect to the adopted design. A model of the city site on a horizontal scale of 400 ft. to 1 in., with a vertical scale of about 100 ft. to 1 in., has been prepared, and a cast of the model can be inspected at the offices of the High Commissioner, 72, Victoria-street, S.W.

We propose to deal with the scheme at length in a future issue.

ILLUSTRATIONS.

"Burdocks," Fairford, Gloucestershire.



HIS house, which is nearing completion, is situated about a mile from Fairford, in Gloucestershire, and is built with rubble stone and Bath stone dressings and cornice, etc., the roof being covered with stone slates.

The entrance lodges and stables, which were completed some short time ago, are built of similar materials.

The contractors for these and for the shell of the house are Messrs. Yells Bros., of Fairford. Mr. E. Guy Dawber is the architect.

Design for a Country House.

THIS house is designed to give a south-east aspect to the garden front. The exterior walling is to be in local sandstone and the roof-covering to be hand-made sand-faced plain tiles, the woodwork to be in oak. The hall is to be panelled to its full height, and the floor to be brick-on-edge laid to pattern and beeswaxed; windows to be fitted with gun-metal casements. The design is by Mr. C. Castelow, architect, of Runcundy, Leeds.

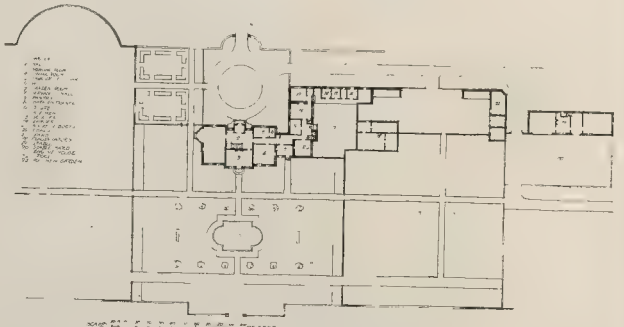
Owen Jones Prize Drawings.

ONE of our plates this week is devoted to some drawings by Mr. A. W. Bellis, who was awarded the Owen Jones Prize of the Royal Institute of British Architects last January. Other drawings by Mr. Bellis were reproduced in our issue of April 7. Professor C. H. Reilly, in his address to students on January 30, said:—"The Owen Jones Studentship has produced two good sets of drawings by Mr. Bellis and Mr. Oakley. Perhaps Mr. Bellis, with his power of drawing the figure, is the stronger man. His drawing of the Pompeian decoration from the Castle of St. Angelo is particularly good. His colour, though, is not so good as his draughtsmanship, for some of his drawings suggest the reproductions in Mr. Owen Jones's book rather than the thing itself."

BOOKS RECEIVED.

A SHORT HISTORY OF BOND STREET. By H. B. Wheatley, F.S.A. (London: The Fine Art Society. 2s.)

THE EXHIBITION AT THE FRENCH GALLERY OF SELECTED WORKS BY JOHANNES BOSCH AND WILLIAM MARIS. (London: Messrs. Wallis & Son.)



"Burstocks," Fairford, Gloucestershire.

Mr. E. Guy Dawber, F.R.I.B.A., Architect.

THE BUILDER, JULY 7, 1911.

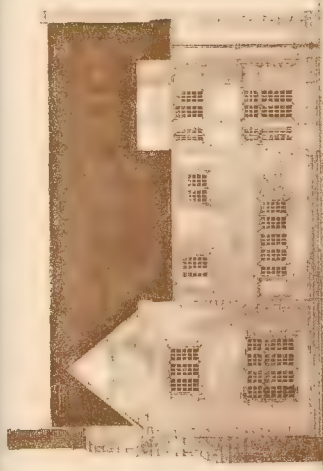




"BURDOCKS," FAIRFORD, GLOUCESTERS



R. E. GUY DAWBER, F.R.I.B.A., ARCHITECT.



SOUTH-EAST ELEVATION



NORTH-EAST ELEVATION



GROUND FLOOR PLAN

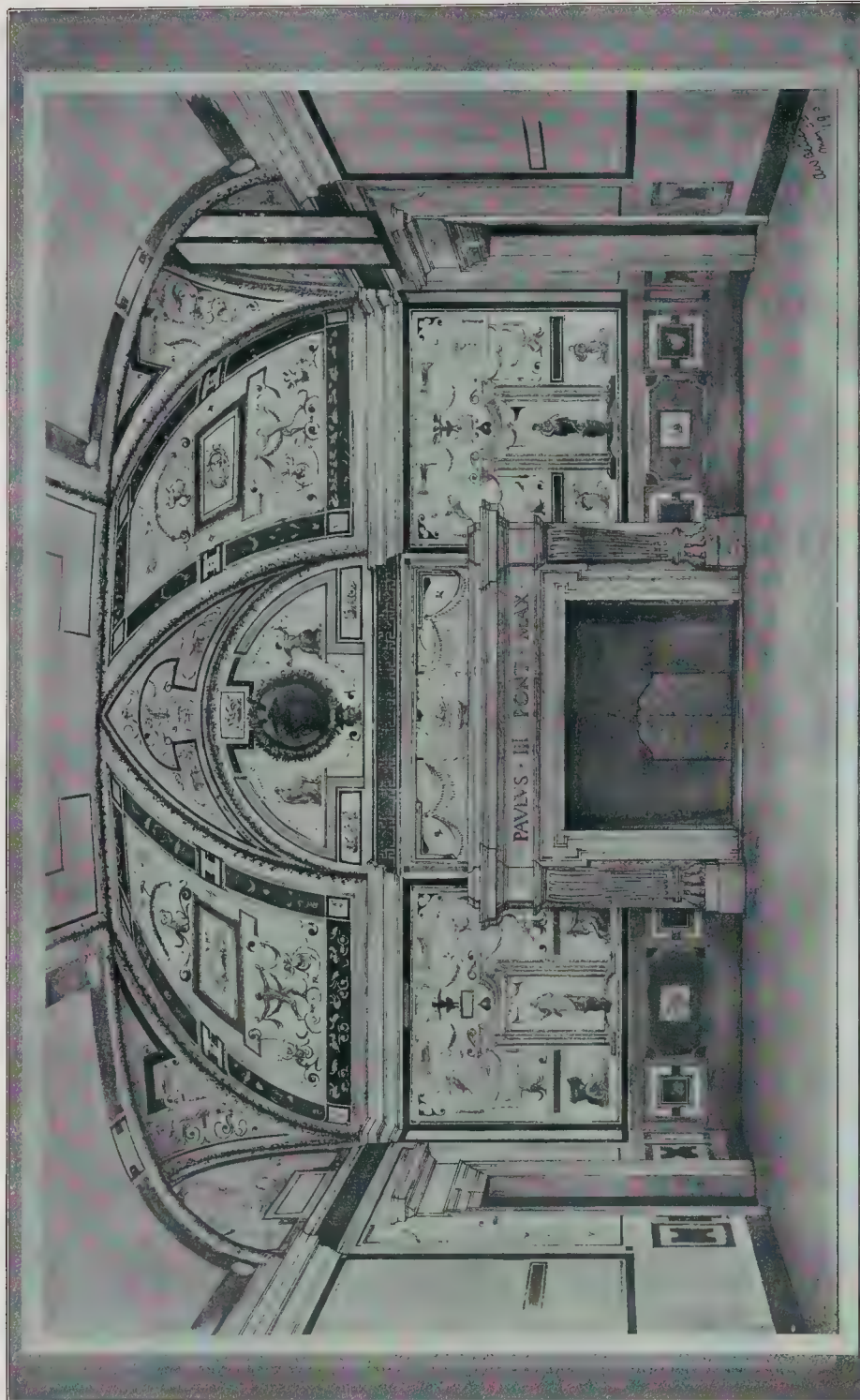


FIRST FLOOR PLAN



DESIGN FOR A COUNTRY HOUSE BY MR C CASTLEW

THE BUILDER, JULY 7, 1911.



Measured Drawing of the end of DINING ROOM of Pope Paul III 1534-49, from

Side Elevation. Scale, half-inch to one ft.

Plan, looking down. Scale, half-inch to one ft.

MEASURED DRAWING BY MR. A. W. BELLIS.



ROYAL ARMS, ST. JOHN'S CHURCH, LEEDS.—DRAWING BY MR. A. W. BELLIS.

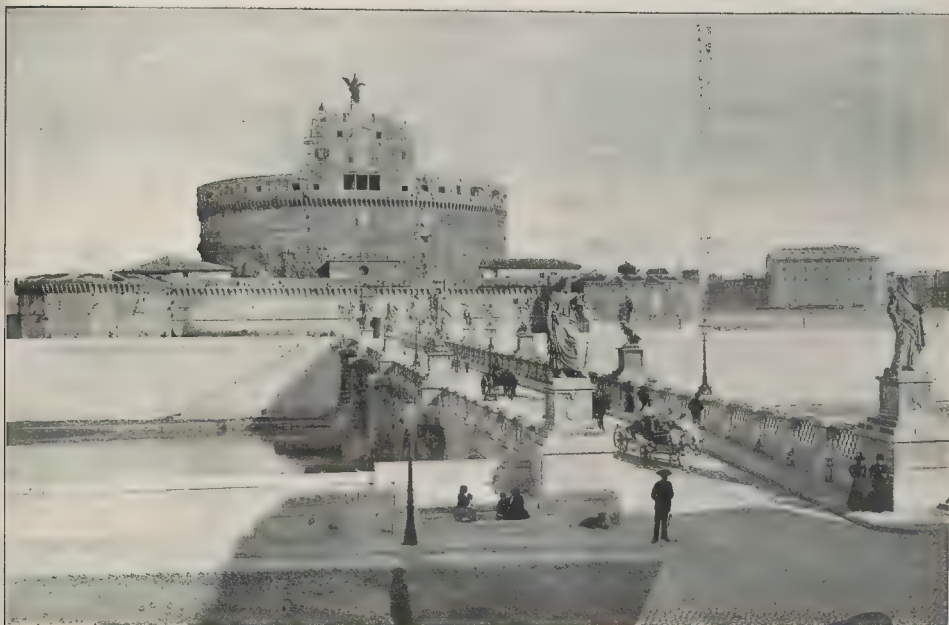
R.I.B.A. Owen Jones Prize



SAVILLE TOMB, METHLEY CHURCH, NEAR LEEDS.—DRAWING BY MR. A. W. BELLIS.

Spencer & Co., Ltd., Printers, 48 & 49, Fleet Street, E.C.

MONTHLY REVIEW · of · CIVIC DESIGN.



[Photo, by Alinari.]

Bridge of St. Angelo, Rome: Showing Axial Approach.

ST. PAUL'S BRIDGE.

EXACTLY a twelvemonth ago we dealt with the Corporation scheme for St. Paul's Bridge in an illustrated article, in which we endeavoured to consider the question from different points of view, and to appreciate and do full justice to that of the promoters.

Since then the unexpected has happened, and we can only record our profound gratitude that instead of bewailing another, and in some respects perhaps the finest, of London's lost opportunities, we are able to congratulate ourselves that all is not yet lost, but that there is still before us a chance to redeem our character and to rise to the height of a magnificent and unique opportunity.

The scheme has been referred back for further consideration from the architectural point of view. In our previous article we pointed out that many other aspects of the question had not been properly thought out. We hope and believe that no further attempt will be made to rush this scheme through with undue haste to suit Parliamentary or other convenience. Time is required, not only to study the scheme in itself, but also in its relation to the future development of London as a whole.

Before any definite solution of the problem is decided on it might be as well to try to discover what the problem really is, and whether this bridge is the proper remedy for the traffic defects, which all acknowledge. We are inclined to think that the problem has not been rightly stated.

The reasons for building this bridge are two in number. First, that better communication is required from this part of the City to the south side of the river, and, secondly, that better through traffic facilities are needed between the north and the south of London. The bridge is to serve both needs

and so to kill two birds with one stone. Is this idea the right one?

For the defects of local traffic intercommunication the bridge no doubt is an adequate remedy; but is it, and can it be a remedy for through traffic defects? This, we think, is open to doubt, and we suggest that from the point of view of either the through traffic itself, or of the Cathedral, this is not the place for a through traffic route, and that the attempt to create one here is a fundamentally wrong idea which is at the root of all the trouble.

To take the traffic first. We have already pointed out the disastrous results of pouring the north and south traffic across Cannon-street and Cheapside, so there is no need to dwell again on the obvious fact that these proposals will increase and not decrease the congestions at the crossings. Let us rather consider the question of levels and the natural formation of the ground.

The river taking a wide, sweeping curve, the inside bank—the south bank—is, as usual, the lower. The north bank is the higher, and the highest point is crowned by St. Paul's Cathedral.

The problem is to take the through traffic from the low south bank to the higher ground behind the high north bank by the easiest gradient and the most uninterrupted route. A short distance to the west of St. Paul's the valley of the Fleet River breaks through the high bank and provides a gently rising gradient from the embankment level to the higher ground of the north of London, so avoiding the necessity of a steep pull up to the top of the bank.

We naturally ask—Why not use it? What advantage is there in lifting the through traffic up a steep gradient over this high bank when it could be taken through the valley

and so by an almost imperceptible gradient to the heights beyond? Why select the very highest point of all, and one crowned by a Cathedral? Even if the Cathedral were not there, the proposal would need more explanation than seems to be forthcoming.

We have also to ask ourselves whether, if constructed, the through traffic would ever use this higher road and toil up this extra 30 ft. or more in preference to going by the lower road over Blackfriars Bridge.

Traffic must be coaxed, not driven. You may take a horse to the water, and you may create passageways which you call through traffic routes, but unless they are the lines of least resistance the through traffic will not use them. Considering the unnecessary height to be negotiated in order to cross the viaduct over Queen Victoria-street, and the certainty of being held up both at Cannon-street and at Cheapside, it seems more than probable that the through traffic will prefer the lower road, even if it is a longer way round; for to vehicular traffic distance is a minor consideration compared with ease of gradient and freedom from cross traffic, and to the motor traffic of the future it will hardly count at all.

Now consider the question from the point of view of the Cathedral. Here we have a national monument of the first importance; by no means merely the Cathedral of the City which the City may claim to be allowed to treat as it pleases.

But even then every monumental building, whether national or not, requires a position, surroundings, and approaches in accordance with its character and the purpose for which it is erected. These can be determined by a study of the requirements necessary to enable it to fulfil its functions. In the first place, St. Paul's is a church, a sacred national



From a Survey of the North Bank of the Thames, in connexion with a Design for a Proposed Quay from Charing Cross to Blackfriars, by Lieut.-Colonel French. 1825.

temple, and it demands an environment and approaches in harmony with that essential, but apparently forgotten, fact.

Apart from the light and air and freedom from the danger of fire which all monuments require, a Cathedral in which national ceremonial services are solemnised with stately ritual requires a space around it of sufficient size and architectural treatment to permit of adequate magnificence of processional approach and ceremonial grouping in its precincts. It needs avenues to radiate its exalted influence to all parts of the City, and to afford direct approach to worshippers from all directions; but it is not a railway station or a meat market that we should deliberately concentrate through traffic upon the temple enclosure, the cathedral close, and turn what should be the somewhat cloistral or devotional aspect of the precincts into a seething maelstrom of traffic. The idea is offensive.

That St. Paul's Churchyard has been encroached upon and desecrated by former generations and is already overcrowded with traffic is a defect, not a virtue, of the plan of the City, the aim should be to lessen the traffic, not to increase it. As St. Paul's is on a hill, through traffic will avoid it, if possible.

At present the traffic only climbs Ludgate-hill from necessity, not from choice. No doubt it will some day be diverted on either side of the Cathedral by easier gradients.

The fact, then, that this particular spot is not only the highest and most inaccessible that could be found, but that it is also crowned by a sacred national temple whose precincts should be respected, suggests that this is positively the very last place in the whole City of London which should be chosen for such a purpose as a through traffic route.

If there is any truth in this point of view, St. Paul's Bridge should be treated as a local traffic route relieving Blackfriars Bridge, giving direct access from the south side to the City, and forming a radiating avenue and approach to St. Paul's. Blackfriars Bridge and Farringdon-street should be developed as the main through traffic artery or boulevard from the north to the south of London, for, apart from its easy gradient, it lies in a valley and can economically be bridged over with viaducts carrying the east and west traffic, as at Holborn Viaduct. This affords a clear run through from north to south, with possible provision for trams, while the absence of important buildings or historical

monuments permits it being widened and developed in a way that would not be possible where St. Paul's, St. Augustine's, St. Vedast's, St. Anne and St. Agnes, and the General Post Office all bar the way and have to be considered.

Should still further through traffic facilities be required, the regrading of Southwark Bridge will probably provide them at a position where it is possible to obtain another main northern artery.

If, then, the through traffic can be taken by another and better route, the last objection to the axial approach to St. Paul's Bridge is cleared away, as the trams can be taken through underground if desired with equal ease in either case. If the bridge can be regarded as a local traffic route it would naturally land as soon as possible in Queen Victoria-street, from which a fine rising approach would lead to St. Paul's, and the architectural problem would be considerably simplified.

This would lessen the expense by doing away with the viaduct over Queen Victoria-street, and would obviate the necessity for a Y-shaped or other unduly wide approach to the Cathedral. Such an approach seems open to the criticism of ignoring the natural slope of the ground and the direction of the main axis of the Cathedral. It creates a slope to its enclosure which is contrary to that direction, and permits this side approach to overpower the main one—which is, and must always be, by Ludgate-hill to the main entrance door.

The principal question left would be whether the axial approach and the bridge should be in the same straight line crossing the river on the skew, or whether the vista should change its direction at the change of levels in Queen Victoria-street and the bridge cross the river at right angles.

There is no doubt that the continuous straight vista over the bridge to the Cathedral is a most magnificent treatment, and that some sacrifice of convenience may well be made to obtain it, if it is a sacrifice of convenience only. But we must admit that the skew bridge has disadvantages both of convenience and appearance, though these perhaps look worse on paper than they would in reality. After all, it will, of course, depend a good deal on how it is done.

This appears to be the point that will need the most anxious consideration and the most careful weighing and balancing of the different conflicting interests and points of view involved.

Whatever is done, however, there seems to be no doubt that no scheme can be considered wholly satisfactory unless it takes into account the architectural treatment of the whole of the future surroundings and approaches to St. Paul's, and at the same time provides for the traffic east and west as well as north and south. As we have pointed out before, this scheme needs to be related to some general and comprehensive treatment of the whole of this district of London.



Map of Central Area of London,

Showing Blackfriars Bridge emphasised as the natural main through traffic route north and south, crossed by viaducts carrying the traffic going east and west, and St. Paul's Bridge regarded as a local traffic route landing in Queen Victoria-street.



Rochefort-sur-mer : Gate of the Prefecture.

"THE TOWN PLANNING REVIEW."

The first number of Volume II. of the *Town Planning Review* more than maintains the standard of excellence set up by Volume I. It opens with what is called a panorama of the amount of work which is entailed in the preparation of the first stages of a town-planning scheme under the regulations of the Act. With a view to giving reality to the article, an actual area in the peninsula of Wirral, in which the boroughs of Birkenhead and Wallasey are situated, has been selected, to which the

process is applied in detail, with the actual wording of the necessary notices, resolutions, letters, etc., and reproductions of the maps required. This should be of great service to all authorities contemplating the preparation of schemes, and, showing as it does that, dealt with in this way, the amount of labour and expense is not so great as was first imagined, it should afford some encouragement to proceed.

Professor Adshead contributes a valuable article on "Monumental Arches," profusely illustrated by most of the best examples from ancient Roman times to the present day, which is the first of a series to be

devoted to "The Decoration and Furnishing of the City." The writer discusses the purpose and the possibilities of the monumental arch, and "would like to see a revival of this finest of commemorative monuments."

"Southport; Some Suggestions for its Future Growth," by Mr. J. E. Jarratt, Town Clerk of Southport, illustrated with plans and views, deals with the requirements and growth of a seaside residential town in the centre of a great industrial community.

Mr. E. W. Marchant, D.Sc., has some interesting remarks on the effect on towns of the transmission of electrical energy, particularly in the direction of cleanliness.

In the third of a series of articles dealing with "Town Planning Schemes in America," the Editor contributes an account of the labours of the various societies and commissions that have devoted so much time and energy to the consideration of the improvement of Boston. As Boston is a comparatively old town on an irregular and diversified site its problems approximate more nearly to those of English cities than to those of the modern Western American towns. The article, therefore, should be of special interest to English town planners. It is fully illustrated by plans, views, and diagrams.

"The Grand Central Station of New York," by Mr. R. Anderson Pope, gives a good idea of the American method of dealing with the terminal station problem in a capital city.

An extremely interesting number is brought to a close with a review of current periodicals and a chronicle of passing events.

THE CITY BEAUTIFUL.

We take from the *Canadian Real Estate News* the following remarks, being part of a verbatim report of the American landscape architect, Mr. Olmsted, arising out of a visit to Montreal, when the principal matters discussed with the Metropolitan Parks Commission had to do with the selection of lands for parks and playgrounds, and with the location of boulevards and other lines of urban and suburban transportation:—

The main framework of any city plan is the transportation system, including in that term the public ways, both of local and of general importance, the street railways, the rapid transit railways, where such exist, the long-distance railways with their terminals, and the facilities for water-borne traffic. No matter how diverse or how independent may be the circumstances which determine and the authorities which control the several parts of such a system, the progress of the community and the convenience, economy, and general satisfaction with which its people can do their work and enjoy their lives, depend very largely upon the joint efficiency of these



Nevers : Porte de Paris.

diverse parts, considered as a single inter-related system for the movement of people and commodities.

When a place is small, both the length and the volume of such movements are so limited and so simple that a haphazard development of each part of the transportation system to meet the demands immediately pressing upon it gives rise to no serious inconvenience, but as the community grows the increase in the volume of the traffic streams, in the distances travelled and in the desirable speed of movement, enormously and indefinitely multiplies the burden placed upon the community by lack of economical correlation between the various means of transportation as well as by any deficiencies in each one of them.

Comprehensive Planning Necessary.

The location and width of the new streets which are daily extending the permanent framework of the city into new territory are now being fixed, in the main, by the local landowners. Their business is simply to market their land, and, so far as their limited control extends, to provide sufficient means of access to it to attract purchasers. It is not their business, and it is beyond their power, to provide for the main lines of transportation through other localities to give access to theirs; and no more is it their business to provide main thoroughfares through their own districts for the sole benefit of those beyond them, whose land will compete with theirs in the real estate market. It is nobody's business at present, and it ought to be made somebody's business to provide for the main channels of inter-communication.

This laying out of main transportation lines is not a thing to be done quickly and once for all, but a matter for painstaking and patient study and unremitting attention, beginning with the preparation of a general tentative plan and then proceeding gradually but persistently to execution, modifying the general plan from time to time, whenever it can be shown that a change, in view of all facts, really makes the plan as a whole better for the interests of the community, but never permitting the plan to be disregarded or set aside in execution. No such plan is of much value unless it has a permanent, active, responsible custodian, who will keep it up to date by improving it to meet conditions unforeseen at the time of its first preparation, and who will see that it is put into effect from time to time as circumstances permit. Such a custodian would be a permanent Metropolitan Commission, with a staff of engineers and designers constantly at work, on the one hand perfecting and extending the general plan and working up its details, and on the other gradually, a piece at a time, without haste or procrastination, bringing it into execution.

Rapid Transit Routes.

But whatever the best rapid transit routes may prove to be, these facts are tolerably clear about them:—First, that a paying rapid transit line cannot be built until after a large part of the district through which it is to run is pretty fully occupied—that is, until after most of the streets have been opened and built upon. Second, that the cost of installing a rapid transit line in a district already subdivided and built upon will depend mainly upon whether provision has been made in advance for such a line in the lay-out of the city, because in the absence of such provision it must either go under the streets, with all the drawbacks of subways, or encumber the streets most objectionably with an elevated structure, or cut its way through private building lots, all very costly operations, and apt to result in bad alignment at that. Third, that the question of how the city or any part of the city can have rapid transit, and how far and how fast the passengers can be carried for five cents will depend largely upon the cost of installing the lines. Fourth, that the speed, the range, and the economy of local passenger transportation is one of the most important factors making for comfortable and healthful homes for the mass of the people, and against the overcrowding of houses on the land and the exaction of excessive ground rents.

Surface Car Routes.

Of equal importance with the rapid transit lines properly so called, are the surface car routes, which will become the feeders of the

former, and which must be the main agency in extending the residential radius. While in the older part of the city the cars must generally occupy streets laid out before the invention of electric traction, there is every reason for making the strongest efforts to secure throughout the suburban area, where the street plan is still flexible, a system of thoroughfares calculated to give the quickest and most convenient routes for street cars, as well as direct lines and easy grades for teaming. These thoroughfares need ample width as well as good lines and grades. In a 60-ft. or 66-ft. street, unless the sidewalks are excessively and unreasonably curtailed, the roadway cannot be made wide enough for two vehicles to pass between the curb and the street cars. Therefore the main stream of slow-moving vehicles must perforce run upon the tracks.

If the traffic becomes heavy in such a street there is endless conflict, the drivers are inconvenienced by the cars, and the speed of the cars is seriously reduced. It takes a width of 48 ft. to 52 ft. between curbs to allow of two lines of vehicles between the street cars and the curbs, the former figure being cramped, and the latter distinctly preferable. No important street, therefore, that is likely to be occupied by car tracks should be given a less width than 80 ft. to 90 ft. on grounds of the baldest utility. A little additional width may allow the permanent maintenance of trees upon the sidewalks; but where new suburban land is being laid out a width of upwards of 120 ft. is very desirable on purely utilitarian grounds, because it permits the use of a special reservation for the electric cars by which means their speed can be considerably increased, and with these greater widths, trees and grass and other park-like features can be introduced to add to the amenity of the way. Such boulevards, from 120 ft. to 200 ft., or even more in width, are very generally to be found in progressive European cities, even those considerably smaller than Montreal, and they are becoming more and more numerous in America.

Main Thoroughfares and Local Streets.

It is very important in dealing with the subject of city planning to maintain very clearly the distinction between such main thoroughfares as we have been discussing and the local streets, of which the prime object is to give means of access to the lands and houses immediately abutting upon each, and in close-built districts to admit light and air to the buildings that line them. Nothing is to be gained by making such local streets any wider or longer or more direct or upon any flatter gradient than is absolutely needed to accomplish these purposes in a convenient and economical manner; and to require more than this, often means a needless waste of land, and of construction, cost, and maintenance charges which have to be paid for somehow, and in the end just add so much to the taxes and the rentals.

A very considerable degree of individual discretion in the lay-out of local streets ought to be permitted to the landowners, while, upon the other hand, no local or personal consideration whatever should prevent the laying out of the main thoroughfares on the lines and at the widths and with the grades that will make them the best possible transportation routes for the city as a whole.

General Considerations Affecting the Location of Playgrounds and Parks.

In any city closely covering a large area, well-distributed public playgrounds and neighbourhood parks become one of the urgent needs if the health and vigour of the people are to be maintained. And the most important classes to provide for are the children and the women of wage earning families. Most important because of their numbers, and of the direct influence of their health and vigour upon the efficiency of the coming generation; but most important also because they have less energy to seek out healthful recreation at a distance from their homes. Practically there are few women and children who will take the trouble habitually to walk more than a quarter of a mile in the city to a playground or local park for exercise or rest, and back to their homes again. For most a car fare is out of the question except for an occasional holiday excursion. This means that ideally there should be neighbourhood recreation centres, not more than a

quarter or at most half a mile from every home in the city. Considering the present deficiencies in Montreal that may sound like a remote ideal; but other cities are unmistakably advancing toward that ideal, and there is no logical halting-place till that is reached, although the progress toward it may be very slow in the older parts of the town.

Activities of Public Recreation Grounds.

The size, form, and character of public neighbourhood recreation grounds depend upon the functions to be performed by each. Some of the activities where they are well developed, as, for example, in Chicago, are these:—

1. The playing of little children in sand piles, and upon the lawn, and in a shallow wading pool, and in open shelters, under the watchful guidance of an attendant, who not only keeps them out of mischief and danger, but plays with them, tells them stories, and stimulates the healthy activity of their little minds and bodies. The mothers may come with their children and sit by them while they play, or may leave them in safety while at work. A plot but 100 ft. square may be of value for such use.

2. For the boys of larger growth, and also for the girls and women, the more active games and gymnastic exercises, with and without apparatus, in the open air when the weather permits, and under cover in the winter, always with the opportunity and inducement to wash and bathe, and sometimes with a swimming pool to boot. Sometimes space is found for the big field games, and regular athletic sports on a running track, sometimes for nothing that takes more space than basketball or fives.

3. For the older and less active people a few pleasant shaded walks and benches to stroll and sit upon, from which to see the youngsters play, and once or twice a week perhaps a band concert.

4. For the use of all a field-house, where the sanitary accommodations are kept to a standard of cleanliness and good order that sets a good example to the neighbourhood, where a reading branch of the public library is available, and in which one or more large rooms are at the disposal of the neighbourhood for lectures, entertainments, and dances; clean, healthy recreation given full play amid decent surroundings, instead of being driven to the saloon, dance-hall, and the like.

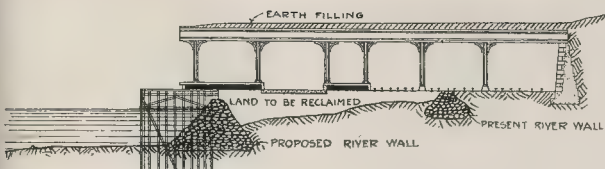
A full-fledged recreation centre is a large and elaborate affair, and a costly one to keep in operation, and until the taxpayers have satisfied themselves by tentative experiment that such things are worth their cost, a much more modest scale must be adopted; and there are such advantages in the possibility of gradually building up a group of related activities, that it is extremely desirable to secure rather good-sized tracts, 20 acres if possible, rather than split the same area into a large number of very small squares.

As to the total area to be secured, it is so seldom possible to get enough that there is little danger of overdoing the purchase of such local parks. There is a rather general consensus of opinion that about 5 per cent. of the total area devoted to local parks, playgrounds, and squares is a reasonable minimum standard at which to aim, and that more than 10 per cent. may be uneconomical.

Some of the most successful suburban real estate operators in the north-eastern United States have satisfied themselves, and are operating on the principle, that the dedication of land for local park purposes up to a reasonable amount, if so arranged as not to interfere with the lotting system, actually increases the net returns from the operation. On a plan which was drawn up by Messrs. Wood, Harmon, & Co. to illustrate the application of this principle, about 30 per cent. of the total area is devoted to streets (about the normal figure for New York City), and about 7½ per cent. to the park.

Considerations in Selection.

With the exception of certain park sites, which are more or less dictated by topographical considerations, the main consideration in selecting local park lands should be equitable distribution and cheapness. In the suburban and rural districts the presence of the old trees or other special features might have a considerable influence, but ordinarily such local parks must depend so largely upon artificial improvement that any slight natural



New York Riverside Extension.

advantages are easily counterbalanced by differences in the cost of the land. Most pressing is the acquisition of such parks in regions that are rapidly being built up, for the obvious reason that the enormous jump in the value of property which takes place through the erection of buildings upon previously vacant land is generally followed by a period of comparatively slow rise or even of decline in value as the buildings depreciate. Delay is apt to add but little to the cost in a region where buildings must be torn down in any case to make a park, whereas it adds enormously to the cost in regions at the growing margin. Out in the country beyond that margin, even though land can be obtained cheap, there is little reason for buying park lands except to preserve some special natural feature, such as a fine grove of trees, for future park uses, or to secure single tracts of unusual size or shape for special purposes.

The probable future increase in the value of outlying land is discounted in its present market value, and the generally optimistic tendency of the real estate speculator is apt to keep the market rates so high that interest on the cost and loss of taxes will in the long run more than counterbalance any saving the public can make by such speculative purchases.

In selecting lands in the more crowded parts of the city it is sometimes a helpful device to mark upon a map, by dots of an arbitrary size, representing a fixed number of people, the local distribution of population based on census returns, if obtainable by blocks or wards, or upon a school census, or voting lists, or other fair proportionate basis. With this as a guide the rest is largely a matter of bargain hunting, for which one of the important qualifications is to have cash in hand with which to do the bargaining.

RIVERSIDE EXTENSION SCHEME, NEW YORK.

In order to provide additional dock and traffic facilities on the Hudson River, the Commissioners of Docks and Parks, New York, propose to reclaim part of the foreshore, 200 ft. wide by $2\frac{1}{2}$ miles long, and to utilise the area, so placed at the disposal of the civic authorities, for the construction of quays, freight platforms, railway tracks, and a wide road, and to cover in the whole of these by a steel and concrete roof. Upon this covering will be laid earth of depth sufficient to provide for the growth of trees and shrubs to be planted after the site has been laid out as a public park. The general idea of the project is represented in the accompanying diagram.

At present the goods lines of the New York Central Railroad extend along the western shore of Manhattan Island, the operation of steam locomotives at street level being anything but pleasant, while the running of trains between Riverside Park and Drive and the Hudson is distinctly objectionable.

The new scheme provides for the construction of a stone embankment or wall at the average distance of 200 ft. beyond the present river wall, and on the filling deposited between the two structures will be provided railway lines, outside the existing tracks of the New York Central Railroad, a wide goods platform, a roadway for vans and other vehicles, a spacious platform for marine freight, and a quay equipped with two railway tracks. Light and ventilation will be provided for by numerous openings in the roof, and by the adoption of electric traction it is believed that the nuisance of noise and smoke which has long troubled residents in Riverside Drive will be considerably reduced, while the addition of a new park represents a noteworthy improvement.

KHARTOUM.

THE plan of Khartoum, lately rebuilt on general lines laid down by Lord Kitchener for military reasons, reminds us that as an Imperial race, with possessions in all parts of the earth, town planning has for us an unusually wide significance. At any moment we may be called upon to design towns under climatic and other conditions which are quite foreign to our own personal experience.

This suggests taking a wider view of the subject than can be derived from an exclusive attention to our own requirements.

Khartoum being laid out with streets of ample and perhaps unusual width—Victoria-avenue being 180 ft. wide, Khedive-avenue 150 ft., the main streets 120 ft., and the secondary ones 80 ft.—the question arises as to how far this is advisable in a hot climate, where the crossing of a wide street or open place, with the heat and glare of a pitiless tropical sun radiating and reflecting from a paved or macadam road, would be, we fancy, a thing to be avoided.

Here, if anywhere, the principle should hold good that the best laid out town is the one that has the minimum of paved road surface consistent with its traffic requirements.

When we realise that for three months of the year the town is liable to severe sand storms from the southern desert, we begin to see that there may be something in Vitruvius' idea of laying out a town to protect the inhabitants from the winds.

As he says, "Much care, then, should be taken so to set out the walls of a city that it may not be obnoxious to the pestilential blasts of the hot winds. . . . Streets and public ways ought, therefore, to be so set out that when the winds blow hard their violence may be broken against the angles of the different divisions of the city and thus dissipated."

This point of view may not be in accordance with the modern idea that the wind should have free access to the heart of the city, but when this wind is chiefly sand there may be something in it; while it is possible that anyone who has had personal experience of the east wind of such a town as Edinburgh might well think that an application of the principles of Vitruvius would be for the comfort, if not for the health, of its inhabitants.

Under unusual climatic conditions wide avenues leading out into the open country, or the radiating park system, may not be the last word in town planning.



Plan of Khartoum, 1910.
(By permission of the R.I.B.A.)

CIVIC DESIGN NOTES.

Hampstead
At the annual general meeting of the Trust held on June 14 Garden Suburb under the presidency of Mr. Trust, Ltd. Alfred Lyttelton, M.P., it was stated that the value of the houses on the estate is now about 573,000*l.*, representing, with the land and roads, a capital value of more than 750,000*l.* During the year the Ecclesiastical Commissioners have leased a further area of 112 acres to the directors, with whom the Copartnership Tenants, Ltd., have agreed to take additional lands, of 300 acres, from the Commissioners, thus increasing the total area to be developed by the Trust to 652 acres. The newly-acquired lands, which are traversed by the Mutton brook, will extend the Garden Suburb north-eastwards to the Great North-road at East Finchley, where is a station on the Great Northern branch line to Barnet and Edgware.

Swansea
Improvements.
MR. GEORGE BELL, Borough Surveyor of Swansea, has issued a report to the Property and General Purposes Committee in which he advocates certain reforms on town planning lines. The recommendations have been adopted in principle, and specific details of several schemes are to be discussed later on. That the Committee are alive to the possibilities of municipal enterprise is shown by their acceptance of the report, which contains the following clause:—

"The plan will entail a great deal of thought and work and be of slow and deliberate growth in order that it may be a reflection of the needs of the community. It will require the co-operation of many minds in order that all matters appertaining to the development of a large town may be arranged in the best possible manner. Systems of highways, tramways, water supply, and sewerage will need to be properly devised. Sites for open spaces, pleasure grounds, children's playgrounds, cemeteries, schools, and other public buildings should be arranged for in advance of the time of actual requirement. All branches of civic activity must contribute to its production, so that considerations of art, architecture, engineering, forestry, landscape, and finance may have their fullest expression."

Vacuum Street Cleaning.
CONSIDERING the length of time which has elapsed since the vacuum-cleaning system was introduced in Great Britain it is somewhat surprising that no enterprising municipal council has adopted the method for removing street refuse in dry weather without the wholesale diffusion of dust and disease organisms entailed by ordinary modes of street cleansing. In Berlin, Vienna, and elsewhere on the Continent vacuum-cleaners are used for the collection of street dust, and we believe that the same type of apparatus has been adopted in several American cities. As arranged for this purpose, the vacuum machine is driven by a petrol motor, also operating revolving brushes for loosening the dirt, and the vacuum apparatus by which the material is drawn into the receiver. Apart from hygienic considerations, the vacuum process is more economical than prevailing methods, and we hope its application for the purpose will not be longer delayed in this country.

Visitors from America.
A PARTY of 100 American citizens, accompanied by Mr. John Nolen, have arrived in England to see the working of the Town Planning Act. They are in London this current week, and will then visit most of the important towns in France, Germany, Belgium, Italy, and Austria.

Delegacies from Canada and Germany.
THE MEMBERS of the Canadian deputation, representing the municipalities of the Dominion at the Coronation festivities, will take the opportunity of visiting various garden and city suburbs in this country, by way of prelude to a more formal and systematic inspection in the course of next year. In this month a visit will be paid to this country, for a similar object, by the German Garden City Association.

Street Widening in the City.

We learn from the *City Press* that the decision of the Court of Common Council to acquire 35 and 36, Cheapside, and 1 and 1A, Friday-street, for the purpose of widening the latter thoroughfare marks another step in a much-needed improvement. Nos. 3 and 4 have still to be dealt with, but the lease of that block falls in some twelve years hence. The improvement was commenced in 1895, and when completed will make Friday-street 22 ft. wide throughout. The demolition of the present property will give an extra width of 9 ft. 6 in. at the entrance of the thoroughfare. The actual cost of acquiring the property will be 39,000*l.* The Goldsmiths' Company, who are the freeholders of the rest of the block, have, however, undertaken to purchase, at a *pro rata* charge to the whole, the narrow strip of land which will be left after the 9 ft. 6 in. has been thrown into the public way. By this means the Corporation will receive 23,000*l.*, or thereabouts, for a very narrow strip of ground only useful to the adjoining owners, and the cost of the improvement will thereby be decreased.

City Park Systems.

THERE is one essential difference between city parks in Great Britain on one hand and the organised park systems of the Continent and America on the other hand. Our own parks are usually isolated enclosures which, with a few exceptions, are rigorously closed often at an hour when they are most enjoyable. Continental and American parks and gardens are generally connected by leafy boulevards or driveways, forming the whole into a complete system, and, being open at all times, constitute a pleasant alternative to the streets for an evening stroll, while tending to bring the charm of nature into city life. It can scarcely be contended that British citizens are unfit for privileges enjoyed by dwellers in continental cities, and which, as a matter of fact, are granted in the case of certain Royal parks and many commons in the environs of London and other cities. More efficient organisation and a departure from the conservative methods hitherto prevailing are certainly to be desired on the part of those responsible for the creation and administration of parks, gardens, and open spaces generally in British cities and towns.

Development of an American Park in the City.

SITUATED at the altitude of nearly 1,300 ft. on the north branch of the Canadian River, the city of Oklahoma was settled in 1889, and now has a population of 70,000 persons. The streets are laid out on the symmetrical plan usual in the United States, and during the past ten years the growth of population has been accompanied by the formation and development of several large parks connected by a fine boulevard with the length of 28 miles encircling the city.

The growth of the entire system dates from the presentation of a one-acre playground by Captain Stiles, U.S. Army, an example followed by other citizens, and more recently by the purchase of land by the City Council. It is stated that in 1910 the authorities declined to spend 50 dol. in improving the first embryo park, although a week later they voted 25 dol. for the removal of refuse then covering its surface. This year the city possesses park lands whose value is estimated at about two million dollars, and by the sale of plots for building purposes they will ultimately be enabled to cover the entire cost of the park system. The largest park is the North-East Park, covering about 740 acres, and next is Trospier Park of 620 acres. About one-half of the land in these will be dedicated to the use of the public, and the remainder will be sold when the value has risen sufficiently for superior residences. The systematic development of the system dates from 1908, and a large amount of work remains to be done, but the enterprise of this city deserves notice as an object-lesson to municipal authorities in our own land, and particularly to those controlling the destinies of growing towns where land can now be obtained at moderate price.

Manchester Garden City.

THE Manchester scheme provides for dealing with the Alkington estate of 700 acres, which extends across north Manchester from Rhodes to Middleton Junction station by the creation of some 6,000 detached houses, eight upon an acre, to have gardens ranging from 250 ft. by 200 ft., and at rents of from 4*d.* to 1*d.* the square yard per year; the natural beauties of Rhode Clough and Rhodes Wood will be preserved.

Oak Common Estate, North Hammersmith.

A PROJECT is formulated for laying out the western section, 14 acres, of the estate of 46 acres which the Ecclesiastical Commissioners sold to the London County Council for nearly 30,000*l.* It is proposed to build, at an initial outlay of about 85,000*l.*, cottages of from two to five rooms, with sculleries, to be let at rents of from, say, 4*s.* to 10*s.* per week, and flats of one room or two rooms, and sculleries, at rents of 3*s.* 6*d.* or 3*s.* 9*d.* per week, with a church, schools, shops, institute, and so on, thus constituting a municipal garden city for the poor. The land lies between Wormwood Scrubs and the Grand Junction Canal. The total cost of the scheme in its entirety is computed to be 349,000*l.*

Stations on the Berlin Metropolitan Railway.

THREE factors have been considered in determining the type of underground railway stations in the city of Berlin, namely, the surface configuration of the streets, the cost of construction, and railway traffic conditions. In cases where the subway is beneath a wide thoroughfare with a central footpath the best type of station is one with an island platform, having one staircase for ingress and egress. In ordinary streets where the roadway is more than 9 metres wide the same type can be employed, the entrance to the stairway being on a refuge. If the roadway is less than 9 metres wide, two platforms are necessary, each with an access stairway either from the footpath or the ground floor of a building. Another matter taken into consideration was the possibility of having to provide for future branch lines or junctions, in each case it was necessary to make suitable modification of the design so as to avoid the risk of inconvenience and danger.

Two Authorised Schemes.

IT is stated that the Local Government Board have given their sanction to the preparation of schemes relating to the Ruilisp and Northwood estate of nearly 6,000 acres in north-west Middlesex, and to the Aston area, 1,450 acres, lying on the east side of Birmingham. The latter project is additional to that which has been already approved in respect of 2,300 acres in Quinton, Edgbaston, Northfield, and Harborne, on behalf of the Birmingham Corporation.

Road Schemes.

THE narrow coach road from Honister Pass through Barrowdale, and so by Lodore and Derwentwater to Keswick, is to be widened to 18 ft. at a cost of 6,500*l.* The Road Board will contribute 10,300*l.* to the cost of reconstructing the road from Colchester to Chelmsford upon which the Essex County Council will expend 11,000*l.* The Board have notified to the Lancashire County Council their intention to grant an aggregate sum of 30,000*l.* towards the estimated cost, 72,000*l.*, of schemes relating to, in chief, a reconstruction of the Chorley and Horwich roads, and a widening and improvement of the Blackpool and Preston, and Lancaster and Carnforth roads, and to the Staffordshire County Council their willingness to contribute 20,000*l.* of the 100,000*l.* required for the contemplated new road from Birmingham through the Black Country to Wolverhampton.

Surbiton, Surrey.

THE Surbiton District Council have unanimously decided to undertake a comprehensive scheme of town planning in all the undeveloped lands lying within their jurisdiction, concurrently with the formation of the new main roads recommended by the London Traffic Commission.



THE BUILDING TRADE.

RECENT DERRICK TOWER CONSTRUCTION.

SINCE the importation into England generally of the northern, or Scotch, system of scaffolding derrick stagings have become quite familiar accessories in building construction. We have no intention of describing in this article the combination of towers and platform customarily employed in this country for carrying the derrick cranes by which the site of almost every important

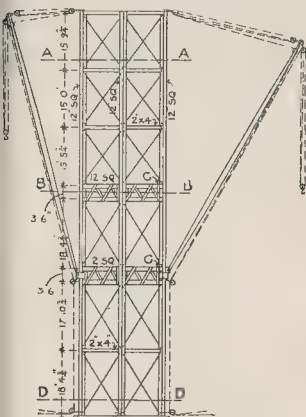


Fig. 1. Derrick Tower: Elevation.

building is effectively commanded in the present day. Our readers, however, will probably be interested in some details of recent derrick towers and accessories used in the United States.

The first example is that of the two towers with movable derrick booms designed and built for the construction of the Capitol at Helena, Montana. The main portion of the building, about 80 ft. high, is flanked by two wings, and in each of these a timber tower, 15 ft. square in plan by 110 ft. high, was constructed and provided with two steel booms 70 ft. long.

The towers were carried up to the elevation stated because it was found that this would permit them to be stayed by guy lines anchored outside the building, and would at the same time obviate connexions with the masonry. The four booms were able to command the entire site, and provided with special seats enabling them to be moved up as the work progressed.

Fig. 1 is a diagonal elevation showing the general design of the towers. Each of the four corner posts is built up of four 12-in. by 8-in. planks, bolted together with overlapping joints, the tower being divided into six series of vertical panels by horizontal struts and diagonal bracing, while the vertical panels are braced by diagonal steel bars.

With the exception of the latticed work at the levels intended for the attachment of the movable booms the horizontal parallel struts are composed of two 4-in. by 2-in. timbers, bolted together with an intermediate steel plate, like a fifth beam, and connected with the corner posts by means of angle-bar brackets. The horizontal diagonals are bolted to the struts, the arrangement being illustrated in Fig. 2.

At the two boom seats the main struts consist of two series of 12-in. square timbers spaced 3 ft. 6 in. apart, centre to centre, and

connected with latticed bracing and secured to the corner posts by vertical and horizontal angle connexions as represented in Fig. 2, where also may be seen part of the diagonal timber bracing.

The vertical panel diagonals consist of steel rods fitted with turn-buckles for

Another type of movable seat for derrick booms on timber towers is illustrated in Fig. 3. This device was designed by the Aberthaw Construction Company, of Boston, for use in building a four-story warehouse completed at Buffalo in April last year. The derrick boom in this instance was of timber

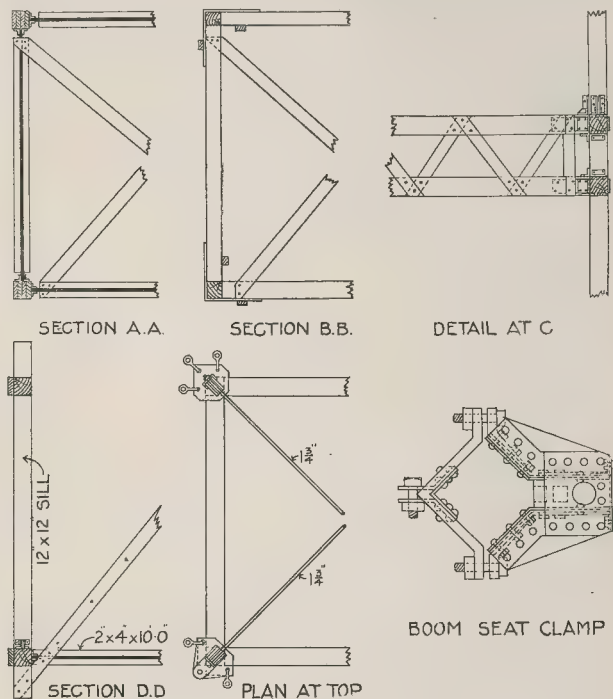


Fig. 2. Derrick Tower: Details.

tightening up, and connected by pins to the angle brackets bolted to the corner posts, these brackets being 5 in. by 3½ in. by about 24 in. long, so as to serve for connecting the horizontal struts as well as the diagonal ties.

The base of the tower is formed of 12-in. square timbers, with suitable bracing, and the top, having timbers of the same cross section, has a riveted steel cap at each corner. Each cap consists of a top and two side plates, the latter bolted through the post, the cap being provided with connexions for attachment of the guy lines and horizontal diagonal bracing formed of 1½-in. diameter steel bars with turn-buckle adjustment.

The steel boom, with the uniform width of 8 in., tapers from 5 in. deep at the ends to 16 in. deep at the middle, and at the bottom end is hinged to a 3½-in. diavertical pivot working in two bearings 18 in. apart. These bearings are provided by a riveted steel split collar, of the construction shown in Fig. 2, clamped around the corner post. This form of seat makes it easy to change the position of the boom as may be required, providing the construction of the tower is suitably strengthened, as in this example, at the two levels indicated.

The towers here described were designed and built for the contractors by the Terry and Trench Company, of New York. Each tower includes nearly 13½ tons of steel and 11,000 ft. of timber.

6 in. square at the heel, and connected with the pivot by means of a steel fork and bolts as shown. The seat consists of two pairs of castings 8 in. wide by 5 in. deep by 4½ in. thick, forming a diamond-shaped gap to fit a 6-in. square post diagonally. The two sets of clamps are secured by bolts and nuts

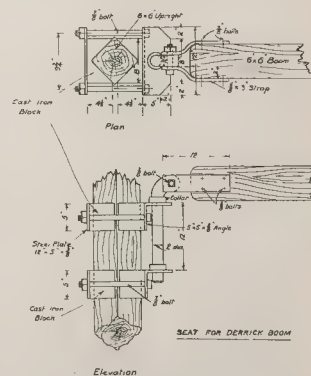


Fig. 3. Movable Seat for Derrick Tower.

passing through a 12-in. by 5-in. by $\frac{3}{4}$ -in. steel plate at the inside face, and through a 5-in. by $\frac{3}{4}$ -in. angle bracket 12 in. long at the outside face. In the horizontal flange of the brackets holes are drilled for reception of a 2-in. diameter steel pin with two collars. This pin forms the pivot for the derrick boom, and at its upper end the derrick fork is attached by means of a $\frac{3}{4}$ -in. diameter bolt.

The tower to which the derrick boom was attached had been built to accommodate an elevator for hoisting concrete to the different floors of the building, and the boom was employed for hoisting materials generally. As the height of the construction increased the derrick boom seat was successively raised, so that the highest floor might always be commanded.

As our readers may see from the drawings, the shifting operation could be very readily performed. One special merit of the arrangement is the application of a derrick boom to a tower built for an entirely different purpose, thus making one tower do the work of two, and effecting a proportionate saving in the cost of erection plant.

A recent instance of the way in which wood is being displaced by other materials in so important a timber-growing country as the United States is furnished by the steel construction towers employed in building

the Massachusetts Cotton Mills, at Lowell, Massachusetts, a structure of twelve stories, with the total floor area of more than 300,000 sq. ft.

Details of one of the towers are given in Fig. 4, where it will be seen that they are built up of interchangeable lengths, 10 ft. 9 in. in height over all. The four corner uprights consist of 4-in. by 4-in. by $\frac{3}{4}$ -in. angles, and the horizontal and diagonal members of the bracing of 2 $\frac{1}{2}$ -in. by 2 $\frac{1}{2}$ -in. by $\frac{1}{2}$ -in. angles. These sections, together with the necessary gusset plates, are connected by rivets, the whole forming a strong and rigid cage of comparatively small weight. The two 5-in. channels shown in the plan and elevation serve the purpose of guides for a hoist, and at one side a ladder made up of light angles and 5-16-in. rods is fixed to the framework of each tower length. The small holes shown in the uprights are for fixing the seat plates of derrick booms, which can be pivoted at any elevation and readily shifted as occasion may demand. The boom seat adopted was somewhat like that illustrated in Fig. 6, but with the modifications rendered necessary by the use of steel corner posts.

These towers are suitable for any class of building construction, and possess the advantage that their height can be increased by adding further lengths.

At the Massachusetts Cotton Mills two towers of ten lengths each were employed, making up the total height of 107 ft. 6 in.

The cost of the towers per 10 ft. 9 in. length was 10 $\frac{1}{2}$ ¢ each delivered on the site ready for erection, or 100¢ per tower.

The cost of erection, including the installation of derrick, motor, and everything in connexion with the towers was 90¢. 15s. per tower.

Thus the total cost per tower was 190¢. 15s., which may appear heavy as compared with that of timber, but it must be remembered that the steel units are capable of being used over and over again for several years, while the timber used in building wooden towers, is worth very little at the end of a contract.

Firms having a constant succession of contracts demanding the employment of construction towers, the adaptation of steel in the manner described will probably result in considerable savings. The towers here cited were built from the designs of the Aberthaw Construction Co., by the Russell Boiler Works, of South Boston.

BUILDERS' TOOLS IN THE MIDDLE AGES.

It is improbable that any tool used by a mediæval builder remains to-day, though those of earlier times survive. To get at a knowledge, therefore, of those tools used in this country in the Middle Ages recourse must be had to the literature of those times and to those miniatures illustrating the manuscripts.

These miniatures, or little pictures, bear evidence that they were in most cases drawn by those to whom building tools and building operations were more or less familiar; they form certainly the better of our two sources of information.

The trowel and hand mortar board, both exactly of the same form as those in use to-day, pick and spade, the hammer, compasses, straight-edge, chisel, gimlet, squares (of various kinds), auger, adze, mallet, bench, shovel (for mixing mortar and filling the hod), ladder, scaffolding, and pincers were all in common use, and require no notice. Several other tools, however, require perhaps some few words of explanation.

The Hod.

The mediæval hod was very like the butcher's wooden tray of to-day, but without the four projecting handles at the corners, and it was a good deal smaller and considerably deeper. It was carried on the left shoulder because the right hand would be the more able to grasp and hold the front edge of the hod. The stick apparently became attached in the XVth century, but the combined hod and stick did not become common till some time later.



A Carpenter's Shop.

From a Drawing of the XVth Century.

There is some evidence, but it is not conclusive, that a three-legged stand with a ledge upon which to rest the hod whilst it was being filled with mortar, was at times employed.

Brace and Bit.

A brace and bit are depicted lying on the ground in the little picture of mediæval carpentry reproduced in the *Builder* for June 9 (where other tools are represented as well). The reproduction in question, being in one colour, does not show the distinction of the materials. In the original the brace is shown as of wood and the bit as of metal.

Saws.

Several kinds of saws were in use:—

1. The great pit saw, used by two men in a saw pit.
 2. The frame saw, known to the mediæval carpenter as a "whippet saw," and which was at times of so large a size as to necessitate its being worked by two men.
 3. The hand saw.
- The "twart saw" we are unable to identify. The file for sharpening the saw is mentioned in mediæval times, also a "sett for a sawe."

The Plumb-line and Level.

The plumb-line to be held in the hand alone without any frame was in use, and the level formed by a frame with a suspended plumb in the centre was common.

The Plane.

The common mediæval plane was a large one, answering to our trying-plane of to-day.

In place of a handle a big bead often ran along the top, which was grasped by both hands. In some illustrations the shavings are seen rising as the plane is pushed along. The mention of "ij plane irons" occurs in an early inventory.

The Striker.

In a very interesting little picture in the British Museum a workman is represented as in the act of drawing the striker along the edge of a square. The mediæval striker consisted, apparently, of a point, the other end being inserted in a handle. It had not (as it has to-day) a point at one end and a blade at the other. From the fact that the working end when in use was always set against the side of a square or straight-edge it is not easy to see whether mediæval strikers consisted of a blade or a point. Probably, however, we shall not be far wrong if we consider the triangular blade of to-day to be a more or less modern addition, and the striker of the Middle Ages to have consisted of a point only.

The Womble.

Dr. Bradley has explained in his edition of Strutt's "Middle English Dictionary" that the "wimble" was a boring iron. We may, perhaps, conclude that the womble was an early form of bradawl.

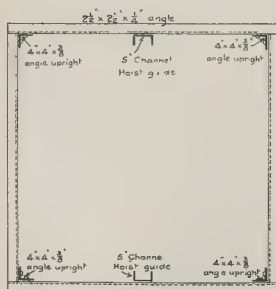
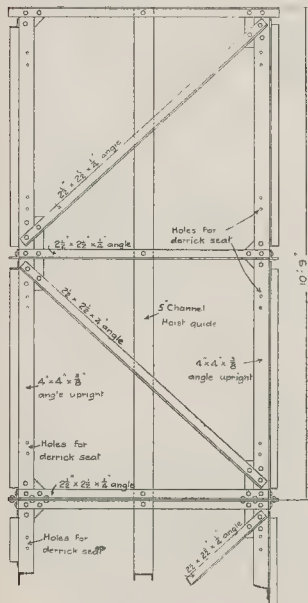


Fig. 4. Steel Derrick Tower: Plan and Part Elevation.

The Rule, Calipers, and Axe.

There is some evidence that the rule and calipers were in use. The axe is a common feature, but the meaning of a "lat axe head" mentioned in the collection of medieval wills and inventories published by the Surtees Society is not clear.

In the little picture drawn on p. 17 b. of the British Museum MS. 18850 an unusual form of tool is depicted. Unfortunately, it is not represented as in use, but as lying on the ground. Its use and name we are unable to determine. It is similar in appearance to the tool used in putting down carpets, but with a much shorter handle. Its possible use might be for cleaning the face of ashlar.

For working upon stone one of the most common tools was that which is perhaps best represented by the bricklayer's hammer of to-day. At one end of the head was apparently the same cutting edge; the form of the other end it is not easy to determine. The practice for a workman to set the stone upon which he was working upon another block to raise it to a comfortable level was as general as it is to-day. Winches and various methods for the raising of weights were employed. Sometimes, however, a single large piece of worked stone would be carried up on the back of a workman.

Wheelbarrows.

The common form was almost exactly similar to that used to-day in English brickfields, being long, low, and without sides. For a mediæval representation of the barrow see the *Builder* for June 2. When loose material was to be carried it was apparently placed in a basket.

Baskets were in common use. They were large, with two handles opposite each other rising from the top.

It will be understood that the above is but an outline of the more common tools used by builders in the Middle Ages. Many of the finer tools used by painters, glaziers and glass painters, carvers and sculptors, and the heavier tools used by the masons, tilers, plasterers, and lime burners find no mention, so far as we know, in mediæval literature.

Our illustration is a reproduction of a XVth-century picture on p. 48 b. of the British Museum MS. 18193.

GENERAL BUILDING NEWS.**NEW CHURCH, RHONDDA.**

This church has been erected at Blanycwym from the designs of Mr. R. S. Griffiths, architect, Trefor, who is also a Town Councillor. The cost of erection was 1,000*l.* and the builder was Mr. E. J. Davies, of Treherbert.

NEW SCHOOL, GATESHEAD.

This school for infants, which is an addition to the existing school buildings, was opened last week, and has been erected from plans prepared by Mr. F. W. Purser, architect and surveyor, of Gateshead. The cost of erection was 5,650*l.*

NEW HALL, PRIARS GREEN.

This hall, which is being erected for the Independent Methodists, has been designed by Mr. S. P. Silcock, F.R.I.B.A., architect, of Warrington, and the accommodation provides for over 300. The contractors for the work are Messrs. Joseph Dolan & Son, of Warrington.

CONVALESCENT HOME, LEICESTER.

This new home for women is being erected on a site near Woodhouse Laves for the Leicester and County Saturday Hospital Society. The architects for the work are Messrs. Seale & Riley.

ALL SAINTS INSTITUTE, POPLAR.

This new building, situated in Newby-place, Poplar, the foundation-stone of which was laid by H.R.H. Princess Henry of Battenberg last year, adjoining the Town Hall and opposite to the fine Parish Church, was formally opened by the Bishop of London on Saturday, July 1. The building has been erected partly on the site of an old parochial school and partly on a portion of the rectory garden. It consists of—on the ground story, entrance hall and corridors, three club-rooms, a gymnasium, and a billiard-room on the first floor, a hall capable of seating 350 to 400 persons, with a stage and retiring-rooms. There are also lavatories and cloak-rooms. A kitchen is provided on the mezzanine floor for service in connexion with the various guilds and clubs now to be housed here instead of being scattered about the parish. The frontage next Newby-place is of Portland

stone and red bricks (Renaissance). The joinery throughout is of pitch-pine, polished. The floor of the ground story is of pitch-pine blocks, and that on the upper story of pitch-pine boards polished suitable for dancing. The building is lighted by electricity and heated by radiators (hot water at low pressure). Messrs. J. & W. Clarkson, of Poplar and Bloomsbury, are the architects, and Messrs. F. & H. F. Higgs, of Loughborough Junction, the contractors.

TRADE NEWS.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air pump," ventilators and air inlets, has been applied to Cynlais School, Ystradgynlais.

It is announced that in consequence of the death of the late Sir John Aird the businesses of Messrs. John Aird & Sons and the Westminster Construction Company, Ltd. (of which the late Sir John Aird was Chairman from its formation in 1899), have been amalgamated, and will in future be carried on under the registered style and title of "Airds, Ltd." The Chairman of Messrs. Airds, Ltd., is the present Sir John Aird, and the Managing Director Mr. Malcolm R. Aird.

The New Isolation Hospital, Conway, is being warmed and ventilated by means of Shorland's patent Manchester stoves with descending smoke flues, patent Manchester grates, exhaust roof, and special inlet ventilators, supplied by Messrs. E. H. Shorland & Brother, Ltd., of Failsforth, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At Tuesday's meeting of the London County Council the following applications, under the London Building Acts, were dealt with (the names of the applicants are given in parentheses).

Lines of Frontage and Projections.

Brixton.—Projecting sign in front of Nos. 383 and 385, Brixton-road, Brixton (Reliance Electrical Company).—Consent.

City of London.—Iron and glass shelter at the entrance to the Cripplegate Institute, Golden-lane, City (Mr. F. S. Hammond for the Governors of the Cripplegate Foundation).—Refused.

Clapham.—Greenhouse at the rear of No. 100, Wakehurst-road, Clapham Common (Mr. T. Gardin).—Consent.

Dulwich.—Porch in front of No. 203, Camberwell-grove, into a lounge (Messrs. Bromley & Sames for Mr. W. Beecroft).—Consent.

Haggerston.—Roof over the open space between the flank of No. 24 and 24A, Queen's-road, Haggerston, and Brook-road (Messrs. Lovegrove & Papworth for Messrs. Lewis Davies & Co.).—Refused.

Hammersmith.—Urinal at the "Distillers' Arms" public-house, Fulham Palace-road, Hammersmith (Messrs. Nowell, Parr, & Kates).—Refused.

Hampstead.—Retention of a one-story building at No. 16, Eton-road, Hampstead, next to Fellows-road (Messrs. T. D. & A. R. Peacey).—Consent.

Hampstead.—Addition at the London Society's Blind School, Upper Avenue-road and Eton-avenue, Hampstead (Mr. R. C. Edwards).—Consent.

Islington, North.—Two one-story shops in front of No. 39, Highgate-hill, Islington (Mr. G. Carter for Mr. Chipper).—Consent.

Islington, North.—Two one-story shops at the "Market Hall" to abut upon Devonshire-road and Sussex-road, Holloway (Mr. H. G. Leslie for Mr. J. Roberts).—Consent.

Islington, North.—Four houses with bay windows and porches, and three houses with bay windows (Mr. W. Hollis).—Consent.

Islington, West.—Greenhouse at St. Barnabas' Vicarage, Caledonian-road, Islington (Rev. F. Swainson).—Consent.

Lewisham.—Wood and iron pent roofs at Nos. 102, 104, 106, and 108, Ewart-road, and Nos. 116, 118, 120, and 122, Dalmain-road, Lewisham (Mr. W. J. Short).—Consent.

Lewisham.—Coal office building on the eastern side of Burnt Ash-hill, Lee (Messrs. Wallace, Spiers, & Co. Ltd.).—Consent.

Lewisham.—Bay windows, porches, and oriel windows to houses on the north-eastern side of Court Hill-road, Lewisham (Mr. A. Roberts).—Consent.

Lewisham.—One-story shops in front of Nos. 7 and 9, London-road, Forest Hill (Mr. J. R. Vining for Mr. C. Mortlock and Mr. H. Wright).—Consent.

Lewisham.—Two houses on the north-eastern side of Baring-road, Lewisham (Mr. W. T. Knott for Mr. R. Rawitt).—Consent.

Marylebone, East.—Erection of buildings on the site of Nos. 224, 226, and 228, Great Portland-street, St. Marylebone (Mr. C. W. Ferrier

for the British and Foreign Blind Association).—Consent.

Marylebone, East.—Projecting balcony at Nos. 30 and 31, Wimpole-street, St. Marylebone (Mr. F. M. Elgood for Mr. S. Lithgow).—Consent.

Marylebone, East.—Shop front, oriel windows, and a projecting entrance at Nos. 15 and 16A, Old Cavendish-street, St. Marylebone (Mr. L. Barrett).—Consent.

Marylebone, East.—Motor garage at No. 56, Townshend-road, St. Marylebone (Mr. A. F. Faulkner for Mr. W. Willett).—Consent.

Marylebone, West.—Bulkhead and an addition to the fascia on the one-story addition in front of Nos. 382 and 386, Edgware-road, St. Marylebone (Mr. S. H. Burdwood).—Refused.

Newroad.—Bay windows and balconies in front of Nos. 27 and 29, Rosendale-road, Dulwich (Mr. D. W. Chapman-de-Louth).—Consent.

Paddington, South.—Iron and glass covered way at No. 15, Forchester-terrace, Paddington (Messrs. Napper & Sons).—Consent.

Paddington, South.—Bathroom addition and a two-story bay window at No. 5, Hyde Park-gardens, Paddington (Mr. J. S. Brown for Mr. E. B. Kyd).—Consent.

St. George, Hanover-square.—Addition in the basement area at No. 22, Chapel-street, Grosvenor-place (Mr. C. W. Ferrier for Mr. H. A. Parker).—Consent.

St. George, Hanover-square.—Addition to an iron and glass shelter in front of Belgrave-mansions, Grosvenor-gardens, Buckingham Palace-road (Mr. G. A. Codd for the Belgrave Mansions Company, Ltd.).—Refused.

St. Pancras, North.—Erection of the buildings abutting upon both sides of a proposed new road to lead from Highgate-road to Lisson-gardens, St. Pancras (Mr. W. S. Dakers for Mr. E. Owers).—Consent.

St. Pancras, North.—Corrugated iron roof over the entrance to Messrs. Winsor & Newton's factory, Spring-place, Kenish Town (Mr. A. P. Killik for Messrs. Winsor & Newton).—Consent.

Strand.—An iron and glass shelter at the Adelphi Hotel, John-street, Adelphi (Messrs. Hayward & Maynard).—Consent.

Strand.—Projecting sign over the main entrance to Lyons' Popular Café, Nos. 201 and 202, Piccadilly (Messrs. J. Lyons & Co., Ltd.).—Consent.

Strand.—Projecting stone balcony at the premises of the Law Society, next to Carey-street, Chancery-lane (Messrs. Lander, Beddells, & Crompton for the Law Society).—Consent.

Wandsworth.—Three buildings upon the site of Nos. 2 and 4, Christchurch-road, Streatham (Messrs. Barlow & Roberts).—Consent.

Wandsworth.—Lavatory buildings in front of the proposed new school at the Convent of the Sacred Heart, Roehampton-lane, Putney (Mr. P. A. Lamb for the Rev. Mother Stuart).—Consent.

Wandsworth.—Projecting porch in front of No. 47, Rushmill-road, Putney (Mr. W. H. Pearce).—Refused.

Westminster.—Projecting one-story shop-front at No. 167A, Victoria-street, Westminster (Messrs. Z. King & Son for Messrs. R. T. Raikes, H. Hiscox, and Louise Lean).—Consent.

Woolwich.—Four houses on the southern side of Dunvegan-road, Woolwich (Mr. J. J. Bassel).—Consent.

Width of Way.

Holborn.—Alterations to the shop-fronts at Nos. 188 and 189, Drury-lane, Holborn (Messrs. Colcutt & Hamp).—Consent.

Width of Way and Lines of Frontage.

Bow and Bromley.—Coffee-stall adjoining No. 2, Levefe-road, Bow (Messrs. Andrews & Peacock for Mr. A. Philips).—Consent.

City of London.—Building on the southern side of Lombard-street, City, westward of Clements-lane (Messrs. Gordon & Guntton for the Royal Insurance Company, Ltd.).—Consent.

Lewisham.—Two houses with porches and bay windows on the southern side of Eliot-place, Blackheath (Messrs. D. Smith, Son, & Oakley).—Consent.

Marylebone, East.—Iron and glass covered way in front of No. 1, Titchfield-road, Regent's Park (Mrs. L. Charles).—Consent.

Width of Way, Line of Frontage, and Space at Rear.

St. Pancras, North.—Erection of buildings upon a site abutting upon Kenish Town-road, Prince of Wales-road, and Grafton-mews, St. Pancras (Mr. S. G. Castleman for Sir H. Regnart, J.P.).—Consent.

Width of Way and Deviation from Certified Plan.

City of London.—Rebuilding of the "Primrose" public-house, Primrose-street, Bishopsgate (Messrs. Eedle & Meyers for Messrs. Truman, Hanbury, Buxton, & Co.).—Consent.

Width of Way, Space at Rear, Deviation from Certified Plan and Projections.

Marylebone, West.—Addition to a building at the corner of Baker-street and Dorset-street, St. Marylebone (Mr. P. Waterhouse for the National Provincial Bank of England).—Consent.

Lines of Frontage and Construction.

Dulwich.—Wood and iron coal office building at Honor Oak Station on the south-eastern side of Wood-vale, Dulwich (Mr. W. J. Snelling).—Consent.

Finsbury, East.—Projecting showcase at the Old-street Station of the City and South London Railway, next to City-road (Messrs. W. C. Davies & Co.).—Consent.

Fulham.—Wood and iron shed at Palace Wharf, Rainville-road, Hammersmith (Messrs. Penning & Co., Ltd.).—Consent.

Hackney, South.—Projecting advertisement board at No. 271, Well-street, Hackney (Mr. A. E. Abrahams).—Consent.

Hamstead.—Shed erected in front of No. 292, Finchley-road, Hamstead (Mr. S. C. Lathbridge for Mr. W. H. S. Schneider).—Refused.

Kensington, North.—Two wooden sheds of a temporary character at No. 23, Royal crescent, Holland Park-avenue, next to Darnley-road (Messrs. Moss & Jameson for Mr. E. Norwood).—Consent.

Kensington, North.—Iron and glass shelter over the projecting one-story shops at Nos. 114 and 116, Westbourne-grove, Kensington (Mr. A. Woollard).—Consent.

Kensington, South.—Iron and glass conservatory over the porch in front of No. 26, Queen's-gate, South Kensington (Messrs. Taylor, Lovegrove, & Co.).—Consent.

Lewisham.—Wood and iron building at No. 332, Brownhill-road, Catford, next to Broadfield-road (Mr. J. E. Brandon).—Refused.

Norwood.—Temporary showcase on the forecourt of No. 6, Effra-road, Brixton (Mr. W. L. Watling).—Consent.

Rotherhithe.—Water-closet building of a temporary character at No. 38, Raymouth-road, Rotherhithe (Messrs. Church & Canham, Ltd.).—Consent.

Rotherhithe.—Two buildings of a temporary character at No. 52, Raymouth-road, Rotherhithe (Messrs. G. E. Wallis & Sons, Ltd.).—Consent.

Wandsworth.—Temporary wooden motor house at "The Cedars," West-hill, Wandsworth (Mr. G. Edwards).—Consent.

Formation of Streets.

Hamstead.—Proposed street to lead from Frogland-lane to Barbey-avenue, Hamstead (Messrs. Farebrother, Ellis, & Co.).—Consent.

Hamstead.—Formation of a street for carriage traffic to lead from High-road, Kilburn, to Messina-avenue, Hamstead (Messrs. G. Reader & Co.).—Refused.

Wandsworth.—New streets for carriage traffic to lead out of Leigham Court-road and Valley-road, Streatham (Mr. E. B. Anson).—Consent.

Wandsworth.—Erection of buildings upon a site at the rear of houses on the north-western side of Guildersfield-road, Streatham (Messrs. Fasnach & Beale for Mr. N. H. Boys).—Refused.

The recommendations marked + are contrary to the views of the metropolitan borough councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—New stores, offices, and houses for Northern Co-operative Society (4,000l.); Messrs. Geo. Bennett & Mitchell, 148, Union-street, Aberdeen.

Arbroath.—Alterations to infirmary (8,000l.); Mr. Hugh Gavin, architect, 42, Hill-street, Arbroath.

Ayr.—Proposed extensions to school (3,000l.); the Vicar.

Babington.—Proposed fifty to 100 houses for the Mells Colliery Company.

Bagthorpe, Selston, Everton, and Scafell.—Schools (Mr. L. Maggs, architect, Shire Hall, Nottingham).

Ballymena.—Public baths; Surveyor, Ballymena Urban District Council.

Boston.—Six houses (980l.); Messrs. Gethorpe & Sons, builders, North-road, Bourne.

Bedding.—St. Cadoc's Church; Mr. W. Dowdwell, architect, John-street, Treherria; Messrs. Jones Bros., builders, Edwardsville, Treherria.

Billerica.—Nurses' home at workhouse (700l.); Mr. F. W. Jarvis, builder, Ongar-road, Brentwood, Essex.

Blackpool.—Wesleyan Church, South Shore District (2,500l.), Highfield-avenue; Church Trustees, Blackpool.

* See also our list of Competitions, Contracts, etc., on another page.

Bolton.—Church, Chorley Old-road; Church-worshippers, St. Barnabas, Bolton.

Bracewell.—School (3,000l.); Mr. J. Stewart, architect, Shire Hall, Wakefield.

Bromham (Wilts).—School (4,000l.); Mr. T. G. Powell, County Hall, Trowbridge.

Brooms Cottages.—School (5,000l.); Mr. C. A. Clayton Greene, architect, 18, Norfolk-street, Sunderland.

Brough (E.R. Yorks).—Police-station and court-house; Mr. A. Beaumont, Surveyor, County Hall, Beverley.

Cratney.—School (45,000l.); Messrs. Cullen, Lookhead, & Brown, architects, 3, Blythwood-square, Glasgow.

Castle Douglas.—Additions, house (1,850l.); Messrs. Jas. Barbour & Bowie, architects, 55, Buccleugh-street, Dumfries.

Childs, Wickham.—School; Mr. H. W. Household, Secretary, Education Committee, Gloucestershire County Council.

Courthill.—Additions, school; Mr. F. Newman, Council House, Poole.

Dalkeith.—Premises, opposite the railway-station for the Commercial Bank of Scotland, Ltd. (2,000l.); Messrs. Sydney Mitchell & Wilson, architects, 13, Young-street, Dalkeith.

Dowsby.—Eight houses (1,340l.); Mr. J. Wright, builder, Meadow Gate, Bourne.

Dyce.—Addition to public school; Mr. J. A. Allan, architect, 22, Union-terrace, Aberdeen.

Kastbourne.—The following plans have been passed:—Additions, "Avoca," Old Wish-road, for Mr. H. Oakley, Messrs. M. Martin & Son, builders; additions, "Benenden," Carls-road, for Mr. F. Lawson Lewis, Mr. F. G. Cooke, architect; additions, "Thorn Lodge," Spencer-road, for Mrs. Macleay, Messrs. G. Bainbridge & Son, builders; alterations to garage, West-street, for Mr. J. Potter, Mr. J. Bodie, builder. A plan has been lodged by Messrs. Harvey & Son for additions to "The Lion Inn," Seaside; Mr. Andrew Ford, architect.

Roles.—The following plans have been passed:—Alterations, "Carlton House," also to houses; Gilda Brook-road, for Mrs. Fildes, three houses, Corporation-road, Eccles, Health Committee of Eccles Corporation; extensions, erecting shop, Gorton-street, Pell Green, for Messrs. L. Gardner & Sons, Ltd.; picture hall, Liverpool-road, Patricroft, for Mr. E. H. Gee; residence, Ellesmere-road, Ellesmere Park, for Mr. S. Hadfield; alterations and additions, office of works, Syrat-street, Patricroft, for Messrs. Mitchell, Shackleton, & Co., Ltd.

Edinburgh.—Proposed central police-station on site of old Corn Exchange (4,500l.); Mr. J. Walker Smith, Engineer, Edinburgh Town Council.

Elham (Kent).—Additions to infirmary; Mr. R. Loneragan, Clerk, Board of Guardians, Elham.

Farnborough.—Theatre; Mr. G. S. Valentine, architect, Farnborough.

Fife.—Hospital (12,000l.); Messrs. Gillespie & Scott, architects, 4, Queen's gardens, St. Andrews.

Glasgow.—New buildings, Kinning Park (3,000l.); Messrs. Bruce & Hay, architects, 261, West George-street, Glasgow. Factory for the Gibb Timber & Bobbin Mill Company (5,000l.); Mr. A. V. Gardner, 164, Bath-street, Glasgow. Extensions to Wreckhead Works, Springfield-road; Mr. John McKusack & Son, architects, 68, West Regent-street, Glasgow.

Grange.—Proposed rebuilding of parish church and erection of parish hall (5,000l.); the Vicar.

Hemsworth.—Additions to infirmary (2,000l.); Mr. J. Scholefield, Board of Guardians, Hemsworth, Yorks.

Holyrood.—Enlargement of school; Mr. W. P. Donald, Secretary, Education Committee, Barnsley Town Council.

Hornchurch.—Enlargement of South Hornchurch School (1,460l.); Mr. G. Brown, builder, Maidstone-road, Grays, Essex.

Hull.—Hospital adjoining workhouse; Architect, care of Mr. R. H. Winter, Clerk, Board of Guardians, Hull.

King's Dyke (Cambridgeshire).—School (4,500l.); Mr. H. H. Dunn, architect, St. Peter's Churchyard, Lincoln.

Lanark.—Model lodging-house, Wellgate-street (2,000l.); Messrs. Trail & Stewart, architects, 38, High-street, Lanark.

Llandillo-y-n-Rhos.—Church; Vicar, Rhos.

Llandudno.—Nonconformist Chapel in St. Tudno's Cemetery; Mr. E. P. Stephenson, Surveyor, Llandudno Urban District Council.

Luton.—Proposed theatre, High-street North, for the Mill St. Dramatic Syndicate.

Lymington.—Additions to workhouse (5,000l.); Mr. R. Loneragan, Clerk, Board of Guardians, Elham.

Macclesfield.—School, Athey-street (9,375l.); Messrs. Roylance & Co., builders, Waters Green, Macclesfield.

Matlock.—Post-office, Bank-street (11,500l.); H.M. Office of Works, Storey's-gate, S.W.

Mossley.—School (5,741l.); Messrs. Walter Batley & Son, builders, Micklehurst, Mossley, Manchester.

Nether Kingsseat.—Works for Asylum Committee; Mr. J. R. McMillan, architect, Union-street, Aberdeen.

Newport (Isle of Wight).—Additions to electricity works for the Isle of Wight Electric Light Company.

Newport (Mon.).—Training college (30,000l.); Messrs. Swash & Son, Bank-chambers, Newport.

Northampton.—The following plans have been passed:—Extensions, warehouse, Stanley-road, for Messrs. C. & E. Lewis; ten houses, Southampton-road, for Mr. J. C. Wareing; alterations to premises, "The Cleveland Arms," Kettering-road, also alterations to "The Bakers' Arms," Castle-street, for Messrs. P. Phipps & Co., Ltd.; five houses, Stanhope-road, for Mr. R. Cosford; two houses, Twocroft-road, Messrs. H. H. P. Bouvier and E. Rods (trustees).

Nuneaton.—Additions to workhouse; Mr. H. Quick, architect, Birmingham.

Paisley.—Additions and alterations to Nether Common Carpet Works; the Proprietor.

Peebles.—Extensions to Chambers Institute (1,500l.); Mr. G. W. Browne, 24, Charlotte-square, Edinburgh.

Pendleton.—School, Leaf-square (12,000l.); Mr. Henry Lord, architect, 42, Deansgate, Manchester.

Penrhiwty.—Infirmary, Clerk, Board of Guardians, Port Talbot.

Pentrebach.—Fifty-two houses; Messrs. Jones & Sons, builders, Edwardsville, Treherria.

Plymouth.—Church, adjoining Old Laird-road; Rev. A. E. Baker.

Poole.—Fire-station, Branksome Park; Mr. F. Newman, Council Offices, Poole.

Portlough.—Roman Catholic Church; Father J. Kearney, Cleric, Brighton. Parish hall and church-house; Rev. Benedict Williamson, 81, St. George's Presbytery, Earlsfield, S.W.

Rugby.—Development of Park Estate for the Rugby Benevolent Building Society. Motor house, etc., Newbold-road, for the Rugby Co-operative Society, Ltd.

St. Helens.—The following plans have been passed:—Eight houses, Borough-road, for Mr. Jos. Coupe; seven houses, Charles-street, for Mr. Jas. Gleave.

Salford.—Plans have been passed for alterations to St. James' School, Ellor-street, Pendleton, for the Governors.

Sittingbourne.—Mills for Messrs. Lloyds, Ltd., Sittingbourne.

Smethwick.—School; Mr. A. H. Sears, Secretary, Education Committee, Smethwick Town Council.

Southampton.—Enlargement, Ascpark School; Mr. J. A. Crowthey, Surveyor, Southampton Town Council. The following plans have been passed:—Four houses, St. James'-road, for Messrs. Holly & Herbert; rebuilding of premises, 34, French-street, for Mr. G. Mills.

Stoke-on-Trent.—Pavilion for children (5,000l.); Mr. C. Daniel, Clerk, Stoke Board of Guardians, Shelton, Stoke-on-Trent.

Swansea.—Extensions, Neath road, schools (9,000l.); Mr. G. E. T. Laurence, architect, 28, Bath-street, W.C.

Swindon.—Enlargement of post-office; Mr. A. J. Colbourne, builder, Swindon.

Taunton.—Additions, West Somerset Hunt kennels and stables; Mr. F. W. Roberts, architect, 2, Hammett-street, Taunton.

Thorne.—School (5,600l.); Mr. J. Stewart, architect, Shire Hall, Wakefield.

Thornton.—Shops and stores for the Markinch Co-operative Society.

Upper Beeding.—Enlargement of school; Architect, care of Mr. L. Thompson, Secretary, Education Committee, West Sussex County Council; Horsham.

Warrington.—Plans have been passed for eight houses, Padgate-lane, for Mr. W. Rowlands.

Westbourne.—School; Architect, care of Mr. L. Thompson, Secretary, Education Committee, West Sussex County Council, Horsham.

West Dean.—Enlargement of existing Breans School; Mr. H. W. Household, Secretary, Education Committee, Gloucestershire County Council.

Wolverhampton.—School, Horden-road; Messrs. T. H. Fleeming & Son, architects, Queen-street, Wolverhampton.

Woolacombe.—Brixham, and Paignton—Schools; Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Wragby.—School (200 places); Mr. W. V. Dixon, Secretary, Education Committee, West Riding of Yorkshire County Council, Wakefield.

Writlington.—Proposed large number of houses for the Writlington Colliery Company.

York.—School, Camphow-lane; Mr. J. H. Mason, Secretary, Education Committee, York Town Council.



HOUSE AT LYNSTEAD, SITTINGBOURNE.

Although in building one endeavours to use the materials of the district, due consideration of economy, especially with regard to half-timber work, often compels the use of material foreign to local tradition. In designing the house at Lynstead the architect, Mr. W. Allen

and is in close communication through pantry to kitchen.

The study is separated from other rooms by long low hall with staircase adjoining. The first floor comprises four spacious bedrooms, bathroom, lavatory, etc.

LEGAL COLUMN.

The London Building Act.

A recent case heard at the Guildhall again draws attention to the difficulty of determining when, under the London Building Act, 1894, notice should be given to the district surveyors. The summons in this case was taken out under sect. 145 of the London Building Act, and the "work" being undertaken was the reconstruction or repair of part of the roof above a water-tank in some bank buildings. The defence was that this tank had been in place since the building had been erected in 1860, and that the woodwork having become rotten it was renewed. The District Surveyor contended that the roof had been entirely removed and reconstructed, only the old lead being put back, and that he was entitled to notice, as he was bound to see that the new roofing was composed of incombustible materials.

The magistrate dismissed the summons, presumably because he considered that no offence had been committed, or that the section under which the summons had been taken out had no application; but he allowed the defendants no costs. This seems an unsatisfactory conclusion, as if parties have been guilty of no offence under the Building Act it is hard to see why they should be mulcted in costs of proceedings under the Act. On the other hand, the Act should, of course, be rigorously enforced when its provisions apply. Sect. 109 appears to explain sect. 145, as it seems to exclude from the operation of the Act "necessary repair not affecting the construction of any external or party wall" and any repair which does not amount to an addition or alteration, but the various sections of the Building Acts are difficult to construe as a whole.

The Housing and Town Planning Act.

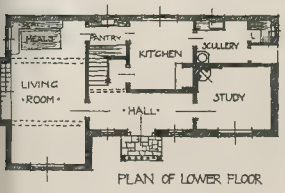
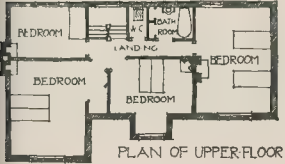
An important decision under the Housing and Town Planning Act has been given in the Chancery Division in the case of Rayner v. Mayor, etc., of Metropolitan Borough of Stepney. The plaintiff was the owner of two houses, and the Borough Council, acting on the

representation of the Medical Officer of Health, made a closing order under subsect. 2 of sect. 17 of the Act of 1909, prohibiting the use of the houses for human habitation, both of the houses at the time being let to tenants. By sect. 41 the Local Government Board may by order prescribe the form of any notice or other document, and "the forms so prescribed, or forms as near thereto as circumstances admit, shall be used in all cases to which these forms are applicable." The form prescribed for a closing order under sect. 17 subsect. 2 sets out in a note at its foot the terms of subsect. 5, which gives the owner of the dwelling-house in respect of which a closing order has been made a right of appeal to the Local Government Board within fourteen days. No appeal having been entered, the order became operative, and notices were served under subsect. 4 requiring the tenants to leave the premises. The plaintiff applied to the Borough Council to have the closing order determined, which application the Council refused under subsect. 6, and three months after the date of the closing order a notice was served on the plaintiff that steps would be taken under sect. 18 to order the demolition of the houses. The plaintiff had under both sect. 17, subsect. 6, and under sect. 18 a right of appeal to the Local Government Board; but, instead of so appealing, six days after the latter notice under sect. 18 had been served upon him he issued the writ in this action, claiming an injunction against the Borough Council. The ground of his complaint was that the closing order was irregular, and had misled him, as it contained no notice of his right to appeal. The Court held that it was intended by the note to the form of order that notice should be given of the very important right of appeal to the Local Government Board, and that it was material to the closing order, and the injunction was granted, and by consent of the parties the motion for an interim injunction was treated as the trial of the action, and the matter thus finally disposed of.

LAW REPORTS.

HIGH COURT OF JUSTICE, CHANCERY DIVISION (Before Mr. Justice EVE.) Eastbourne Building Dispute. Ellis v. Llewelyn.

In this case the plaintiff, Mr. M. Walter Ellis, of Harding Villa, Eastbourne, claimed an



House at Lynstead, Kent.
Mr. W. Allen Taylor, Architect.

Taylor, was fortunate in having for his use the timbers of an old barn, situated on the site and recently demolished. The old oak, in conjunction with dark brindled bricks and stained tiles, at once gave to the house the charm of the old Kent cottage, which was for its beauty as much to its weathered materials as to its design. The living-room, with dark beamed ceilings and recessed fireplaces, is one end partly screened off for meals,

interim injunction to restrain the defendant, Mr. Wm. Llewellyn, a builder, of Eastbourne, from building over or upon, or from using as a party wall, the western wall of the plaintiff's house, or from interfering with it except as defined by an agreement of February 24, 1911.

Mr. Beebes appeared for the plaintiff, and the defendant was represented by Mr. Adams.

Mr. Beebes said that on the west side of the plaintiff's house was a party wall which formed the boundary of the plaintiff's premises. The parties entered into an agreement on February 24, 1911, which defied what the defendant should be entitled to do with regard to the wall, while he was building a pair of houses on land adjacent to that of the plaintiff's. The agreement stated that the plaintiff should be allowed to build upon the western boundary wall of the plaintiff's premises and up against the wall of the house, and that the defendant should have the right to use that wall free of cost for all time. The eaves of the plaintiff's premises overhung the boundary wall (which was a party wall), and the defendant agreed to make certain alterations on this part of the plaintiff's property as a consideration for the plaintiff's concessions. The plaintiff's contention was that upon the construction of the agreement the western boundary wall was to be left standing, and that the defendant was to build on top of that wall. The defendant had, however, pulled down the boundary wall altogether, and built some fireplaces against the plaintiff's house, which were abutted on the boundary wall, and was using that wall as a party wall.

His Lordship: What is the width of your house?

Mr. Beebes: Nine inches. Under the agreement the defendant was not entitled to remove the wall without substituting another. The plans deposited by the defendant with the local authority bear out the construction which the plaintiff says ought to be put upon the agreement.

His Lordship: The exterior wall of the plaintiff's house is now the eastern wall of the defendant's house?

Mr. Adams: Yes. My client says that a 9-in. wall is the usual thing with houses of this class, and that the taking away of the wall does not affect the value of the plaintiff's property.

Mr. Beebes said that when the plaintiff had got 18 in., why should he give it up? It was a most unreasonable construction of the agreement to say that a 9-in. wall was sufficient. Counsel put in plans of the premises and read the evidence filed on behalf of the plaintiff, from which it appeared that the plaintiff would suffer considerable injury if the defendant built as he evidently intended, and used the plaintiff's house wall as a party wall. It was suggested that the defendant should build a new wall on the site of the boundary wall. The house had been built nine years, and on the western side was bounded by a garden wall 5 ft. in height and 9 in. in width, which was built some time before the house. The western side of the house wall was built close up to the boundary wall, and the eaves and gutter of the plaintiff's premises projected 9 in. beyond the boundary wall.

Mr. Adams submitted that under the agreement the defendant was within his rights in taking down the boundary wall and building as he had done. In his affidavit the defendant said that the written agreement was intended to give effect to a precise verbal agreement, and he denied that he had ever agreed to build the wall of his house on the boundary wall. He further said that an 18-in. wall was unnecessary and unusual in houses of this class.

Mr. Justice Eve said he was not asked to construe the agreement on the motion, which must therefore stand until the trial, the defendant in the meantime undertaking not to further build over or upon any part of the plaintiff's land. No other order except that the costs be costs in the action.

In reply to Mr. Beebes, his lordship said if the parties were ready and he could find the time he would endeavour to try the case before the Long Vacation.

KING'S BENCH DIVISION.

(Before the LORD CHIEF JUSTICE and a Special Jury.)

Lorden & Son v. The King.

THIS was a petition of right in which the suppliant was Mr. J. W. Lorden, trading as W. H. Lorden & Son, builders and contractors, of Upper Tooting.

The claim was for damages for breach of contract on the part of the War Department in connexion with a contract which the suppliant obtained from that Department of his Majesty's Government for the building of a military hospital at Shorncliffe and quarters for the sisters and staff of the hospital. There

was a further claim for extra work done, and for damages for delay caused by the servants of the Crown.

The claims were not admitted.

Mr. H. E. Duke, K.C., M.P., and Mr. G. Stuart Robertson were for the suppliant, while the Attorney-General (Sir Rufus Isaacs), Mr. Rowlatt, and Mr. Raymond Asquith were for the Crown.

Mr. Duke said the action was really between the contractor and the War Department. Mr. Lorden had for years been accustomed to carry out a great deal of work for the War Office and other Government departments, and for some years had been included in the list of contractors who were invited to tender for work to be done. In the beginning of 1903 the War Department desired to erect as part of the military buildings at Shorncliffe a place called the 'Families' Hospital, with an auxiliary building for the staff. Mr. Lorden was invited to tender, and he succeeded in obtaining the contract, which was somewhere about 8,000l. Terms were made in the ordinary way, and the work was entered upon. What Mr. Lorden complained of was that the War Department had not fulfilled their obligations under the contract. There were numerous questions to be decided, one being the great delay which the contractors suffered. The contract, for instance, was for a six-months' job. It was entered into in March, 1903, and should have been completed in September of the same year, but by reason of the delays which were occasioned it was not completed until September of 1909. The main question for the jury would be that connected with a road which the suppliant said he was promised, but which he had not got. The questions were subsidiary, and could be dealt with in another way. Mr. Lorden, shortly, was given to understand by the plans which were provided when he tendered for the contract that the War Department were making a road round the site which would be available by the contractors, and which would give easy access to the site. But as a matter of fact the War Department did not complete that road, but stopped the work, and the suppliant was left to labour on to the best he could. Eventually, at the invitation of the War Office, Mr. Lorden made the roadway. The building work, however, was disorganised, and they had to employ treble the number of labourers than would otherwise have been necessary. The absence of the roadway allowed an accumulation of water on the site which was at the foot of a declivity, and consequently the men were working in a swamp. In addition to that Mr. Lorden experienced great difficulty in stacking his material, and altogether the arrangements made were very frustrated. The three important questions were:

(1) Did the War Department represent that the road would be made?

(2) Whether the suppliant entered into the contract on the faith of that representation?

(3) Whether the contract was not made on the road when it was made, and so had no cause for complaint.

Mr. J. W. Lorden said he was the only partner in the suppliant firm. He had secured numerous contracts from the Government. When he examined the plans for the building in question he saw that a road was to be made round the site, and he understood from the markings on the plan that he would have the use of that road for his building operations. He reckoned that because he had not had the use of the roadway he had had to expend 3½ per cent. more for labour. By the Lord Chief Justice, witness said that if he had known that the road was not to be available, he would have examined the site much more closely, and made quite different arrangements.

Mr. Robert Olgar, estimator and surveyor to the suppliant, said he saw when he examined the site that the roadway would give a free access to the site for the stacking of the necessary material. That fact biased his estimate considerably. Later, when the work was commenced, he saw that the road was not made in accordance with the plan, a great deal of water had accumulated, and men were slipping about in the mud. Great difficulty was experienced in getting the materials to the site. Had he known that there would have been no roadway his estimate for the work would have been correspondingly higher.

Without hearing any more evidence, the Attorney-General said he was satisfied upon the evidence he had heard that, whatever the legal position might be, the contractor had based his estimate upon the understanding that the roadway would be made by the War Department. In these circumstances he did not wish to raise any further technicality, and Mr. Lorden should be paid what he had lost. The question of figures could be dealt with elsewhere.

His lordship said the decision by the Attorney-General was a wise one.

The hearing of the petition was then closed.

LONDON COUNCILS.

Berkhamstead.—Plans have been passed for Mr. J. G. Williams for three houses at Aldbury.

At the meeting of the Middlesex County Council on June 29 it was resolved that a Special Committee be appointed to go into the proposal to provide further accommodation for lunatics. The Asylums Committee presented a report to the effect that at the expiration of five years accommodation will be required for about 300 patients, and as it takes five years to complete and equip an asylum, it was desirable that the matter should now be considered.

Camberwell.—The tender of Messrs. Henry Woodham & Sons, Catford, at 2,559l., has been accepted for making-up part of Court-lane as a new street. Plans have been passed for Mr. A. Mullins for additions to No. 199, Southampton-street.

Hamstead.—Application is to be made to the London County Council for sanction to raise a loan of 15,000l. for additions and alterations to the Town Hall buildings.

Heston and Isleworth.—The following plans have been passed:—Messrs. Daniels & Son, storemen, High-street, Hounslow; Messrs. Hamilton, four houses, Jersey-road, Osterley; Mr. F. J. Fisher, alterations to the George and the Duke of Cornwall, Milford Arms, Labouring Boys, London Apprentices, Coach and Horses, Iron Bridge, and Checker's Inn, Isleworth, also Black Horse, Lampton, and Tankerville Arms, Hounslow. Plans have been lodged by Messrs. Hamilton for twenty-three shops in Thornby-road, Osterley, and ten houses, Jersey-road, Osterley.

Ilford.—Plans have been passed as follows:—Mr. E. T. Dunn, for Mr. A. C. Corbett, eight houses, Broomhill gardens, Ilford; Mr. H. Carr, four houses, Crat brook-road; Mr. A. T. Haines, three houses, Bradford-road; Mr. C. J. Dawson, for Mrs. C. Langman, one house and shop and ten houses, Ilford-lane.

Kensington. Messrs. Colcott & Hamp, architects, 36, Bloomsbury-square, are to be permitted to erect a building proposed to be constructed over the site of a brick barrel conduit at the rear of No. 47, Edwardes-square, subject to protective conditions.

Lewisham.—Plans and estimates by the Borough Surveyor have been approved for paving and forming as a new street Datchell-road, Perry-hill, at an estimated cost of 661l. The tender of Mr. F. W. Lowesby at 310l. has been accepted for alterations at the Town Hall and erecting office lavatory. The following plans have been passed:—Messrs. Norfolk & Prior, block of five shops, Perry-ale; Messrs. T. H. Sawyer & Son, additions to Nos. 120 and 132, Rushby-green; Messrs. J. Shorter & Co., four houses, Courtmill-road; Messrs. E. C. Christmas, additions to Dartmouth, High Church-road. A plan has been lodged by Mr. L. S. Rogers for nineteen houses, Woolstone-road.

Leyton.—The following plans have been passed:—Lea Bridge District Gas Company, extensions to offices, Lea Bridge-road; Messrs. Press & Co., warehouse, factory, and laundry; Mr. A. Low, three houses, Essex-road; Mr. P. Roche, six houses, High-road, Leyton; Mr. A. Radcliffe, five houses, Colchester-road; Mr. D. P. Hayworth, alterations and additions to laundry, Beaumont-road.

Mitcham.—Subject to the approval of a parish meeting the Council has resolved to provide a central fire-station at Upper Grove with first aid at Collier's Wood. The Council also approved plans and estimates prepared by Mr. Chart. The cost of the buildings is put at 1,630l.

Romford.—The Surveyor has been instructed to prepare a plan and specification, and tenders are to be invited, for extending the culvert in Slevins-lane, Hornchurch. Tenders are also to be invited for laying 855 ft. of bed at Chadwell Heath and 440 ft. at Great Warley.

Southgate.—The Local Government Board has sanctioned the borrowing of 3,375l. for erecting workmen's dwellings in Highfield-road. The Surveyor of the Council has had an interview with Capt. Taylor and the representatives of Messrs. Drivers, Jonas, & Co. with regard to the development of Grove lands Estate. An amended scheme was agreed to. The following plans have been passed:—Mr. W. Simmons, fourteen houses, Kelvin avenue, Bowes Park; Mr. W. Goring, twenty-five houses, Kelvin-avenue, Bowes Park, and two houses, Oakfield-road, Southgate; Mr. W. Dudley, building for electric lighting plant, Picture Theatre, High-road, New Southgate; Mr. R. Spence, eight houses, Avenue-road, Southgate; Messrs. Barker & Kirk, additions, Christ Church, Southgate.

Southwark.—Mr. Walter H. Hall, of Queen's-road, Finsbury Park, has been appointed Junior Surveying Assistant in the Borough Engineer's Department at a con-

encing salary of 80*l.* per annum, rising by annual increments of 10*l.* to a maximum of 100*l.* per annum. Fifty-seven applications are received.

West Ham.—The following plans have been issued:—Mr. W. Jacques, alterations to school, Maryland-point, Stratford; no alterations to school and caretaker's house, Denmark-street and Forty Acre-lane, West Ham; Mr. J. T. Luton, alterations to at and dumb church, East-road, West Ham, no fire brigade quarters, Stratford (4,190*l.*); Mr. H. W. Eastwood, house and office, Park-road, Silvertown; Mr. J. R. Moore-Smith, offices, workshops, etc., at Gas Lighting Improvement Company's premises, Crow's-road, West Ham, also factory at the Hart munition Company's premises, Marshgate-lane, Stratford; London General Omnibus Company, Ltd., alterations to garage, Green-reef, Upton Park; Mr. H. Simpson, alterations and additions, Gaiety Picture Palace, 3, Green-street, Upton Park; Mr. J. M. H. Adwell, alterations "The Cabin," 270, Victoria Dock-road, Custom House; Mr. G. Ingram, alterations and additions, Ruby Ale Stores, Scott-street, Canning Town; Messrs. W. Jones & Sons, paint and varnish store, Upper-road, Plaistow. The following alterations have been lodged:—Mr. J. M. H. Gladwell, alterations "Freemasons' Tavern," corner of Freemasons road and Victoria Dock-lane, Custom House; Mr. J. Rivett, alterations and additions, 3 and 5, Windmill-lane, Stratford; Mr. J. W. Kerrison, alterations to cinema-graph theatre, 127-31, Wytonstone-road, Stratford; Mr. E. Pratt, cinema-graph theatre, Willow-grove and Station-road North, West Ham; Mr. W. G. Garman, alterations and additions to the Ruby Ale Stores, Garney-road, Stratford; Mr. F. Bannister, match factory, Bradfield-lane, Silvertown.

Westminster.—Atterbury-street is to be paved with asphalt and concrete at an estimated cost of 125*l.* A plan has been agreed by Messrs. Perry & Co. (Bow), Ltd., for a building on the site of Nos. 28-30, Great Street-street, and Nos. 2, 4, and 6, St. Ann's-lane.

Willesden.—The Engineer is to be authorised complete negotiations for the acquisition of a large area of land, opposite the White Hart Hotel, Church End, and to submit detail plans and estimates for the erection thereon of conveniences for both sexes. He has also been directed to prepare detail plans and estimates of the cost of erecting conveniences for both sexes at the junction of Malvern-road and Canterbury-road with Canon-vale-road. Other plans are to be prepared for the construction of a sewer in Neasden-lane at an estimated cost of 220*l.*

PATENTS.

APPLICATIONS PUBLISHED.*

3,402 of 1910.—Julius Gotlob Zwicker: Sawing machinery for manufacturing cement pipes with loaded ends.

3,687 of 1910.—James Albert King: Mechanical steam-driven apparatus for the painting of surfaces of buildings or other structures and surfaces.

3,632 of 1910.—Melville Graham Clayton: Machinery for punching metal plates, bars, and the like.

3,922 of 1910.—Charles Wicksteed: Sawing-machines.

4,109 of 1910.—Frederick Ritter Von Rittberg: Riveting-machine.

4,439 of 1910.—Arthur Grosvenor Wilkinson and Thomas Conway Tomlinson: Roof glazing the like.

3,142 of 1910.—William Larmer: Chimney-pipes for the prevention of back-watering in sea drains.

4,012 of 1910.—Alfred Henry Stanbrough: Apparatus for moulding concrete walls *in situ*.

4,231 of 1910.—Mortimer Warren: Device for temporarily supporting venetian blinds and the like whilst being secured in position or moved.

3,552 of 1910.—Frederick Rings: Reinforced structures.

3,601 of 1910.—Alexander Roberts McLeod: Apparatus for the like.

3,979 of 1910.—Cedric Reginald Douglas: Direct and regulated water supply in one ball valve to a range, or ranges, of heating cylinders for water-closets and the like.

4,220 of 1910.—Robert Arthur Cowman and Robert Riley: Wall ties for reinforcing brick and concrete structures.

3,744 of 1910.—Mutter Kutner and Lubecius: Tiles for covering walls, ceil-

ings, and other places, and in the manufacture thereof.

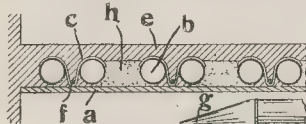
3,283 of 1911.—Joseph Duffy: Wood flooring blocks.

7,487 of 1911.—Max Mannesmann: Building blocks.

SELECTED PATENTS.

2,238 of 1910.—Julius Heinrich Albert Wrisenberg: Floors.

This relates to a reinforced concrete floor of the ribbed type, which is formed *in situ* by means of sheet metal or pasteboard tubes *b*, which are laid in pairs on a plaster or like ceiling *a*, supported on temporary centering, each pair forming a permanent centering for

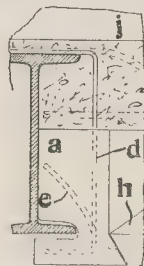


2,238 of 1910.

a rib. The reinforcements *f* for the ribs are supported by clamps *c*, and the ends of the tubes are flattened or closed by flattened members *g*. The floor slab *e* is cast with the ribs, sound-deadening material *h* being first filled in between the ribs and partly embracing the tubes.

2,911 of 1910.—James Albert King: Girders and columns.

This relates to girders and columns which are formed of rolled-metal joists surrounded wholly or partly by concrete or other fireproof blocks. The blocks *a* are grooved to engage the flanges, and cover the greater part of the web;

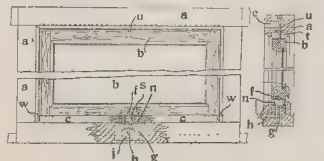


2,911 of 1910.

they are reinforced by bars *d*, *e*, the former being bent over the top flange. The ceiling slabs *h* and concrete floor *j* are supported by the blocks *a*, and the joints between the blocks and joists are grouted with cement.

2,865 of 1910.—Henry Howlett, Charles Edgar Howlett, and Stephen Joseph Howlett, trading as H. Howlett & Sons: Windows.

This relates to window-sashes which are reversibly pivoted on central, vertical, or horizontal pivots, and are raised, when closed, so that the top rail of the sash enters the groove in the head of the frame, by means of a vertically movable sill, which also operates weather bars at the sides of the window. The sash is pivoted on vertical pivots *a*, *f*. The sash *b*, when lowered for opening, is supported by a spiral spring *s* in a boss on a plate *n*, fixed on



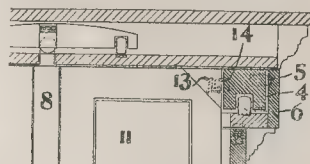
2,865 of 1910.

the lower rail of the frame *a*, and is raised, when closed, into a groove *t* in the head of the frame by a plate *g*, bearing against the underside of the movable sill *e*, and raised by means of the handle and shaft *h* and eccentric *j*. The weather bars *a* are mounted in grooves at the side of the frame *a* by means of inclined slots working on pins in the grooves, and are operated by projecting plates *u* on the sill *e* bearing against the lower ends of the bars, so that when the sill is raised the bars are forced out into grooves in the sash stiles. The lower pivot pin *f* rests on the plate *g* while the upper pin *u* engages holes in the sash and frame, and

is raised, so that the sash can be removed by hand or by a tool inserted through an aperture *e* in the frame.

3,211 of 1910.—Karel Otto Slingsvoot Ramorrt and Ernst Jan Nellem: Doors.

This relates to revolving doors, the wings of which collapse and fold parallel to each other when abnormal pressure is applied, as in case of panic. The wings *11* are hinged to the central spindle *8*, and are held in the radial position by the engagement of yielding holding devices on the wings with a rotatable ring *4* mounted in the top of the door-casing, and provided with anti-friction rollers *5*, *6*. The wings

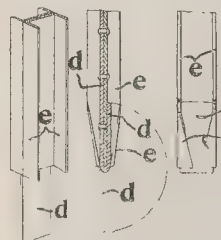


3,211 of 1910.

11 are yieldingly held in frames, secured to and rotating with the spindle *8*. Portions of the casing are also hinged and held in position, so that they fold back on excess of pressure, and means are provided for moving the wings when collapsed to the side of the door-casing. The holding means for the wings *11* and hinged portions of the casing *20* may consist of spring catches *13*, *14*.

3,723 of 1910.—Richard Henry Annison: Piles.

This relates to sheet piles made from simple or built up flanged members, and provided with points by bending the flanges down on to the webs, so as to produce a wedge like form. The flanges may be cut away a short distance from the bottom, leaving the web, which is bent up



3,723 of 1910.

either before or after bending down the flanges. The web *d* is bent and the flanges *e* are bent down over it. Solid wedges may be inserted under the turned-down flanges. Instead of turning up the web, a sheet of metal may be bent to embrace the bottom of the member.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the nominal rate of 1*l.* per annum, with delivery by *Express* at 1*l.* 10*s.* per annum, and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 2*l.* 10*s.* per annum. (Terms of sale payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine street, W.C.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.		
June 7.—By JAMES HARRIS & SONS,		
Romsey, Hants.—Farms and agricultural land,		
779 acres, f.		£17,640
June 14. By MADDISON, MILES, & MADDISON,		
Caister-on-sea, Norfolk.—Two freehold resi-		
dences	700	
Great Ormesby, Norfolk.—Freehold house and 1 acre	125	
Fulby, Norfolk.—Freehold house and 1 acre	200	
By A. BERTHESHAU & SONS.		
Halesham, Sussex.—Copyhold cottage and 1 a. 1 r. 15 p.	485	
South-rd., house and 3 a. 2 r. 26 p. f.	500	
Hellingley, Sussex.—Pasture land, 2 r. 20 p. f.	130	
June 15. By BRADSHAW BROWN & CO.		
Limehouse. 18 and 21, Narrow-st., f. and u.t. 78 yrs., c.r. 16 <i>l.</i> 15 <i>s.</i> 1 <i>d.</i> , c.r. 220 <i>l.</i>	2,300	
By JOHN H. BULMER.		
Rotherhithe. 22, Tenchmore-st., f., w.r. 26 <i>l.</i>	200	
By DAVID J. CHATELLE & SONS.		
Sydenham.—Addington gr., Suffolk, f., p.	300	
RECENT SALES.—Continued on page 28.		

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair way of clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

JULY 31.—Lowestoft.—SCHOOL.—The Lowestoft Education Committee invite designs for an elementary school for 800 boys at Roman-hill. Three premiums are offered: 20, 10, and 5 guineas. See advertisement in issue of June 16 for further particulars.

JULY 31.—Wellington.—NEW PARLIAMENT BUILDINGS.—Premiums of 1,000l., 500l., 300l., and 200l. are offered for the competitive designs. Particulars from the Minister of Public Works, Wellington, New Zealand.

JULY 31.—IDEAL COUNTRY HOUSE.—100l. offered by the *Daily Mail*, Carmelite House, E.C., for designs for a country house, to cost from 3000l. to 1,100l. Mr. E. C. P. Monson, F.R.I.B.A., Mr. E. J. Sadgrove, F.R.I.B.A., and others assessors.

AUGUST 8. Egrement.—Premiums of 40l. and 10l. are offered by the Egrement U.D.C. for layout scheme. Particulars from the Town Surveyor, Egrement.

AUGUST 15.—Berne.—MONUMENT.—Designs for the erection of a monument at Berne to celebrate the foundation of the International Telegraph Union. Conditions may be seen in the library of the Royal Institute of British Architects.

SEPTEMBER 12-25.—Athens.—COURT OF JUSTICE.—An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 160,000l. The *Official Gazette* may be seen at the Library of the R.I.B.A.

SEPTEMBER 16.—Manchester.—LIBRARY AND ART GALLERIES.—Limited to ten selected competitors in the first competition. See issue of June 23, p. 730.

OCTOBER 30. Holland.—STAINED GLASS WINDOW.—Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. Marylebone.—NEW TOWN HALL. Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A.

NOVEMBER 1.—City of St. Petersburg.—MONUMENT TO ALEXANDER II.—Particulars in our issue of August 13, 1910.

DECEMBER 25.—Glasgow.—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 600l. and 300l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 31, 1912.—Australia.—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in this issue for further particulars.

NO DATE.—Nottingham.—BAPTIST CHURCH AND PREMISES.—Limited to Nottingham architects. Particulars from Messrs. Barks & Jackson, solicitors, King-street, Nottingham.

NO DATE.—Salford.—Extension of office accommodation on workhouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 8.—Bradford.—HOUSE.—Erection of a detached house in Heston-grove. Plans seen, and quantities from Mr. Jea. Ledingham, F.R.I.B.A., District Bank-chambers, Bradford.

JULY 8.—Elland.—HOUSE.—Erection of five houses. Plans and specifications with Mr. Fred F. Belmont, architect, Southgate-chambers, Halifax.

JULY 8.—Norfolk.—COTTAGE.—Erection at Terington. St. Clement of caretaker's cottage. Plan seen, and quantities on deposit of 1l. 1s. from Messrs. Walker & Walker, architects, 44, Market-place, Wisbech.

JULY 8.—Fossilpark.—LIBRARY.—Erection of library. Plans at the office of Mr. G. Simpson, architect, 229, St. Vincent-street, Glasgow. Specifications, on deposit of 1l. 1s. from the Office of Public Works, City-chambers, 64, Cochrane-street, Glasgow.

JULY 8.—Scarborough.—HOUSE, ETC.—Erection of a dwelling-house and outbuildings. Plans

and specifications seen, and information from Mr. R. S. Playlock, Estate Office, Seamer, S.O.

JULY 8.—Windsor.—PARTITION.—Erection of a wooden partition and other works at the cookery school. Specification and plans seen, and form of tender from the Borough Surveyor, 16, Almaroad, Windsor.

JULY 10.—Brighton.—PAVILIONS.—Erection of two pavilions on the Moulsecombe playing fields. Plans and specification with the Surveyors to the Committee, Messrs. T. Simpson & Son, 16, Ship-street, Brighton.

JULY 10.—Derby.—TOWER.—Erection of the lower portion of a bell tower at Smalley Church. Quantities from Messrs. Curry & Thompson, architects, 3, Market-place, Derby.

JULY 10.—Durham.—ADDITIONS, ETC.—Alterations, additions, etc., to the Workman's Union Club premises, Messrs. J. J. Ellingham, architect, Derwent-street, Blackhill.

JULY 10.—Truro.—ALTERATIONS.—For alterations at Mill House, Malpas-road. Specifications and drawings with Mr. Fredk. A. Barnes, Assoc. M.Inst.C.E., City Engineer and Surveyor, Municipal-buildings, Truro.

JULY 11.—Cheltenham.—BAKERY.—For remodelling bakery, erection of cooling-room, and extensions to grocery warehouse. Plans and specifications with Mr. T. Malvern, architect, 21, Wincombe-street, Cheltenham.

JULY 11.—Mansford.—CHURCH.—Erection of a church. Messrs. Connors & Chorley, architects, 16, Park-place, Leeds.

JULY 12.—Leeds.—OFFICES, ETC.—Conversion of stable buildings into offices and stores. Specification with Mr. J. H. Ford, Clerk, Poor Law Offices, South-parade, Leeds.

JULY 12.—Nuneaton.—ADDITIONS, ETC.—For additions to the engine-house and the enlargement of the pump well. Plans seen, and specification on deposit of 2l. 2s. from Mr. F. G. Cook, A.M.Inst.C.E., Borough Surveyor, Council Offices, Nuneaton.

JULY 12.—Poulton-le-Fylde.—WALL.—For the building of a retaining wall. Drawings and specifications seen, and quantities from the City Surveyor, Mr. J. B. Moss, Masonic-buildings, Poulton-le-Fylde. Deposit 10s. 6d.

JULY 12.—Seaton.—DWELLINGS.—Erection of five pairs of semi-detached dwellings. Plans and specifications with Messrs. Donald & Donald, architects, 14, Green-street, Worthington.

JULY 12.—Worlington.—RINKS, SCHOOLS.—Erection of a riding school. Messrs. W. G. Scott & Co., architects, 2, Park-lane, Worlington.

JULY 13.—Huddersfield.—SCHOOL, ETC.—Erection of a new school, boundary walls, drainage, and outbuildings at Woodhouse. Drawings seen, and quantities from Messrs. J. B. Abbey & Sons, architects and surveyors, 344, New-street, Huddersfield.

JULY 13.—Elland.—RECONSTRUCTION.—The reconstruction of the grocers' and butchers' departments at the Store. Plans and specifications seen, and quantities from Messrs. Clement Williams & Sons, architects, Post Office-buildings, Commercial-street, Halifax.

JULY 14.—Shipley.—EXTENSIONS, ETC.—Alterations and extensions at the public slaughter-house. Specifications and quantities from Mr. Wm. Illingworth, architect, Market-street, Bradford.

JULY 14.—Whitby.—ALTERATIONS, ETC.—Alterations and additions to the Workhouse. Plans and information from Mr. G. S. French, architect, Normandy-terrace.

JULY 15.—Aldridge.—EXTENSIONS.—Extensions to the Orphanage. Messrs. Jeffries & Shipley, architects, 24, Bridge-street, Walsall. Quantities on deposit of 1l. 1s.

JULY 15.—Lincs.—ADDITIONS.—Erection of a classroom and cloakroom at Lunston Council school. Plan and specification with the County Surveyor, Great Grimsby, Lincs.

JULY 17.—Athy.—HOUSES.—For the erection of twenty-one working-class houses. Plans and specifications by Mr. James E. Reade, A.M.Inst.C.E., the Council's Architect, 28, Barronstrand-street, Waterford.

JULY 17.—Croydon.—CONVENIENCE.—Erection of a convenience for men and women. Plans and specification seen, and quantities on deposit of 1l. 1s. from the Borough Engineer, Town Hall, Croydon.

JULY 18.—Bilton.—EXTENSIONS.—For extensions to the Townsley Hospitals. Plans seen, and quantities, on deposit of 5l., from Mr. J. Ward, architect, 24, Galesley-street, Bolton.

JULY 18.—Wills.—HOUSE.—The Great Western Railway invite tenders for the erection of a house at Highworth Station. Plans and specifications seen, and quantities from the Engineer at Bristol Station.

*** JULY 20. Acton Green.**—W.—SCHOOL.—The Acton Education Committee invite tenders for erection of a new school, to accommodate 580 scholars at Acton Green, W. See advertisement in this issue for further particulars.

JULY 20.—Leeds.—HOSTEL.—Erection of hostel for women students at the Training College, Headingley. Plans by Messrs Percy Robinson & W. Alban Jones, Albion-place, Leeds. Deposit of 2l. 2s.

JULY 20.—London.—BANDSTAND.—Supply and erection in Vauxhall Park of an ornamental iron bandstand. Particulars from Mr. Henry Cathcart, C.E.B., Borough Engineer, Lambeth Town Hall, Brixton-hill, S.W., London.

JULY 20. London.—REPAIRS, ETC.—For general repairs, improvements, and redecoration at the North Lambeth Library, Lower Marsh, and at the Durning Library, Kennington Cross. Specifications from Mr. Henry J. Smith, Town Clerk, Lambeth Town Hall, Brixton-hill, S.W.

JULY 21.—Rhonda.—SCHOOL.—Enlargement of the Alaw Council School, Treaslaw. Plans and specification seen, and quantities, on deposit of 2l. 2s. from the architect, Mr. Jacob Rees, Hillside Cottage, Pontre.

JULY 21. Southampton.—OFFICES, ETC.—For building Association offices and stores. Drawings, specification, and conditions seen, and quantities, on deposit of 3l. 3s. from the architect, Mr. R. H. P. Bevis, Elm-grove-chambers, Southsea.

JULY 22. Lisburn.—SCHOOLS.—Erection of school buildings. Plans and specifications seen and bill of quantities, on deposit of 1l. 1s. to the architect, Mr. James Hunter, Beechwood Lurn.

JULY 26.—Queenstown.—TOWER, ETC.—Completion of the tower and spire of St. Colman's Cathedral, Queensdown. Plans and specification with Messrs. Ashlin & Coleman, architects, 7, Dawson-street, Dublin. Quantities from Messrs. D. W. Morris & Co., surveyors, 68, Harcourt-street, Dublin.

*** JULY 27.—Southampton.**—ALTERATION IN SCHOOL.—The Southampton C.C. invite tenders for certain alterations and additions to schools within the county. See advertisement in this issue for further particulars.

NO DATE.—Exeter.—REPAIRS.—For the repair of certain parts of the wall and the erection of E. H. Harbottle, County-chambers, Queen-street, Exeter.

NO DATE. Mensingham.—CHURCH TAKING DOWN OF PRESENT CHURCH and the erection of new church. Drawings and specifications with Mr. J. Slack, M.S.A., architect, 18, Bank-street, Carlisle.

NO DATE.—King's Lynn.—PICTURE THEATRE.—Construction of picture theatre. Quantities, on deposit of 1l., from Mr. F. Burdett Ward, M.S.A., architect, 8, South-brink, Wokingham.

NO DATE.—Nottingham.—CLUB.—Erection of the Veterans' and Union Jack Club. Mr. A. Marshall, architect, King-street, Nottingham.

NO DATE.—Stamford Park.—HOUSE.—Erection and completion of superintendent's residence. Quantities from Messrs. Lindley & Gibson, architects and surveyors, Ashton-under-Lyne.

NO DATE. Walmer.—HALL.—Erection of parish hall. Walmer. Plans and specification seen, and particulars from the architect, Mr. C. L. Crowther, Queen-street, Deal.

ENGINEERING, IRON, AND STEEL.

JULY 10.—Leeds.—BRIDGE.—The North Eastern Railway invite tenders for the reconstruction of Brigsteade Bridge. Plans seen, and form of tender from Mr. H. J. Rudgard, the Company's District Engineer, Scarborough Bridge, York.

JULY 10.—Llandysilly.—HEATING.—For the installation of a hot-water heating apparatus to Llandysilly school. Rector, Llandysilly, Monmouthshire.

JULY 10. Porthcawl.—TANK.—Construction of a regulating tank at Craig-y-Aber reservoir. Messrs. John Taylor, Sons, & Santo Crimp, civil engineers, Caxton House, Westminster. Plan and specification seen, and form of tender, on deposit of 2l. 2s. from Mr. Wm. Chorley, Clerk, Council Offices, Porthcawl, Wales.

Billingham.—BRIDGE.—Widening of Billingham Race Bridge. Plans and specification seen, and quantities from Mr. William Crozier, A.M.Inst.C.E., the County Engineer, Shire Hall, Billingham.

JULY 17.—London.—STEEL DECKING.—Erection of steel decking over the "Dowson's Dock Subway, Narrow-street, Limehouse, Stepney. M.S.A., architect, and form of tender, on deposit of 5l., from the Borough Engineer, M.

ENGINEERING, etc.—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

M. W. Jameson, A.M.Inst.C.E., at the Municipal Offices, Great Alie-street, Whitechapel, E. July 17. **Salford, Boiler.**—Supply of one water-tube boiler, with superheater. Particulars from Borough Electrical Engineer, Electricity Works, Frederick-road, Pendleton.

July 17. **Barnes, Bridge.**—For rebuilding Rickford Mill Bridge. Drawings and specification seen at the County Surveyor's Office, Walls. Quantities on deposit of 2l. 2s.

July 25. **Manxwist, Reservoir.**—Construction of a reservoir. Plans and specifications seen, and quantities, on deposit of 2l. 2s., from the Engineer, Mr. E. Evans, 6, Castle-street, Carnarvon.

July 27. **Ipwich, Well.**—For sinking a 1041 diameter cast-iron lined well. Plans, specification, and schedule of prices, on deposit of 1l. 1s., from Mr. C. W. S. Oldham, Engineer, Ipswich Corporation Waterworks, Waterworks Office, Ipswich.

No Date. **Gilfach Coch, Sinking.**—For deepening trane pit. Particulars from the Brynllan Merthyr Coal Company, Ltd., General Office, Llanvyn-y-Waun.

No Date. **Salford, Heating.**—Additions to heating apparatus at West Liverpool-street Chapel-street, Salford.

FURNITURE, PAINTING, MATERIALS, etc.

July 10. **Kingston-on-Thames, Painting.**—For repairs and painting, etc., to the Union Office and the Central Home for Children. Mr. C. W. Dash, Clerk, Union Offices, Kingston-on-Thames.

July 10. **Macclesfield, Painting.**—Internal painting of the Municipal Offices, Town Hall. Specifications from Borough Engineer.

July 10. **Salford, Painting.**—External painting at the Infirmary, Vallance-road, Whitechapel, N.E. Specification from the Steward of the Infirmary, Mr. F. J. Toole, Clerk to the Chairman, Union Offices, 74, Vallance-road, N.E.

July 11. **London, E., Plastering Work.**—Borough Engineer, Town Hall, Barrow-in-Furness. For replastering No. 9 Bay of the Covered Market. Quantities from the Borough Engineer, Town Hall, Barrow-in-Furness.

July 12. **Beckenham, Painting, etc.**—Repairs and painting of the schools. Specifications, on deposit of 10s., from Mr. J. A. Angell, Surveyor, Council Offices, Beckenham.

July 12. **Richmond, Painting, etc.**—For painting and distemper at the Workmen's dwellings. Specification, on deposit of 10s. 6d., from the Borough Surveyor, Town Hall, Richmond.

July 12. **Cork, Painting.**—For painting at the South Charitable Infirmary and County Hospital, Cork. Specification by the architect, Mr. J. F. McMullen, and seen at the Hospital.

July 13. **Haverfordwest, Painting.**—For painting at the schools. Drawing and specification with the Architect, Mr. D. E. Thomas, 17, Victoria-place, Haverfordwest.

July 13. **Rhondda, Fencing.**—Supply of continuous unclimbable fencing. Particulars from Mr. Joseph Vevors, the Engineer, New Waterworks Engineer's Office, Treherbert, Rhondda.

July 14. **Hastings, Painting.**—For painting the Town Hall. Specification from the Borough Engineer, Mr. P. H. Palmer, Town Hall, Hastings.

July 14. **Yorkshire, Painting.**—For painting at the Ardley, Hoyle, Mr. Council School, Specifications from Mr. T. Graham, West Riding Education Office, Obelisk-chambers, Barnsley.

July 17. **Dewsbury, Wood Blocks.**—Supply and delivery of Jarrah wood paving blocks. Specification from the Borough Engineer.

July 17. **Hendon and London, Painting, etc.**—The Central London Sick Asylum District Board of Management invite tenders for painting, etc., at the Asylum in Cleveland-street, W., and Colindale-avenue, Hendon. See advertisement in this issue for further particulars.

July 17. **Ilkeston, Painting, etc.**—For cleaning, painting, etc., the Kensington Council School and the Chaucer-street Council School. Specifications at the office of Mr. W. Barton, Stratford-street, Ilkeston.

July 17. **Lancaster, Painting.**—For painting at the Williamson Park. Particulars from the Borough Surveyor.

July 17. **West Ham, Furniture.**—The West Ham Education Committee invite tenders for supply of school furniture. See advertisement in this issue for further particulars.

July 18. **Walthamstow, Fencing, etc.**—The Walthamstow Education Committee invite tenders for painting, colouring, etc., at the Chapel End Schools. See advertisement in this issue for further particulars.

July 19. **Bishop Auckland, Painting.**—For painting the Smallpox Hospital. Form from Mr. S. Adams, Clerk, Union Offices, Bishop Auckland.

July 19. **Brentwood, Painting.**—The Metropolitan Asylums Board invite tenders for cleaning and painting works at High Wood School. Specification by Mr. W. T. Hatch, M.Inst.C.E., M.L.Mech.E., Engineer-in-Chief. Specification and form of tender at the offices of the Board, Embankment, E.C. Deposit of 1l.

July 19. **Bury St. Edmunds, Painting.**—For painting at the Council schools. Specifications from the Building Inspector, Mr. A. Ainsworth Hunt, Shire Hall, Bury St. Edmunds.

July 20. **Lambeth, Decorator, Repairs, etc.**—The Lambeth B.C. invite tenders for general repairs, improvements, and redecoration at the North Lambeth Library. See advertisement in this issue for further particulars.

July 21. **Lowestoft, Painting, etc.**—For painting and repairing work in various schools. Specifications seen, and particulars from Mr. G. T. Knights, 44, Milton-road, Lowestoft.

ROADS, SANITARY AND WATER WORKS.

July 8. **Luton, Materials.**—For supply of materials. Particulars from Mr. B. B. Franklin, Surveyor, 21, Market-hill, Luton.

July 10. **Bishop's Stortford, Drainage.**—For laying new drains at the Workhouse. Plan seen, and specification and quantities at the Workhouse.

July 10. **Coventry, Sewerage.**—Extension of Haginton sewage farm. Specification and schedule of prices, on deposit of 2l. 2s., from Mr. J. E. Swindlehurst, M.Inst.C.E., City Engineer and Surveyor, Saint Mary's Hall.

July 10. **Devon, Sewer.**—Construction of a 6-in. sewer at St. George's Well, Collopington. Plans and specifications seen, and information from Mr. E. Ellis, Sanitary Inspector, Tiverton.

July 10. **Dublin, Paving.**—The Great Northern Railway Company (Ireland) invite tenders for the paving of the approach road to the goods' yard. Drawings and specification at the Chief Engineer's Office, Amiens-street Terminus, Dublin, and the District Engineer's Office, Belfast. Quantities and tender forms, on deposit of 2l. 2s., from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin.

July 10. **Inverberrie, Streets.**—For laying concrete footways in streets. Plans and specifications with Mr. A. Symon, Burgh Surveyor, 169, High-street, Montrose.

July 10. **Kingsbridge, Materials.**—For the supply of materials. Mr. W. Beer, Clerk, Kingsbridge.

July 10. **Leeds, Streets.**—For paving and flagging of private streets. Drawings at the City Engineer's Office, Municipal Buildings. Quantities at the Highways Office, 155, Kirkstall-road, Leeds.

July 10. **London, Sewer.**—The Borough of St. Pancras invites tenders for the construction of brick sewer in Charlotte-street and Goudge-street. Specification, on deposit of 1l. 1s., from the Borough Engineer, Town Hall, Pancras-road, N.W.

July 10. **Welshpool, Roads.**—For various road works. Specifications from Mr. C. Pryce Yearsley, Town Clerk, Welshpool.

July 11. **Poole, Streets.**—For sewerage Buckingham and Pembroke roads. Particulars from the Borough Surveyor, Mr. S. Newman, F.R.I.B.A., Market-street, Poole.

July 11. **South Mimms, Materials.**—For supply of granite, etc. Particulars from the Surveyor, Putters Bar, Barnet.

July 12. **Goolle, Paving.**—For the paving of the inclined approaches to the new West Dock Bridge. Specification, forms of tender, etc., on deposit of 1l. 1s., from Mr. C. G. Bradley, Engineer and Surveyor, Goolle.

July 12. **Morley, Paving.**—For repaving streets. Specification and quantities from Mr. W. E. Putman, Borough Engineer, Town Hall, Morley.

July 13. **Isleworth, Sewers.**—Construction of surface-water sewers. Plans and specification seen, and quantities, on deposit of 1l. 1s., from Mr. J. G. Carey, Engineer and Surveyor to the Council, Council House, Hounslow.

July 14. **Doncaster, Water Mains.**—For laying of water mains in Conisburgh. Particulars from Mr. W. B. Crabtree, Surveyor, Union Offices, Doncaster.

July 14. **West Bridgford, Sewerage.**—Extension of sewage purification works. Specifications, schedules, and forms of tender from Mr. Wm. Pare, C.E., Engineer and Surveyor, Public Offices, West Bridgford, Nottingham.

July 17. **Guisborough, Drainage.**—Laying a 3-in. cast-iron water main. Specifications with Mr. H. D. Woodcock, Surveyor, 99, Westgate, Guisborough.

July 17. **Penrith, Water Supply.**—For supplying and laying cast-iron piping, with valves, hydrants, etc., for the Plumpton Wall water supply. Plans and specification by Mr. J. Graham, Engineer, 28, Castle-street, Carlisle.

July 18. **Crews, Sewage.**—Construction of outfall sewers, etc. Plans, sections, and specifications with Mr. G. Eaton-Shore, Borough Surveyor, Earle-street, Crews. Deposit of 2l.

July 19. **Axmouth, Road.**—For road improvement works. Plans, specification, and quantities, on deposit of 2l. 2s., from the Surveyor, Mr. G. A. Millard.

July 20. **Wellington, Saloon, Sewerage.**—For the laying and jointing of cast-iron pipe sewers. Drawings and specifications seen, and quantities, on deposit of 3l. 3s., from the engineers, Messrs. Wilcox, Raikes, & Reed, 63, Temple-row, Birmingham.

July 24. **Churchdown, Gils, Sewage, etc.**—Construction of tanks, filters, &c., for the sewage disposal outfall works. Plans seen, and specification and quantities, on deposit of 3l. 3s., from Mr. Henry J. Weaver, M.Inst.C.E., M.L.Mech.E., F.G.S., consulting engineer, Northgate-mansions, Gloucester.

July 24. **Sunbury-on-Thames, Material.**—Supply of materials. Particulars from Mr. H. F. Coles, Surveyor to the Council, Council Offices, Sunbury-on-Thames.

July 28. **Stroud, Sewage.**—Laying of about 31 miles of sewers, the construction of purification works, and the laying of cast-iron effluent outfall pipe. Drawings and specifications seen, and forms of tender from Mr. Arthur J. Martin, M.Inst.C.E., F.G.S., 7, Victoria-street, Westminster, on deposit of 3l. 3s.

AUGUST 1. **Markyate, Herts, Sewage.**—For sewerage and sewage disposal works. Plans and specifications seen, and quantities, on deposit of 2l. 2s., from the engineers, Messrs. Elliott & Brown, Burton-buildings, Parliament-street, Nottingham.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
CLERK OF WORKS	Yancashire Asylums Board	47. 4s. per week	July 12
ASSISTANT CLERK OF WORKS	Walesian Education Com.	3l. 3s. per week	July 15

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
STK. OF SLATE, TILE, & MARBLE MERCHANT—At Stanlake Villas, Tunbridge Wells, E.C.	H. W. Smith	July 11
DEALS, BATTENS, BOARDS, TIMBER, Etc.—Great Hall, Winchester House, E.C.	Churchill & Sons	July 12
Building Land, Surrey—At 20, Haverford-square, W.	Fryett, White, & Co.	July 12
Building Site, City, At the Mart	Knight, Frank, & Rutley	July 14
FREEHOLD LAND, ROMFORD—At the Mart	A. Savill & Sons	July 14
FREEHOLD PROPERTIES, HORSHAM—King's Head Hotel, Horsham	A. Savill & Sons	July 17
THE LEGGATTS ESTATE, POTTERS BAR—At the Mart	King & Chasmore	July 17
FREEHOLD BUILDING PLOTS, CHISWICK—At the Mart	John D. Wood & Co.	July 18
FREEHOLD LAND, HAMMERSMITH—At the Mart	Tray, Greenwood, & Co.	July 21
FREEHOLD BUILDING SITE, WHITECHAPEL—At the Mart	Jones, Lang, & Co.	July 24
	Fox & Bousfield	July 26
	Farebrother, Ellis, & Co.	July 27

RECENT SALES—Continued from page 25.

By DEENHAM, TEWSON, RICHARDSON, & Co.
Mendon. Langley Park, f.g. rents 180l. 19s.
reversion in 25 yrs. 44,325
Beckenham—12, Bromley-rd., f.g. 100l. 2,000

By A. M. ROBINSON & SON.
Steeple Morden, Cambs.—Fairview House, f.g. 375

By CHAS. P. WHITELEY & SON.
Fulham. Vero-rd., plot of land, f.g. 220
Vero-rd., f.g. rents 40l. reversion in 25 yrs. 840

By MAY & ROWDEN.
Flecedale—Nos. 45 and 46, f.g. rents 400l.
reversion in 25 yrs. 20,000

By C. C. T. MOORE.
Hackney. 14 and 16, Elsdale-st., ut. 36 yrs.,
g.r. 10l. w.r. 7l. 230

Stratford—58, 40, and 42, Albert-sq., f.w.r. 74l.
29 and 31, Trevelyan-rd., f.w.r. 32l.
St. George's East—1 to 4, Matilda-st., f.w.r.
104l. 330

By NEWBORN & SHEPHERDS.
Finchley—The Broadway, f.g. rents 39l., reversion
in 72 yrs. 780

Hornsey—Rectory-rd., f.g. rents 66l., reversion
in 58 yrs. 1,450

Hampstead—9, Parliament hill, ut. 66 yrs.,
g.r. 6l. p. 500

Harmway. 34 and 36, Park-rd., f.w.r. 62l. 8s.
Caledonian-road. No. 37 (s.), ut. 314 yrs., g.r.
8l. y.r. 30l. 350

Lepton—5 to 15 (odd), Park-rd., ut. 35 yrs.,
g.r. 14l. w.r. 130l. 480

By STILSON & SONS.
Dromley—London-rd., f.g. 16l., reversion in
(3 yrs. 255

Willesden. Vicarage-rd., f.g. rents 12l., reversion
in 70 yrs. 315

Harmond. f.g. of reversion in 70 yrs.
Stockwell. 158, Stockwell Park-rd., ut.
314 yrs., g.r. 2l. p. 120

Peckham—35, Albert-rd., f.g. 40l.
Commercial rd., f.g. rents 19l., reversion in
17 and 19 yrs. 205

Great Missenden, Bucks. Royal Oak h.h., f.g.
y.r. 15l. 430

Old Kent-rd. Nos. 738, 739, 744 and 746, f.g.
y. and y.r. 194l. 48l. 1,220

Suffolk Arms, h.h., f.y.r. 50l. 750

No. 774 (s.), f.y.r. 30l. 325

1 and 3, Asylum-rd. (s.), f.w.r. 39l. 320

1 to 21, 27 to 37 (odd), Asylum-rd., f.w.r.
380l. 15l. 2,965

Back-ls., cottage and plot of land, f.g.
Islington—Rhindol-rd., f.g. 3l. 15s., reversion
in 5 yrs. 430

By GRIMLEY & SON.
Rock, Wores—Barrett's Farm, 120 a. 1 r. 19 p.,
f. 2,065

Olton, Warwick—St. Bernard's-rd., Willow
Grange, f. 2,275

Appletree, Northants. Four enclosures of
pasture land, 64 a. 1 r. 3 p. 770

By HAVRY HENDRICK & CO.
Marbury, Warwick—Bull Ring Farm, 102 a.
0 r. 8 p., f. 1,600

By HORT. NEWMAN.
Uxbridge, Midd.—5 to 8, Basset-rd., f.w.r.
104l. 1,100

By JAMES ELLY.
Coningsby, Lincs. Three farms, 234 acres, also
White Swan Inn, f. 8,125

June 16.—By W. B. HALLER.
Wimbleton—49 and 56, Kenilworth-av., ut. 90
yrs., g.r. 24l. y.r. 48l. and p. 555

By HALL & NEWMAN.
East Ham. Skiffington-rd., f.g. rents 20l.,
reversion in 84 yrs. 495

Islington—1 to 9 (odd), Cardale-st., ut. 384
yrs., g.r. 21l. w.r. 145l. 17s. 275

By LOWE, GOLDSCHMIDT, & HOWLAND.
Hampstead—57, Fitzjohns-rd., ut. 64 yrs., g.r. 20l.,
y.r. 10l. 1,050

By MULLETT, BOOKER, & CO.
Hyde Park—4, Southwick-cres. and stabling,
ut. 252 yrs. g.r. 22l. p. 1,420

By E. & S. SMITH.
Muswell Hill—Sutton-rd., Oswestry and Mona
Ville, f.y. 60l. 700

Regent's Park, 19, Osamburgh-st., ut. 114 yrs.,
g.r. 20l. y.r. 80l. 700

By STANLEY PARKER & BROWN.
Enfield. The Ridgeway, Dunstable, ut. 67 yrs.,
g.r. 9l. 10s. p. 280

By W. WILKINSON.
Camden Town—Rochester-ter., f.g. 17l. 10s.,
ut. 33 yrs., g.r. nil. 190

Poplar. 60 & 63, Seabrook-st., and 59 & 61,
Arcadia-st., ut. 42 yrs., g.r. 13l. 1s. 4d., w.r. 104l.
104l. 190

Poplar—122 and 124, East India Dock-rd., f.g. 2l. 10s.,
ut. 11 yrs., g.r. 8l. 10s., y.r. 50l. 115

Stoke Newington—74, Buckingham-rd., ut. 65
yrs., g.r. 9l. w.r. 41l. 12s. 115

By P. W. CLEAVE.
Bromley-by-Bow—8 and 10, Sheppard-st., f.
w.r. 83l. 6s. 340

107, 109, and 120, Campbell-rd., ut. 51 yrs.,
g.r. 10l. 8s. 8d., w.r. 101l. 12s. 500

12, 18, 20, 25, and 27, Chiltern-rd., ut. 51 yrs.,
g.r. 17l. 10s., w.r. 170l. 10s. 985

81 to 87 (odd), Devons-rd., ut. 25 yrs., g.r. 10l.
w.r. 130l. 4s. 360

30 to 39 (even), Fairfoot-rd., ut. 51 yrs., g.r. 10l.
w.r. 140l. 8s. 600

1 to 13 to 57 (odd), 68, 70, 90, 101, and 103,
Knapp-rd., ut. 51 yrs., g.r. 22l. 10s., w.r. 531l. 14s.
62, 64, and 66, Bounton-rd., ut. 51 yrs.,
g.r. 12l. w.r. 105l. 6s. 545

27 to 37, 39 to 101 (odd), Swanton-rd., ut. 51
yrs., g.r. 32l. w.r. 341l. 18s. 1,510

7 to 18 (odd), Spanby-rd., ut. 51 yrs., g.r. 14l.
w.r. 131l. 6s. 405

114, Ford—13a, 14a, and 15, Mayerton-rd., ut. 48 yrs.,
g.r. 10l. 10s., w.r. 86l. 4s. 495

By KINGSTONS & HOLDSWORTH.
Sutton St. Edmunds, Lincs. Three farms,
397 a. 0 r. 25 p., f. 612,470

By DYER, SON, & HILTON.
Lee—11, Belmont Park, ut. 41 yrs., g.r. 2l. p. 400

By HEPNER & SONS.
Kilnsey, Yorks.—Kilnsey Estate, 3,226 a. 0 r.
8 p., f. and l. 31,000

June 17. FERRIS & PICKERING.
Stretham, Cambs. Graugers Farm, 1 a. 1 r.
23 p., f. 600

Accommodation land, 84 a. 1 r. 7 p., f. 2,740

Accommodation land, 6 a. 3 r. 5 p., f. and c.
Waterbeach, Cambs. Small holding and
enclosures, 48 a. 3 r. 5 p., f. 1,830

Hartley, Cambs. Farm and enclosure, 13 a.
3 r. 24 p., c. 940

Cambridge—13 and 15, Hinton-rd., ut. 929
yrs., g.r. nil, gross rental 24l. 12s. 235

Pottery, Beds.—King-st., two houses and plot
of land, c. 490

June 18.—By DEASON & LESLIE.
Halesden—78, 80, and 82, Buckingham-rd.,
ut. 71 yrs., g.r. 15l. w.r. 109l. 4s. 600

By PEAT & HOLDSWORTH.
Nutfield, Surrey. Church Hill, Dolve Cottage
and premises adjoining, f. with good mill. 800

June 20.—By DEENHAM, STONE, & SONS.
Deptford—Church-st., f.g. rents 30l., reversion
in 70 yrs. 490

June 28. By ROGERS BROS.
Peckham—29, Bark-rd., ut. 23 yrs., g.r. 4l.
10s., w.r. 31l. 4s. 155

32, Lavanor-rd., ut. 65 yrs., g.r. 5l. w.r. 39l.
250

June 28.—By CHARLES SPARROW & SON,
Friern Barnet—Oakleigh-rd., f. with good mill, 1,800

By ROY. NEWMAN.
Hounslow, Midd.—2, 4, 6, and 8, Chapel-rd.,
f.w.r. 55l. 16s. 800

4 and 6, Ivy-st., f.w.r. 52l. Buckingham-rd.,
ut. 71 yrs., g.r. 15l. w.r. 109l. 4s. 400

June 30. By THURGOOD & MARTIN.
East Shefford, Berks. East Shefford Estate,
633 a. f. 6,800

Covent Garden—30, Wellington-st. (s.), f.y. r.
135l. 4,400

By MARK LUELL & SON.
Mile End—11 and 21, Graton-st., ut. 31 yrs.,
g.r. 9l. y.r. 25l. 455

By GORING & GORING.
Beckenham. 54, Clock House-rd., ut. 81 yrs.,
g.r. 7l. 10s., c.r. 36l. 310

By ELLIOTT, TOMES, & CO.
Edgware—No. 89 (s.), ut. 61 yrs., g.r. 12l. 12s.,
y.r. 131l. 13s. 340

By EDGAR WOOD.
Brookley. 28, Harefield-rd., ut. 61 yrs., g.r. 11l.,
c.r. 50l. 530

Contractions used in these lists.—P.g.r. for freehold
ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for
improved ground-rent; g.r. for ground-rent; p. for rent;
f. for freehold; c. for copyhold; l. for leasehold; p. for
possession; s.r. for estimated rental; w.r. for weekly
rental; q.r. for quarterly rental; y.r. for yearly; g.r. for
gross; n.r. for net; p.a. for per annum; y.s. for
years; la. for lease; st. for street; rd. for road; sq. for
square; pl. for place; ter. for terrace; cres. for crescent;
av. for avenue; gln. for garden; yd. for yard; gr. for
grove; h.h. for house; p.h. for public-house; o. for
office; s. for shops; c. for court.

PUBLISHER'S NOTICES.

Nat. Tel. 612 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME C (January
to December 1911) will be published at a supplement with
the issue of July 14.

CLOTH CASES for Binding the Numbers are now ready, price
2s. 6d. each; also
READING CASES (with Strips, price 1d. each.
THE HUNDRED-FOLD VOLUMES (bound in
boards, price Twelve Shillings and Sixpence, will be ready
in 10 days.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be
bound at a cost of 5s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIVE TENDERS, CONTRACTS, AND NOTICES ISSUED BY
CORPORATE BODIES, COUNTY AND OTHER COUNCILS,
PROPRIETORS OF PUBLIC COMPANIES, SALES BY
TENDER, LEGAL ANNOUNCEMENTS, &c. &c.

Six lines or under 6s. 0d.
Each additional line 1s. 0d.

SITUATIONS, TRADE, PARTNERSHIPS, APPRENTICESHIP,
SHIPS, VACANT AND GENERAL ADVERTISEMENTS.
Six lines (about fifty words) or under 6s. 0d.
Each additional line (about ten words) 1s. 0d.

Terms for series of Trade notices, and for front page
and other special positions, on application to the Publisher.
SITUATIONS WANTED (single handed—Labour only).
Four lines (about thirty words) or under 2s. 6d.
Each additional line (about ten words) 1s. 0d.

PREPARATION IS ABSOLUTELY NECESSARY.
* Stamps need not be sent; but all sums should be remitted by
Postal Order, payable to J. MORRIS, and addressed to the
Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up
to 3.30 p.m. on THURSDAY, but "Cash-in-advance" is impossible
in the case of any which may reach the Office after TWELVE
NOON on that day. For the convenience of the Trade Wrapper
should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS OR
ORDERS TO DISCONTINUE, same must reach the Office before
TELEPHONE on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTI-
MONIALS, &c., left at the Office in reply to advertisements, and
strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISEMENTS IN "THE BUILDER" may have Replies
addressed to the Office, 4, Catherine Street, Strand, W.C., free of
charge. Letters will be forwarded if addressed (and space are
sent, together with sufficient stamps to cover the postage. Unsent
stamps will be returned.

N.B.—The Reply Boxes are not intended for trade notices,
circulation and the like, should these be received, they cannot (if
noticed) be forwarded.

AN EDITION PRINTED ON THIN PAPER, for FOREIGN AND
COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH.
By post (and duty paid), 1s.

PRICES CURRENT OF MATERIALS.

* * * Our aim in this list is to give, as far as possible, the
average prices of materials, not necessarily the lowest.
Quality and quantity obviously affect prices—a fact
which should be remembered by those who make use of
this information.

BRICKS, &c.

Per 1000 Alongside, in River. £ s. d.
Best Stock 1 13 0
Picked Stock for Facings 2 7 0

Per 1000, Delivered at Railway Depot. £ s. d.
Flettons 1 9 0
Best White and 3 12 0

Best Red 3 12 0
Best Red Pressed 5 0 0
Best Blue Pressed 5 0 0

Best Blue Pressed 5 0 0
Staffordshire 3 15 0
Do. Balloness 4 0 0

Best Staffordshire 3 15 0
Fire Bricks 3 14 0
Glazed Bricks 3 14 0

Best White and 3 14 0
Ivory Glazed 3 14 0
Stretchers 10 17 6

Stretchers 10 17 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

Double Headers 13 7 6
Double Headers 13 7 6
Double Headers 13 7 6

WOOD (Continued).

BUILDING WOOD (Continued).	At per standard.	£ s. d.	£ s. d.
Battens: best 24 in. by 7 in. and 8 in.	11 0 0	12 10 0	12 10 0
8 in. and 3 in. by 7 in. and 8 in.	11 0 0	12 10 0	12 10 0
Battens: best 24 by 6 and 3 by 6.	10 0 0	11 0 0	11 0 0
7 in. and 8 in.	10 0 0	11 0 0	11 0 0
Deals: seconds	1 0 0	less than	1 0 0
Battens: seconds	0 10 0	0 10 0	0 10 0
2 in. by 11 in. and 2 in. by 9 in.	0 10 0	10 10 0	10 10 0
3 in. by 11 in. and 2 in. by 9 in.	0 10 0	10 10 0	10 10 0
Foreign Sawed Boards—	0 10 0	more than	0 10 0
1 in. and 14 in. by 7 in.	0 10 0	more than	0 10 0
1 in.	1 0 0	more than	1 0 0
At per load of 50 ft.	5 0 0	5 10 0	5 10 0
Second	4 10 0	5 0 0	5 0 0
Small timber (8 in. to 10 in.)	3 10 0	4 0 0	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	3 10 0	3 10 0
Swedish larks	3 10 0	3 10 0	3 10 0
Pitch-pine timber (30 ft. average)	4 10 0	5 0 0	5 0 0

JOINERS' WOOD.

At per standard.	£ s. d.	£ s. d.
White Sea: first yellow deals,	24 10 0	25 10 0
3 in. by 11 in.	22 10 0	23 10 0
3 in. by 9 in.	17 0 0	18 0 0
Battens: first and 3 in. by 7 in.	19 0 0	20 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0	20 0 0
3 in. by 9 in.	18 0 0	19 10 0
Battens: 24 in. and 3 in. by 7 in.	14 0 0	15 0 0
Third yellow deals, 3 in. by 11 in.	14 0 0	15 0 0
3 in. by 9 in.	11 10 0	12 10 0
Battens: 24 in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg yellow deals,	21 0 0	22 10 0
3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 10 0	19 10 0
Battens	14 0 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do. 3 in. by 9 in.	12 10 0	13 10 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do. 3 in. by 9 in.	10 10 0	11 10 0
Battens	10 10 0	11 10 0

White Sea and Petersburg—	15 0 0	16 0 0
First white deals, 3 in. by 11 in.	15 0 0	16 0 0
3 in. by 9 in.	12 10 0	13 10 0
Battens	11 10 0	12 10 0
Second white deals, 3 in. by 11 in.	14 0 0	15 0 0
3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
Pitch-pine: deals	19 0 0	20 0 0
Under 2 in. thick extra.	0 10 0	1 0 0
Yellow Pine: first, regular sizes	44 0 0	45 0 0
Under 2 in. thick extra.	32 0 0	33 0 0
Second, regular sizes	33 0 0	34 0 0
Under 2 in. thick extra.	28 0 0	29 0 0
Odmonds	3 0 0	4 0 0
Kauri Pine—Planks per ft. cube.	0 3 6	0 5 0
Danzig and Stettin Oak Logs—	0 3 0	0 3 9
Large, per ft. cube.	0 2 6	0 2 6
Small	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. cube	0 0 8 1/2	0 0 9 1/2
1 in. do.	0 0 7 1/2	0 0 8 1/2
Dry Mahogany—Honduras, Ta-	0 0 10 0	0 1 1
basco, per ft. super. as inch.	0 1 6	0 2 6
Selected, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft.	0 10 0	0 1 0
super. as inch	0 10 0	0 1 0
Teak, per load	18 0 0	22 0 0
American Whitewood planks,	0 4 0	0 5 0
per ft. cube	0 4 0	0 5 0

Per square.	£ s. d.	£ s. d.
Prepared Flooring, etc.	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and	0 13 6	0 17 0
shot	0 14 0	0 18 0
1 in. by 7 in. yellow, planed and	0 14 0	0 18 0
matched	0 16 0	0 20 0
1 in. by 7 in. yellow, planed and	0 16 0	0 20 0
matched	0 12 0	0 14 6
1 in. by 7 in. white, planed and	0 12 6	0 15 0
matched	0 12 6	0 15 0
1 in. by 7 in. white, planed and	0 15 0	0 18 6
matched	0 11 0	0 13 6
1 in. by 7 in. white, planed and	0 14 0	0 18 6
matched	0 10 0	0 11 0
1 in. by 7 in. white, planed and	0 12 6	0 15 0
matched	0 11 0	0 13 6
6 in. at 64, to 9d, per square less than 7 in.	0 10 0	0 11 0

JOISTS, GIRDES, &c.

In London, or delivered.	£ s. d.	£ s. d.
Rollad Steel Joists, ordinary	7 0 0	7 10 0
sections	7 0 0	7 10 0
Compound Girders, ordinary	9 0 0	10 0 0
sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordi-	9 0 0	10 0 0
nary sections	9 0 0	10 0 0
Filch Plates	9 0 0	9 10 0
Cast Iron Columns & Stanchions,	7 10 0	8 10 0
including ordinary patterns	7 10 0	8 10 0

METALS.

Per ton, in London.	£ s. d.	£ s. d.
Iron—	8 10 0	9 0 0
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good	8 10 0	9 0 0
merchant quality	8 10 0	9 0 0
Staffordshire "Marked Bars"	10 10 0	11 0 0
Mild Steel Bars	8 10 0	9 0 0
Hoop Iron, basis price	9 5 0	10 0 0
Galvanised	17 0 0	18 0 0
(And upwards, according to size and gauge.)	17 0 0	18 0 0

Sheet Iron Black—	9 15 0	10 0 0
Ordinary sizes to 20 g.	9 15 0	10 0 0
" " 24 g.	10 15 0	11 0 0
" " 30 g.	11 5 0	12 0 0
Sheet Iron, Galvanised, flat, ordinary quality—	12 5 0	13 0 0
Ordinary sizes, 6 ft. by 2 ft. to	12 5 0	13 0 0
3 ft. to 20 g.	15 0 0	16 0 0
Ordinary sizes to 22 g. and 24 g.	15 0 0	16 0 0
" " 26 g. and 28 g.	16 0 0	17 0 0
Sheet Iron, Galvanised, flat, best quality—	18 0 0	19 0 0
Ordinary sizes to 20 g.	18 0 0	19 0 0
" " 22 g. and 24 g.	19 0 0	20 0 0
" " 26 g. and 28 g.	20 0 0	21 0 0

METALS (Continued).

IRON (Continued)—	Per ton, in London.	£ s. d.	£ s. d.
Galvanised Corrugated Sheets—	£ s. d.	£ s. d.	£ s. d.
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	15 0 0	15 0 0
" " 22 g. and 24 g.	14 15 0	15 0 0	15 0 0
" " 26 g. and 28 g.	15 0 0	16 0 0	16 0 0
Best Soft Steel Sheets, 6 ft. by 2 ft.	12 0 0	13 0 0	13 0 0
to 3 ft. to 20 g. and thicker.	12 0 0	13 0 0	13 0 0
Best Soft Steel Sheets, 2 g. & 24 g.	15 0 0	16 0 0	16 0 0
" " 26 g. and 28 g.	15 0 0	16 0 0	16 0 0
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0	11 0 0
(Under 3 in., usual trade extra.)	10 10 0	11 0 0	11 0 0

LEAD, &c.

LEAD—Sheet, English, 4 lb. and up	£ s. d.	£ s. d.
Pipe in coils	17 5 0	18 0 0
Soil pipe	20 5 0	21 0 0
Compo pipe	20 5 0	21 0 0
Zinc—Sheet—	31 10 0	32 0 0
Ville Montague	31 10 0	32 0 0
Silesian	31 0 0	32 0 0
Zinc, in bundles, 1s. per cwt. extra.	31 0 0	32 0 0

COPPER—					
Strong Sheet	.....per lb.	0	1	0	—
Thin	.....	0	1	1	—
Copper nails	.....	0	0	10	—
Copper wire	.....	0	0	10	—
BRASS—					
Strong Sheet	.....	0	0	11	—
Thin	.....	0	1	0	—
Tri—English Ingots	.....	0	1	11	—
SOLDER—Plumbers'	.....	0	0	8½	—
Timen's	.....	0	0	11	—
Blowpipe	.....	0	1	2	—

ENGLISH SHEET GLASS IN CRATES OF

STOCK SIZES.	Per Ft. Delivered.	£ s. d.	£ s. d.
15 oz. thirds	24d.	26 oz. fourths	34d.
" " fourths	14d.	32 oz. thirds	34d.
21 " thirds	3 0 0	34 " fourths	44d.
" " fourths	24d.	32 oz. thirds	34d.
23 oz. thirds	44d.	" " 21 oz. 44d.	

ENGLISH ROLLED PLATE IN CRATES OF

STOCK SIZES.	Per Ft. Delivered.	£ s. d.	£ s. d.
Hartley's	2d.	Figured Rolled, Ox-	
" " 24d.	2d.	ford Rolled, Ox-	
" " 24d.	2d.	and Arctic, Muffled,	
" " 24d.	2d.	and Rolled Cathe-	
" " 24d.	2d.	dral, white.	34d.
" " 24d.	2d.	Ditto, tinted.	3d.

* Not less than three crates.

OILS, &c.

OILS, &c.	Per gallon.	£ s. d.	£ s. d.
Kaw Linsed Oil in pipes	per gallon	0 3 7	0 3 7
" " in barrels	"	0 3 10	0 3 10
" " in drums	"	0 3 10	0 3 10
Boiled	"	0 4 1	0 4 1
" " in drums	"	0 3 5	0 3 5
Turpentine	"	0 3 7	0 3 7
" " in drums	"	0 3 7	0 3 7
Genuine Ground English White Lead, per ton	21 10 0	21 10 0	21 10 0
Red Lead, per ton	30 0 0	30 0 0	30 0 0
Best Linsed Oil Fatly	per cwt.	0 11 0	0 11 0
Stockholm Tar	per barrel	1 12 0	1 12 0

VARNISHES, &c.

VARNISHES, &c.	Per gallon.	£ s. d.	£ s. d.
Fine Pale Oak Varnish	£ s. d.	0 8 0	0 8 0
Pale Copal Oak	"	0 10 6	0 10 6
Superfine Pale Elastic Oak	"	0 12 6	0 12 6
Fine Extra Hard Church Oak	"	0 12 6	0 12 6
Superfine Hard-drying Oak, for seats of	"	0 14 6	0 14 6
Churches	"	0 14 6	0 14 6
Fine Elastic Carriage	"	0 15 0	0 15 0
Superfine Pale Elastic Carriage	"	0 15 0	0 15 0
Fine Pale Maple	"	0 15 0	0 15 0
Finest Pale Durable Copal	"	0 15 0	0 15 0
Extra Pale French Oil	"	1 0 0	1 0 0
Eggshell Flating Varnish	"	0 15 0	0 15 0
White Pale Kannel	"	1 4 0	1 4 0
Fine Pale Paper	"	0 12 0	0 12 0
Best Japan Gold Size	"	0 10 6	0 10 6
Best Black Japan	"	0 16 0	0 16 0
Oak and Mahogany Stain	"	0 9 0	0 9 0
Brunswick Black	"	0 16 0	0 16 0
Berlin Black	"	0 16 0	0 16 0
Knottling	"	0 10 9	0 10 9
French and Brush Polish	"	0 10 6	0 10 6

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors. We cannot undertake to return rejected communications, and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them, for publication or not. No notice can be taken of anonymous communications.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Tuesday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

ALPERTON (Wembley).—For alterations and additions to the Alperton Council School, for the Middlesex County Council, Mr. H. G. Crothall, Architect to the Education Committee.—
J. Stewart £10,988 Rowley Bros. £10,100
A. Monk 10,940 W. Lawrence & Son 10,062
G. Bollow 10,983 H. Knight & Son 9,977
Tribb & Co., Ltd. 10,520 Brand, Pettit, & Co. 9,936
W. J. Dickens 10,480 Mattock Bros. 9,327
G. Neal 10,331 W. Lacey 9,747

† Recommended for acceptance.

COUNTERTHORPE.—For enlargement of Council school for the Leicestershire County Council Education Committee, Mr. Ernest G. Fowler, architect and surveyor.—
F. Sleath £275 0 0 E. Fox £783 0 0
Haycock Bros 863 3 0 Chiffham & Co. 780 0 0
J. Chapman 814 0 0 W. Potter, Blaby, 780 0 0
J. A. Chapman 835 13 0 Leicester* 789 12 6
W. M. Sharp 814 10 0

DEVON.—For erection of a bullocks' house and stable at Coonagry Farm. Mr. W. F. Tollis, architect and surveyor, Totnes.—
Mason work: J. Tarry, Tuckenhay, Totnes* £132 16
Carpeting, etc.: R. Pozar & Son, Totnes

ELDON.—For church hall and Sunday school premises. Mr. W. A. Kellest, architect, Bishop Auckland.—
W. Hope & Son, Coundon* £1,003
[Part trades only.]

GUILDFORD.—For alterations to 39, High street, Guildford. Messrs. Rake & Cogswell, architects, Prudential buildings, Portsmouth.—
Kiplott & Hammond £279 R. Smith £438
Martin, Wells 650 Bellmore 539
A. Jones 612 Bullen 516
Lay & Co. 574 Tribe & Robinson 510
J. Ramsbottom 550 Johnson, Guildford* 505
F. Pownall 547

HETTON-LE-HOLE.—For alteration of the Colliery Inn, Boldon Colliery. Mr. B. S. W. Gilbertson, architect, 73, Four-lane Ends, Hetton-le-Hole.—
J. Bainbridge, South Market-street, Hetton-le-Hole £264

HIGHWORTH.—For erection of a house, Swindon-street, for Miss Higgs. Messrs. Drew & Sons, architects, Regent-circus, Swindon.—
J. S. King, Lechlade* £280

IPSWICH.—For erection of a sanatorium as a memorial to the late King Edward VII., for the Borough of Ipswich. Mr. H. M. Cantley, architect, 32, Museum-street, Ipswich. Quantities by Mr. E. J. Gilling, Felixstowe.—
C. A. Green £10,250 P. J. Turner £9,992
C. Roper 10,248 T. Ward & Son 9,938
Grinwood & Sons 10,243 S. A. Kenney 9,979
Cahill & Gots 10,100 Catchpole & Sons, 9,936
F. Bennett 10,060 Ipswich*

LANGLEY GREEN.—For the erection of a house at Bloxidge-street, Langley Green, Worcester, for Mr. Alex. Comley, Mr. Abel Rowland, architect, 1, Newhall-street, Birmingham.—
J. Dallow & Sons £285 G. H. Marshall, W. W. Lees 630 Smetthwick* £587
W. Jackson 610

LECHLADE.—For making alterations and additions to the Sherbourne Arms, for Messrs. T. & J. Arkell. Messrs. Drew & Sons, architects, Regent-circus, Swindon.—
J. S. King, Lechlade* £194

LONDON.—For erection of extension to the South-Western Polytechnic Institute, Chelsea, for the Governing Body. Mr. F. G. Knight, architect, 13, Victoria-street, Westminster, S.W. Quantities by Mr. Fredk. R. Smith, 13, Victoria-street, Westminster, S.W.—
King & Son £14,769 Holloway £13,350
Pasterfield & Fryer 13,300
English 14,498 Lole & Co. 14,247
Bendon 14,469 Gullerth 13,160
Fletcher 14,141 Smith & Sons 13,100
Thomas & Edge 13,681 W. Lawrence & Son 12,970
C. E. Roberts & Co. 13,569 Foster & Deake 12,833
Patterson 13,561 Lovatt 12,890
Minter 13,479 Holliday & 12,775
Fulker & Sons 13,468 Greenwood 12,775
Chessum 13,354

[All of London.]

LONDON.—For the erection of an additional workshop, store, and offices, etc., at the Stockwell substation, for the London County Council.—
Leslie & Co., Ltd. £2,398
W. Johnson & Co., Ltd. 2,031
Futnam & Potheringham, Ltd. 2,023
J. C. & Bowyer, Ltd. 1,857
F. Lawrence & Sons, Ltd. 1,858
H. L. Holloway, Deptford, S.E. 1,818

[Architect's estimate, £1,938.]

LONDON. For making-up of Elhamere-road and Belmont-place, for Chiswick District Council. Mr. E. Willie, A.M.Inst.C.E., Engineer and Surveyor's Department, Town Hall, Chiswick.

Elhamere-road.

	Victoria Paving.	Croft Paving.	Excelsior or Atlas Paving.	Adamant Paving.	Council's Paving.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
F. G. Brummell	1,997 18 9	1,963 15 5	1,963 15 5	1,965 4 7	1,903 19 7
Free & Sons	2,116 0 0	2,116 0 0	2,116 0 0	2,116 0 0	—
Fry Bros.	2,788 0 0	2,770 0 0	2,734 0 0	2,770 0 0	—
Wimpey & Co., Hammersmith.	—	1,908 0 0	1,908 0 0	—	—

Belmont-place.

F. G. Brummell	246 15 7	244 6 11	244 6 11	*243 2 7	239 9 7
Free & Sons	300 0 0	300 0 0	300 0 0	—	256 0 0
Wimpey & Co.	—	—	—	—	—

LONDON.—For erection of Fire Brigade quarters, Stratford, E. Mr. John G. Morley, Borough Engineer, Town Hall, West Ham, E.

Leslie & Co.	£5,380 0 0	H. J. Carter, Ltd. £4,425 0 0	
J. Chessum & Sons	5,207 18 3	Bartley, Sons, & Holmes	4,383 0 0
McLaughlin & Harvey, Ltd.	4,995 0 0	J. W. Jerram	4,322 0 0
O. P. Drever	4,843 9 0	C. P. Roberts & Co.	4,290 0 0
J. & M. Patrick	4,777 0 0	A. E. Symes	4,247 0 0
Berry & Co. (Bow), Ltd.	4,725 0 0	F. & T. Thorne	4,235 0 0
S. E. Moss	4,536 0 0	J. T. Luton	4,150 0 0
E. & E. Percy	4,500 0 0	E. G. Brown	4,136 5 3
Thomas & Edge	4,491 0 0	Forest Gate	4,109 0 0
A. H. Fryde	4,490 0 0	G. Brown	4,009 0 0

LONDON.—For erecting two iron buildings on the Trafalgar-square site (Stepney) for the London County Council—

Hampfry, Ltd.	£877
J. McManus	870
W. Harbrow, South Bermondsey ..	850

LONDON.—For supplying (1) air compressors, and (2) lifting plant at car sheds, for the London County Council—

(1) Compressed Air Cleaning Apparatus.	
Alley & Macellan, Ltd.	£1,834 0 0
Watlington & Co., Ltd.	1,738 4 9
Tilghman's Patent Sand Blast Co., Ltd.	1,690 10 0
Westinghouse Brake Co., Ltd.	1,563 10 0
Ravell & Co., Ltd.	1,557 0 0
Globe Pneumatic Engineering Co., Ltd., Queen Victoria street, E.C.*	1,505 0 0
(2) Lifting Plant.	
East Ferry-road Engineering Works, Ltd.	1,916 12 4
S. H. Heywood & Co., Ltd., Reddish	1,790 9 0
A. Chaplin & Co., Ltd.	1,665 0 0

* Estimate of Chief Officer of Tramways for whole of the machinery, comparable with tenders, is £2,970.

LONDON.—For erection of additional buildings at the Battersea Bridge permanent way depot, for the London County Council—

Rawley Bros.	£1,978	H. L. Holloway	£1,850
A. Roberts & Co.	1,970	J. & S. Bowyer, Ltd.	1,837
C. Wall, Ltd.	1,898	Upper Norwood ..	1,837

[Architect's estimate, £1,970.]

LONDON. For making borings in connection with the proposed north-eastern storm relief sewer from Holloway to Shadwell, for the London County Council—

A. C. Potter & Co. £203 13 0	Le Grand & Sutcliffe & Co., Ltd. 131 12 6
T. Tilley & Sons 108 17 6	row, E.C.*

* £106 15 0

MARKET HARBOUROUGH.—For a additions, etc., to Fairfield-road Council School, for Leicestershire County Council Education Committee. Mr. Ernest G. Fowler, architect and surveyor—

E. Palmer	£718 0	W. Potter	£845 0
J. Chapman	718 0	E. Fox, G. Bingham-Haycock Bros.	690 5
G. Jarman & Sons 660 10	street, Leicester*		615 0

NEATH.—For erection of a chapel and manse at Seven Sisters. Mr. J. S. Griffiths, architect, Seven Sisters, Neath—

Gough Bros.	£2,219 0	J. R. Williams	£1,920 0
D. Davies & Son	2,120 0	Jones & Jones	1,865 0
E. Thomas & Son	2,098 13	W. Rogers & Sons	1,853 0
E. Turner & Sons	2,078 0		

Amended Tenders.
W. Rogers & Sons £1,808 0 0 || Jones & Jones, Seven Sisters* | 1,805 7 6 |

SWINDON.—For carrying out drainage works at Green Meadow and Pond Farms, Haydon Wick, near Swindon. Messrs. Drew & Sons, surveyors, Regent-circuit, Swindon—

J. Kilminster, Upper Stratton, Swindon* £143

WANTAGE.—For alterations and additions to the Royal Oak Inn, for Messrs. R. B. Bowly & Co., Ltd. Messrs. Drew & Sons, architects, Regent-circuit, Swindon—

H. & C. Spackman, Swindon* £729 |

[Eight tenders received.]

WISHAW.—For laying main intercepting sewer from Kirk-road to Caledonian-road, for the Town Council. A. S. Mawey, Burgh Engineer, Wishaw—

McLean & McKerrrow, Wishaw, N.B. £4,963 10 5

YORK.—For extensions to electric car sheds. Mr. F. W. Spurr, City Engineer, Guildhall, York—

W. Birch, Barbican-road* £1,391 0 8 |

YORK.—For proposed hospital for open-air treatment. Mr. F. W. Spurr, City Engineer, Guildhall, York—

Harrison & Co., Aldwark, York* £247 13 |

J. J. ETRIDGE, J^r.
SLATE MERCHANTS. LTD.

**EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.**

Telephone 2685 Wall, or write

**BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.**

**Ham Hill Stone.
Doulting Stone.
Portland Stone.**

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son,
The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent—Mr. E. A. Williams,
16, Craven-street, Strand.

**WHITE
LIME-SAND BRICKS**
Of the Finest Quality
FOR
BUILDINGS, TUNNELS, CELLARS, MANHOLES, etc.
WHY?

WHY?
B The Bricks are uniform.
C Less mortar is required.
D Closer joints can be made.
E 10 per cent. more bricks can be laid per day.
F Where light is required they need no whitewashing.
G Saving of material and labour.
H USED BY THE MILLION IN GERMANY, AMERICA,
AND IN THIS COUNTRY.

Three Bricks are made by the
GODSTONE BRICK & TILE CO., LTD.
Oxted Road, Godstone, Surrey.
and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 28/- per 1,000, net.
Send for Free Samples.

Asphalte.—The Seyssel and Metallic Lava
Asphalte Company (Mr. H. Glenn), Office, 42,
Poultry, E.C.—The best and cheapest materials
for damp courses, railway arches, warehouse
floors, flat roofs, stables, cow-sheds and milk-
rooms, granaries, tin-rooms, and terraces.
Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,

"INK-PHOTO" PROCESS,

4 & 5, East Harding-street,

Fetter-lane, E.C.

OGILVIE & CO.,
Telephone: DALSTON 128.
Many years connected with
the late firm of W. H.
LASCELLES & CO., Ltd.,
of Bunhill Row.

Amhurst Works, DALSTON LANE, N.E.

**EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS.** ESTIMATES
FREE.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by

**THE
French Asphalte Co.**

Whose name and address should be inserted in all
specifications.

For estimates, quotations, and all information
apply at the Offices of the Company,

**5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.**

EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Established 1834.
Telephone:
2570 North.
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
SMOKE-CURE

THE BUILDER

VOL. CL.—No. 5571.

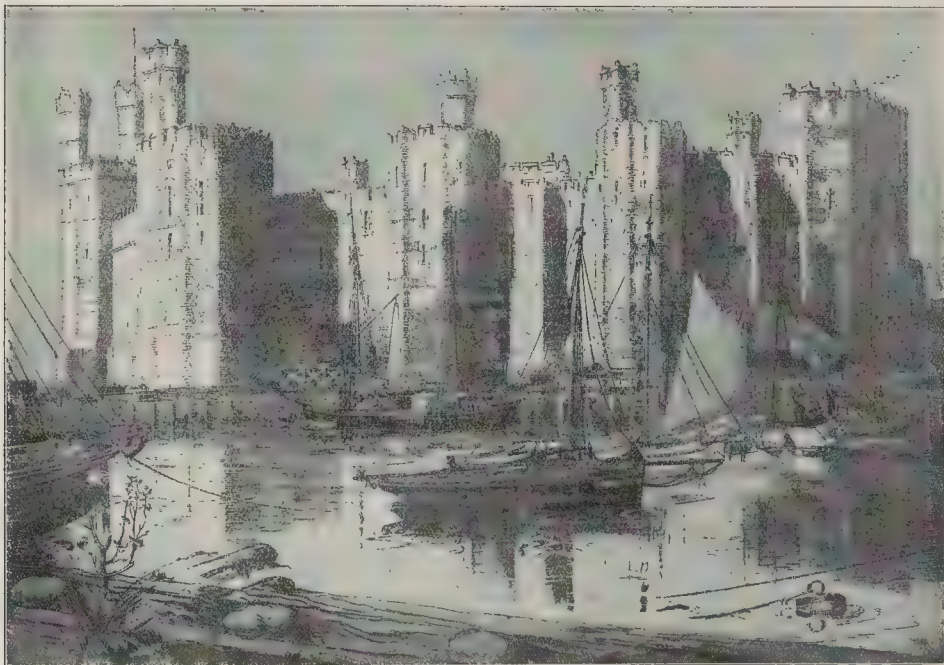
JULY 14, 1911.

CONTENTS.

PAGE	PAGE	PAGE
AN INTERESTING EXPERIMENT..... 51	MONTHLY REVIEW OF CONSTRUCTION:—	THE LONDON COUNTY COUNCIL..... 51
THE AMERICAN ACADEMY IN ROME..... 52	NORTH SURREY DISTRICT SCHOOLS, ANERLEY	TOWN PLANNING CONFERENCE, WEST BROMWICH... 51
NOTES..... 52	(WITH ILLUSTRATIONS)..... 48	LAW REPORTS..... 51
THE NEW ST. PAUL'S BRIDGE..... 53	NOTES ON SOME DEFINITIONS USED IN STRUCTURAL	WESTMINSTER CITY COUNCIL..... 52
THE ARCHITECTURAL ASSOCIATION SECOND SUMMER	MECHANICS (WITH DIAGRAMS)..... 44	LONDON COUNCILS... 52
VISIT..... 56	EXHIBITION BUILDINGS.—VI..... 45	FOREIGN AND COLONIAL..... 53
ARCHITECTURAL SOCIETIES..... 56	THE COMPRESSOL SYSTEM OF FOUNDATIONS (WITH	PATENTS..... 53
HOUSE AT WEST BAY, DORSET (WITH ILLUSTRATIONS)..... 57	ILLUSTRATIONS)..... 45	SOME RECENT SALES..... 53
ENGINEERING SOCIETIES..... 57	NOTES..... 46	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN... 54
GENERAL NEWS..... 57	THE BUILDING TRADE:—	PRICES CURRENT..... 56
COMPETITION NEWS..... 58	SCAFFOLDING: TELESCOPIC TOWERS AND MASTS	TENDERS..... 57
BOOKS..... 58	(WITH ILLUSTRATIONS)..... 47	
FIFTY YEARS AGO..... 51	THE MEDIEVAL BUILDER'S LABOURER (WITH	
EDITORIAL SUMMARY..... 42	ILLUSTRATION)..... 48	
MEETINGS..... 40	A SAFETY CRANE HOGE (WITH ILLUSTRATION) ... 49	
CORRESPONDENCE..... 40	GENERAL BUILDING NEWS..... 49	
INTERCOMMUNICATION COLUMN..... 40	APPLICATIONS UNDER LONDON BUILDING ACTS,	
NOTES TO ILLUSTRATIONS..... 40	1894 TO 1909..... 49	
	PROJECTED NEW BUILDINGS IN THE PROVINCES... 50	

Illustrations.

THE NATIONAL LIBRARY OF WALES, ABERTSTWTH.
MR. SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECT.
R.A. SCHOOLS: PRIZE DESIGN IN ARCHITECTURE
("PROPOSED ST. PAUL'S BRIDGE OVER THE THAMES").
BY MR. LEONARD H. BUCKNELL.



Carnarvon Castle. (See page 33.)

Reduced from an Etching by Mr. W. Monk, R.E. (Published by the Artist at Amersham.)

AN INTERESTING EXPERIMENT.

THROUGH the courtesy of an American correspondent we have received a comprehensive report of the developments that have followed the recent opening of the first instalment of the Protestant Episcopal Cathedral on the Morningside Heights, New York. This building, as our readers may be aware, was designed some twenty years ago by the late George L. Heins and his partner, Mr. C. G. La Farge, and the choir has recently been completed under the supervision of the last named. It

appears that without any warning the Trustees terminated Mr. La Farge's appointment and called in Mr. Ralph Adams Cram as their adviser. While our sympathy must be extended to an architect who will naturally be grievously disappointed in having to turn over his half-completed work to others, we are bound to admit that the Trustees appear to be acting within their legal rights.

Mr. Cram's action in at once communicating with Mr. La Farge, and in agreeing to accept the appointment only

if the American Institute of Architects ruled that in doing so he was not violating the ethics of the profession, is exactly what we should expect of him, knowing his keen sense of what is due from one architect to another.

This change, though likely to have an important influence on a building dominating the northern end of Manhattan Island, is not, in our view, the most interesting feature in the Trustees' action; it appears to be in reality subordinate to a scheme which, if put into

general practice, would revolutionise our architectural methods in regard to large and important buildings.

Read carefully the following statement by Dean Grosvenor, the Chairman of the Fabric Committee—

"This new cathedral is to be the biggest and finest ecclesiastical structure in modern times, with the single exception of the new cathedral of Liverpool. It is too big for one man. It is to be no one-man affair. It is to be such a structure as should have the fruits of the best minds in the world and the opinions of the greatest experts on ecclesiastical architecture in the world. It is to be made as fine and as beautiful as it is possible for such a structure to be made.

The determination reached by the Trustees to bring this to pass will result in the enlargement of the original plans for the cathedral. The Trustees have greatly broadened their views about it, and in this situation they have decided to appoint Mr. Ralph Adams Cram to be their consulting architect.

He is to act in this manner: For the coming additions to the building Mr. Cram will select the architect for the specific work with the approval of the Fabric Committee and the whole body of Trustees. There are to be no competitions. You may say for me that I do not approve of competitions. When the architect selected shall have finished his design he will submit it to Mr. Cram, who will reject it at once and direct another if he sees fit. However, if he thinks well of the design submitted he will lay it before the Fabric Committee. If this committee approves of it the design will then be laid before the Trustees in a body, and there final action will be taken."

We do not think we are overstating the case in describing the suggested method as revolutionary in its character; though, however great the departure from recognised practice in the present day, the genesis of the idea underlying it may be easily traced. A study of most of our old buildings reveals the fact that much of their charm is due to their being the work of many hands, and it is doubtless with a view to recapturing that form of interest that this attempt is being made to introduce the work of a number of men into a single building. That the experiment is an interesting one must be admitted, but whether the results will justify it is more doubtful. In the hands of Mr. Cram it will have the best possible chance of success, and if it fails it can only be from some inherent weakness.

To our mind there appears to be a curiously artificial atmosphere about the proposal, which will probably result in some corresponding artificiality, but thinly disguised, in the building, so that it will obviously, to the trained mind, only simulate and not reproduce the charm of those old buildings on which successive generations have laboured. We may be wrong, indeed for the sake of New York we trust that we are, but the feeling remains that the spirit of our time is too remote from that of the Middle Ages for any attempt at imitation of medieval methods to achieve its end, and that, while our architects are in the habit of working on the lines of the later Renaissance, the mere fact that some have trained themselves to express their imaginings in the Gothic manner will not enable them to recreate the more subtle characteristics of those times, least of all in such an environment as that of New York.

The danger will be that this important work may lose the homogeneity so essential to a fine building without achieving the compensating quality of varied interest that is so evidently in the

mind of those controlling its destinies. However, America is the land of bold experiments, and perhaps it may be as well if one more is added to the striking record it may already claim of experiments in religion, in law, in education, in construction, and in other directions too numerous to recite. Experiment is the outcome of mental activity, and perhaps an occasional failure is not too high a price to pay for the results that attend a fearless attitude in face of all the problems of life and art.

THE AMERICAN ACADEMY IN ROME.

IN view of the schemes, still more or less in the air, for the establishment of a British Architectural School at Rome on the French model, it is not uninteresting to learn what the Americans are doing in this direction. The last quarterly Bulletin of the American Institute of Architects throws some light on the matter. The American Academy in Rome has for some time been an established fact, and this institution, it appears, has now been strengthened by a union with the American School of Classical Studies. There will, therefore, now be two schools within the Academy—a School of Fine Arts and a School of Classical Studies; and, as the Bulletin states, the Academy will represent America in Rome in all branches of artistic and classical culture. The word "culture" is still dear to the heart of your cultivated American.

The history of the American School of Architecture possesses some interest. It was, in the first instance, organised by a group of artists, sculptors, and painters who were engaged in planning the Columbian Exposition, and was inaugurated in the Villa Aurora in 1895. During the first fifteen years of its existence the artists contributed over 15,000*l.* for its support, which indicates their estimate of its value in the development of American art. Beginning with an architectural department, this was soon followed by a department of sculpture and painting, and the Academy became incorporated by Congress as a national institution. Until a certain income was secured through several subscriptions of one hundred thousand dollars each to the Endowment Fund the students in the Academy were beneficiaries from various scholarship funds, but for the past four years competitions have been instituted throughout the United States in each branch of the fine arts, and the successful competitors have been sent to the Academy for three years with an annual subvention of one thousand dollars. Down to the present time sixty-four students have pursued their advanced studies at the Academy, many of whom have already attained high rank in their several professions. In addition to these competitive students there have been in residence at the Academy at various times the holders of the McKim Fellowship and many scholarships in the possession of Harvard and other Universities and schools. There are at present nine Academy Fellows in residence and two holding other scholarships.

The national interest in the school is in a measure indicated by the fact that among its most liberal supporters have been Mr. Pierpont Morgan and other wealthy patrons of the arts, while the sum of a hundred thousand dollars has been raised as a memorial to Mr. McKim. This distinguished architect manifested during his life the greatest interest in the Academy, to the establishment of which he devoted much time and effort, and, further, by the provisions of his will he bequeathed to it a sum of about two hundred thousand dollars subject to the life interest of his daughter. Notwithstanding the strong financial backing which the Academy has received from all quarters, it appears that much larger resources will be needed for new buildings and endowments to enable it to take full advantage of the opportunities which are now open to it. It may be gathered, therefore, that the foundation and adequate working of an art school of the kind is a matter of some cost.

The scope of the newly-organised Academy covers a larger field than that of architectural study alone. It recognises, first of all, the unity of the arts of architecture, painting, and sculpture. The failure of the American educational system to co-ordinate these arts is admitted. It is hoped that the present foundation, placed in a centre where such unity finds its highest expression, will not be without effect on the artistic outlook of its Fellows and students—an effect which later will be manifested no doubt in the general levelling up of the art production of the United States.

NOTES.

St. Paul's Bridge.

WE very much regret to see that the City Corporation has succeeded in obtaining the approval of the Select Committee in its attempt to again rush its scheme through without sufficient time or opportunity being allowed for its adequate consideration from every point of view involved. We should have thought that the onus would lie on the promoters to prove first of all the soundness of the object they have in view, and then afterwards to prove the correctness of the method whereby they propose to carry it out. We have so far seen no attempt to prove that this is the right place for a through traffic route. This seems to have been taken for granted, and upon this assumption the whole of the promoters' case is built. Yet this is precisely the point which is open to grave doubt, and from a town-planning point of view the assumption appears unwarranted. The Select Committee does not appear to have called for traffic maps or traffic statistics, or anything in the nature of evidence to prove that a through traffic route must be situated at this precise spot. They seem to have taken it all for granted, and the Corporation was allowed to throw the onus of proof on their opposers, and to confine themselves to attacking any tentative suggestions that might have been put forward, and to showing how dangerous a tramway tunnel would be if put where it would not be necessary to put it, and where, so far as we know no

one proposed to put it. In our last Review of Civic Design we pointed out some of the objections to this position as a through traffic route and the obvious advantages of Blackfriars as a main north and south artery, but such points as those we raised do not appear to have been thought worth consideration.

If we may judge from St. Paul's : the evidence as reported, The Evidence. the three architects who appeared before the Select Committee seem to have been consulted only on the method whereby the object of the Bill is to be carried out, and not as to whether this object is in itself a reasonable one and the best town-planning solution imaginable of the traffic difficulties which gave rise to the scheme. Granted the necessity of a through traffic route at this exact spot, and granted that this is the one important factor that should dominate the scheme, there is a good deal, no doubt, to be said for the way in which the Corporation propose to carry it out, and it is quite proper that the Corporation should ask these architects to point out its advantages to the Committee. We now know all there is to be said in favour of this scheme, and we must confess we are not greatly impressed. But, as we said before, it is just this necessity for a traffic route at this spot which should not be taken for granted, as no proof is forthcoming. Neither have we any proof that the three architects are agreed that this is the best possible scheme imaginable. On the contrary, Mr. Colcutt is reported to have expressed the opinion that if it were possible to construct an axial bridge and approach to St. Paul's he would consider that the best scheme that could be put forward. We have seen no proof that such a scheme is impossible, neither have we heard that the Corporation has requested Mr. Colcutt or anyone else to endeavour to work it out. The whole matter is summed up in a question reported to have been put to Mr. Colcutt. "In short, you think it easy to find out a better scheme than that which is put before us to-day?" The whole case for the opposition is contained in Mr. Colcutt's reply, "I do." Until the Corporation, by competition or otherwise, make an honest endeavour to discover that scheme, they cannot be said to be acting up to their expressed intention of doing the best they can for London, and we can only hope that Parliament will again take a different view to that of the Select Committee.

As Others See Us. The new English stamps are described by the London correspondent of the *Corriere della Sera* as "simply the most vulgar and most depressing of all existing issues. The predominant note is economy, though against economy *per se* there is little to be said, but in this case the King's head lacks character, and might equally be that of the Tsar of Russia or any other gentleman with a beard. Nor is this the only failure in the design of these ugly English stamps, bearing only the inscriptions halfpenny, one penny. Who could possess a soul so void of the spirit of art and poetry as to put in circulation in the vastest Empire in the world, from the very heart

around which half the human race revolves, a design conceived on a purely monetary idea?" It is well to see oneself occasionally through other eyes; we were prepared to criticise our new stamps from the point of view of the decorative designer, but it is of more value that we should be made to realise, in a broad and comprehensive way, what a stamp should mean as one of the methods of expressing national characteristics and aspirations.

THE Board of Education in its circular issued on June 29 expresses the intention of terminating the present method of examining for art class teachers' and art masters' certificates next year, and of substituting tests, not at present specifically defined, that would demand a more comprehensive general education and artistic attainments less stereotyped in their character; these tests to be combined with a suitable course of professional training. The intention of the Board appears to be excellent, and we shall await with interest the publication of a detailed scheme. At the same time we should hope that there will be no attempt to substitute for a high standard of technical achievement an inferior one supported by a smattering of knowledge extending over too wide a range. The arts are already, in this country, too much under the domination of the glib-tongued dilettanti, and if the latter gentlemen are to receive official recognition into the bargain we shall suffer still further from their operations. There is a real danger in this direction, and the Board of Education will do well to bear it in mind.

L.C.C. Cottages Purchase Scheme. The Housing Committee's recommendation to the London County Council that it should apply for Parliamentary powers to sell its cottages on building society methods marks a fresh development of municipal enterprise. We see no objection, on principle, to a body empowered to build and to let houses also having powers to sell on such terms as may suit it and the purchaser. There is undoubtedly an increasing tendency towards thrift in our working classes, and further opportunities for the gradual investment of savings would encourage this. Without a doubt London County Council property is well built, but whether it can be built cheaply enough to compete with the private speculator from the buyer's point of view has not yet been tested. It can be let at a reasonable rent because of the strong position of the London County Council as borrowers, but other factors have to be taken into account when it is a question of selling.

Carnarvon Castle. CARNARVON CASTLE, the scene of the Investiture of the Prince of Wales on Thursday, is an ancient and picturesque fortress which bears striking testimony to the permanence of the work of its XIIIth-century builders. That it is in such a remarkably good state of preservation after so many hundreds of years and after so much active service is very satisfactory: for its suitability for the recent high ceremony was unique. The historic building in which with all spectacular

pomp and traditional sentiment the King presented his son to the people of Wales is a type of mediæval fortification which has distinct architectural qualities: for instance, it reveals its purpose at first sight. It was designed to be impregnable against all known engines of war, and, although gunpowder began to be used about the time the building was completed, the walls were solid enough to defy the efforts of all those who attacked in succeeding centuries. Time, more than "villainous saltpetre," as Shakespeare called it, has been the most persistent agent of destruction, and, thanks to the weight of the structure, its disintegration has been slow. The Castle still presents a formidable appearance, and, as may be realised from Mr. Monk's dignified etching (p. 31), its grim but not unlovely walls dominate scenes of activity on the Menai Strait and the River Seiont, which are not very dissimilar from those associated with the Phœnicians and the Romans. Inside, renovations have been made under the care of the Office of Works, and its appearance throughout is a tribute to the skilful blending of ancient and modern methods of construction.

THE NEW ST. PAUL'S BRIDGE.

ON Tuesday a Select Committee of the House of Commons, presided over by Mr. Mooney, commenced the consideration of the Bill for constructing a new bridge across the Thames from the south side to St. Paul's and the widening of Southwark Bridge. The scheme has already passed a Select Committee of the House of Lords.

At the outset of the proceedings the Chairman said he had received a letter from Professor Beresford Pite offering to give evidence against the Corporation scheme. Under ordinary circumstances he would not have any *locus*, but he thought that the Committee would like to hear what Professor Pite had to say.

Mr. Honoratus Lloyd, K.C., on behalf of the Corporation, said he thought the most convenient arrangement would be for him to shortly state the course he intended to pursue, and then Professor Pite could go into the witness chair. In accordance with the instruction of the House the Corporation had consulted some very eminent architects in regard to the scheme—Sir W. Emerson and Mr. T. E. Colcutt, Past-Presidents of the R.I.B.A., and Mr. J. J. Burnet, F.R.I.B.A. He intended to call those gentlemen before the Committee. He had also hoped to call the Engineer to the Dean and Chapter of St. Paul's, Mr. A. J. Barry, but he had been called abroad. Mr. Barry had written the following letter to Mr. Basil Mott, the engineer to the scheme:—"In reply to your letter of the 27th inst., in which you inquire what my views would be as regards the possible damage to St. Paul's Cathedral if a tramway subway were constructed nearer to the south side of the Cathedral than shown on the plans that have been discussed between us, I beg to say at once that I should regard with the gravest concern any proposal that would involve the excavation of the subsoil nearer to the Cathedral than as shown on the plan you submitted to me, more particularly if such disturbance of subsoil took place on the south side of the Cathedral. After discussing with you the maximum depth to which the foundations of the tramway subway as proposed to be constructed under your Bill of this year should be carried, the horizontal distance of the same from the foundations of the Cathedral, and after agreeing on certain protective works to be carried out before the proposed excavations were commenced, we eventually agreed with you in certain clauses for the protection of the Cathedral. In consenting to the disturbance of ground, even in the situation as then proposed, we were not without some

misgivings, and in accepting the clauses which were finally agreed, we were actuated by the desire not to interfere, if possible, with a work of great public importance. We were influenced, too, by the fact that the proposed excavations for the tramway subway would only affect that part of the Cathedral foundation which carries the least weight and is most secure. When you inquire what my views would be as to the possible damage to St. Paul's if the subway were constructed nearer to the south side of the Cathedral, I presume you have in your mind the construction of a tramway under St. Paul's Churchyard from the point about opposite to the centre of the south transept window eastwards and round the east end of the Cathedral. I have no hesitation in saying that, from an engineering point of view, I should regard the carrying out of such a proposal as certain to cause the most serious damage to the structure of the Cathedral. The main dome is, as perhaps you know, carried on four main corner piers, in addition to eight intermediate ones. The four piers on the north side have settled very little. In every case the piers carrying the south segment of the main dome have settled considerably more than any of the others. The south wall of the west transept has developed serious cracks, and there has been a general movement or draw of the whole structure towards the west and the south. This is evidenced by numerous cracks in the building and by the fact that the south wall of the building is already out of the vertical. Generally, I regard this part of the Cathedral as already being in a state of comparatively unstable equilibrium, and I should regard a far less serious disturbance of the subsoil than that which would be involved by the construction of so large a work as a tramway subway as close to the south wall of the building as, I understand, is proposed as entirely unpermissible in the interests of the security of so important a public structure as the Cathedral."

Mr. Lloyd then read the following report to the Corporation, signed by Mr. Emerson, Mr. Collett, and Mr. Burnet:—

"7, Grosvenor-mansions,
76, Victoria-street, S.W.,
July 7, 1911.

To Sir James Bell, Town Clerk, Guildhall. Dear Sir:—We have now completed our inquiries and consultations, and have the honour to reply to your letter inviting our opinion and advice in respect to the instruction of the House of Commons to the Committee on the Corporation of London (Bridges) Bill "not to agree to any scheme for the construction of the proposed new bridge, including the approaches thereto, until they are satisfied that the scheme, both in respect of architectural design and convenience of traffic, is the best adapted to the public needs and best suited to the character of the site."

2. We construe the words "the scheme" in the instruction as meaning the official scheme of the Corporation or any alternative scheme for a bridge to open out at or near St. Paul's Churchyard, which is the "site" in question. We have considered the scheme and also some other suggestions. The instruction opens up the three questions of:—(a) The best adaptation to public needs; (b) appropriateness to the character of the site; and (c) architectural design.

3. We accept as essential conditions for a satisfactory scheme the following requirements:—(1) That the projected bridge must have its roadway at the level above high-water mark shown upon the section; (2) that the linking of the northern and southern tramway system is an integral part of any scheme; (3) that the roadway from the bridge must be carried as a bridge over Queen Victoria-street.

4. As to (a) adaptation to public needs, the object of the Bill is to relieve the congestion of traffic between south and north over London, Southwark, and Blackfriars bridges, from a point in Southwark, near Marshalsea-road, direct to the main traffic roads to the north *via* Aldersgate, and to offer facilities for connecting the tramway systems on the south with those on the north. After the most careful consideration, both separately and in frequent consultation of various suggested or possible routes, and study of the general plan of London roadways and

contemplated tramways in the neighbourhood of St. Paul's, we are of opinion that the line of route proposed by the Corporation is best adapted to the public needs and to fulfilment of the objects of the Bill.

5. As to (b) appropriateness to the character of the site, we would point out that in the Corporation scheme the situation of St. Paul's in the relation of its line of axis to the central line of the river is not a factor. The area of the Churchyard would be increased, and there would be no consequential obstacle to the consideration of future improvements of the Churchyard. Moreover, better views of the Cathedral would be secured on the only side on which this can be done, without disturbing the picturesque charm of present surroundings. There is the further point of great practical importance that, owing to the depth of the Cathedral foundations and the quality of the subsoil, it is only on the eastern side of St. Paul's that a subway for tramways can be constructed above the level of the foundations without menace to the structure. (It is understood, of course, that the subway is not to be deeper than shown on the section.) Having carefully considered these points and all the surroundings of the site, we are of opinion that the alignment proposed by the Corporation is the one best suited to the character of the site.

6. In respect to (c) architectural design, we are in complete accord with the opinion of the Council of the R.I.B.A., that an architect or architects should have been appointed to collaborate with the engineers as to the general design of the bridge and its approaches when the scheme was initiated. In making this observation the Council of the Institute were undoubtedly actuated by the desire—shared, of course, by the City authorities—that a fine monumental bridge of masonry should be erected. In skilled hands the bridge and its approaches can be made a magnificent addition to the river scenery about the City.

7. Since the scheme was published side issues have been raised as to the "opening up" of St. Paul's. At first sight, and without detailed expert scrutiny, the idea that the opportunity might be taken to open up a vista terminating in the south transept of the Cathedral is attractive. The project shown by black lines on the plan has appealed to some architects and to a section of the public, and there has been a tendency to subordinate the main purpose of the new avenue of traffic between north and south to what would at the best be a subsidiary aim. In considering the project three points of great importance have to be borne in mind. They are:—(i.) The alignment of the bridge in relation to the river, since the proposed vista would only be obtainable by the building of a skew bridge; (ii.) the width of the northern approach to the Cathedral; (iii.) the possibility of future river embankments being constructed below Blackfriars.

8. We are of opinion that the suggested alignment is not good, and that, as it would be almost impossible to make a satisfactory monumental design for such a skew bridge in masonry, it is probable that the bridge would have to be of steel—a contingency which the R.I.B.A. evidently wish to prevent. There is strong presumptive evidence that Wren did not design the side elevation of the Cathedral to be looked at from any great distance. This is shown by the bolder treatment of the west front and of the dome as compared with the comparatively superficial ornamentation of the other wall surfaces. And in this matter the great architect followed the best traditions of his profession. We know of no famous public building, either here or on the Continent, in respect to which it has been considered necessary to arrange great roads leading to the side of the structure. Wren evidently did not contemplate such approaches in the case of the Cathedral, but he did contemplate a wide road at the east end, and that he was capable of taking large views as to future requirements was shown by his well-known plan for the rebuilding of London. We may add that the Greeks' great artists—took especial care that the Parthenon should not be approached by a road leading directly up to it.

"I am of opinion that it would be possible to construct a bridge over the river giving a vista of St. Paul's, which I should much prefer if found practicable. (Signed) T. E. COLLETT.

9. Further, it is to be observed that views not less interesting than the suggested "vista" will be opened up by the roadway proposed by the Corporation, and that it would not prevent improvements subsequently being made, if necessity arose, in connexion with a general scheme for improvement of the Churchyard. We wish it to be clearly understood, however, that, in our opinion, there is a limit to such "improvement," and that to exceed it would be to place Wren's design at a positive disadvantage by bringing it under conditions it was not designed to meet. But such limit would not be exceeded by the improvements the proposed Corporation route would effect, and facilities would be offered for opening up picturesque views of St. Paul's which have hitherto been obscured.

10. While it has been no part of our duty to examine with care the financial aspects of the conflicting schemes which have been the subject of public discussion, we feel it right to say that we have been impressed by the extent to which the "vista" scheme would involve altogether heavier expenditure out of all proportion to the Corporation project.

11. With respect to the suggestions we are asked to make, we agree with the Council of the R.I.B.A. in their recommendation that architects should collaborate with the engineers in the designs for the bridge, the archways over Queen Victoria-street and Thames-street, and the approaches as well as the accesses from the lower and higher levels, and in the debouchment of the roads. If the general scheme is passed by Parliament we advise that such architect or architects should be appointed.

12. We submit the following suggestions for improvement of the scheme as shown on the plan:—(1) That where the bridge road debouches on to Cannon-street it should be opened out as much as possible within the lines of deviation, and that the corner building to the south-east of Old Change be also acquired, thus opening that corner towards St. Paul's. (2) That the building frontage along Old Change should be no nearer to the east end of the Cathedral than at present, any future buildings following that line, and that the whole of the existing buildings between St. Paul's and Old Change should be removed. (3) That at some time the property now obscuring the south end of the Post Office in St. Martin's-le-Grand be acquired, and the space opened up and arranged so that a fine suitable architectural feature might centre on the line of the new bridge. If this were done it would also be possible for Foster-lane to somewhat relieve the traffic by St. Martin's-le-Grand. These alterations would give views of both the south-east and north-east sides of St. Paul's not hitherto obtainable. Further, ample space would be provided for the traffic at the road junctions, and right-angled crossings would be avoided."

Mr. Lloyd, commenting on the three suggested improvements of the scheme, said that the buildings mentioned in the second suggestions were already within the limits of deviation; whilst numbers two and three were improvements which were not within the scope of actual approach, but they were improvements which the Corporation had in contemplation and would no doubt be carried out.

Professor Pite then stated his objections to the scheme. He said that in the first place the proposed new wide thoroughfare did not combine architecturally with the great monument, St. Paul's Cathedral, which was practically the central object in the City. There was a want of definite architectural relationship between the great causeway and the Cathedral. That he should describe as an objection to the plan. There ought to be some architectural connection between the new thoroughfare and the Cathedral. The shape of St. Paul's Churchyard was very irregular. If it was squared up all the way round, a geometrical relation might be created between the new road and the rectangular building in the centre. He urged very strongly that the direct line of the road had a necessary connexion with the building, and that had not been provided for in the scheme. Another great objection he had was to the aspect rather than to the plan. The aspect of St. Paul's was that interesting architectural "crown" which it made in every

view of the City. That was an asset of very great value. His alternative suggestion was a "skew" bridge, and he did not see that there was any artistic objection to the relationship of the piers beneath the bridge to the direction of the road upon the bridge. The treatment beneath a bridge became a matter of very great interest, and could be made a great artistic improvement. In many kinds of arching and vaulting those problems could be made the very life of the subject. The scheme of the Corporation was so partial that it was rather difficult to form a correct opinion as to its effect. It created a wide causeway only so far as the bridge itself was concerned. The Corporation scheme was very drastic as far as the east side of the Cathedral was concerned, but he submitted that in dealing with the matter they ought not to question the north and south sides. Some distribution of the large capital expenditure upon the east side would give them an architectural lay-out on the north as well as the south side, which would be of very great value to London.

Replying to Mr. Forbes Lankester, K.C., Professor Pite said that to a large extent it was true to say that he had approached this matter as an opportunity which afforded itself for opening out St. Paul's, and he looked at the question mainly from the artistic point of view. At the same time, he would not question the desirability of affording facilities for traffic should come into consideration. He thought that large sums of money should be spent in opening up views of St. Paul's, and as far as the Corporation's willingness and courage in dealing drastically with the east side of the Cathedral was concerned they had his blessing. His suggestion, however, was that it were a little less drastic with the east side and took into consideration the other characteristics of the site they would see that the north side ought not to be omitted from consideration. He did not agree that a "skew" bridge would be difficult to construct, and he saw no objection to such a bridge either from a utilitarian or artistic standpoint.

In reply to the Chairman, witness said the only additional cost of his alternative scheme would be the cost of acquiring the warehouse of Messrs. Cook, Son, & Co. In regard to the question of the tramway, if the engineer was to say that under no circumstances must they allow trams to come where it was suggested they should, he would say, "Don't take the risk. St. Paul's is worth more to us for centuries than tramways are for generations."

The Chairman read a letter which he had received from the R.I.B.A., dated July 4, in response to a communication he had sent asking whether the Institute would like to give evidence at that inquiry, in which it was stated:—"The announcement of the Corporation appointing three eminent architects to advise them on their proposals entirely meets the view of the Institute. Now that these gentlemen are appointed the Institute has no further views to express in the matter."

Professor Pite said he quite agreed with the action which the Institute had taken. The Corporation having consulted architects of sufficient eminence to advise them, the Institute could not and would not challenge as a matter of personal opinion the position of any of its members, good or bad.

Sir W. Emerson, in reply to Mr. Forbes Lankester, said he did not agree with Professor Pite that it was possible to make a fine architectural monument with a "skew" bridge. Such a bridge could be carried out in masonry, but he thought they would find the difficulties so great that they would have to build it either of steel or reinforced concrete.

Questioned as to the improved vista which Professor Pite thought would be given of St. Paul's if his scheme was adopted, witness said he considered it would be going out of the way to make a strained effect. It would destroy a great deal of the mystery of the Cathedral and the charm of it. The removal of the buildings between Old Change and St. Paul's would give a very fine north-east and south-east view of the Cathedral.

Mr. Forbes Lankester said he might say at once that the Corporation were prepared

to accept the suggestion in the report, and to remove the old buildings between St. Paul's and Old Change.

Sir W. Emerson remarked that that would make a great difference to the view.

Mr. T. E. Collcutt, F.R.I.B.A., said he had taken great interest in the question before the Committee, and was one of the architects who went to the Corporation as a deputation on the matter. His objection to an 80-ft. roadway leading up to the south transept of St. Paul's was that on either side of the new roadway there would be buildings at least 80 ft. high, and to get a proper view of the dome and a proper effect of the vista the whole of the dome should be disclosed. Looking at it from that point of view, he should consider that the best plan which could be adopted would be a road some portion of which should be at least 160 ft. wide. He should say that from Queen Victoria-street, for instance, to the south transept the road should be at least 150 ft. or 160 ft. wide to get a proper view of the transept and dome of the Cathedral. He quite saw that that would involve enormous expense.

Mr. J. J. Burnet, F.R.I.B.A., gave somewhat similar evidence. He said that if the bridge was built, as the Corporation proposed, leading up to the east-end of St. Paul's, it would give anybody approaching the Cathedral the idea that it stood upon a hill, and that was why he approved of the route.

Evidence having been given in support of the Bill by Mr. Leslie Vigers and Mr. Basil Mott, engineer, the Committee adjourned.

Resuming on Wednesday, Mr. Fitzmaurice, the Chief Engineer to the London County Council, gave evidence bearing on the practicability of the proposed subway tramway in connexion with the new bridge.

Mr. Somers Clarke, architect to the Dean and Chapter of St. Paul's from 1897 to 1909, said the wall of the south transept of the Cathedral was about 110 ft. or 112 ft. long and 10 ft. thick, while the footings must be 120 ft. high. They had gone east and west in its length, and in parts they were broken through the thickness up to the top and extending some distance down. There was evidence of sinking having taken place from the very early history of the building. It was obvious from the area over which the footings were spread that Wren himself was aware of the difficulties which were likely to arise. The footings of the Cathedral laid upon a layer of peat earth of a depth of 18 ft. below the present level of the streets. Underneath that there came a layer of about another 18 ft. That got down into the gravel, which was not very solid stuff, standing upon the London clay, and at the bottom the stuff was very loose and there was a stream of water. There was evidence on the face of the building itself of settlements having taken place from time to time, and very soon after the Cathedral was built. There was very strong evidence of settlement upon the face of the south tower. The top of it was 18 in. out of the vertical, and the dome mass was broken away from the choir. They had no reason to think that those movements were at an end. He had seen the evidence of water having been taken away from the foundations when deep excavations were going on in the neighbourhood. He regarded the suggestion of bringing a subway tramway at the south side of St. Paul's as a very dangerous one, and he would refuse to be responsible for such an undertaking.

Mr. Riley, Superintending Architect to the London County Council, said he could not suggest any point which would justify the Committee in making any change in the alignment of the proposed new street.

Mr. Balfour Browne, K.C., having addressed the Committee on behalf of Messrs. Cook, Son, & Co., whose premises would be interfered with if Professor Pite's alternative scheme was sanctioned,

The Chairman, after the Committee had consulted in private, said:—"The Committee are of opinion that the scheme for the construction of the proposed new bridge, including the approaches thereto, is both in respect of architectural design and convenience of traffic the one best adapted to the public needs and best suited to the character of the site, and will report accordingly to the House."

The following admirable letter, which appeared in Thursday's *Times*, will be read with interest:—

To the Editor of the *Times*.

SIR,—In paragraph 8 of the consulting architects' report, given in the *Times* of to-day, the architects support their opinions by certain remarkable statements. They say:—"There is strong presumptive evidence that Wren did not design the side elevation of the Cathedral to be looked at from any great distance." It would be interesting to know on what authority the consulting architects base this statement. The river existed 250 years ago for Wren not less than for us to-day—far more so, indeed, as in his day the river was not obstructed by buildings in St. Paul's churchyard of a banality that Wren could never have believed to be possible. As a matter of fact, in Wren's plan for rebuilding London a street is shown nearly at right angles to the south front; but, apart from this, Wren's plan for the rebuilding was made in 1668, and even the "warrant" design for St. Paul's was not completed till 1675.

1. The consulting architects further contrast "the bolder treatment of the west front and of the dome" with the "comparatively superficial ornamentation of the other wall surfaces." Surely these gentlemen in preparing their report must have omitted to study the south front of the Cathedral. By no stretch of imagination or the boldest misuse of language can the south front, with its Loggia of Corinthian columns, its pediment and rich decoration, be described as "superficial ornamentation"; and one would hardly have expected "eminent architects" to separate the dome from its substructure. That great design stands or falls as a whole.

2. The architects, stating that it has not been considered "necessary to arrange great roads leading to the side of the structure," say that this practice is one of "the best traditions of the [architect's] profession." It is nothing of the sort, but the consequence of the simple fact that the principal entrance to our Western cathedrals is at the west end, and it is merely common sense to approach directly the principal entrance in preference to others. The case does not occur where a cathedral stands in a large open space, and probably any architect, if given the choice, would prefer that his church or cathedral should be well seen from every point. Sir William Emerson suggested that "a great deal of the mystery and charm of St. Paul's would be destroyed by a long approach." One can understand the charm of the picturesque little buildings that sometimes nestle between the buttresses of the great Gothic churches of France and elsewhere, but the existing buildings of St. Paul's churchyard—

3. The architects, in support of the Corporation scheme, quote the Greeks. They say:—"We may add that the Greeks—great artists—took especial care that the Parthenon should not be approached by a road directly leading up to it." Why drag in the Greeks to support a foregone conclusion on a problem in which nothing that they did has the slightest bearing? It is true that when the Greeks rebuilt the Parthenon they did not bring their road directly up to it, but it is perfectly well known that, at the date when the Parthenon was built, the position of temples had nothing to do with questions of axis lines, but was determined by such considerations as the sacredness of the site of older temples, and it is not only irrelevant but an utter anachronism to ascribe to the Greeks of the time of Pericles modern theories of vista and alignment. Even if it were not so, even if the Greeks did deliberately disregard such things as axis lines, do the consulting architects seriously maintain that in schemes of civil improvement we are to ignore our great architectural monuments?

These are only some of the points open to serious criticism in this report. Its authors appear to have assumed that if the bridge is laid out on the axis line of the dome of St. Paul's it inevitably follows that the subway for trams must skirt the south side of the Cathedral, and in your account of the proceedings of July 12 opposition to any such proposal occupies a prominent place.

But, as a matter of fact, able schemes have been prepared showing how it is possible to set the bridge on the axis line and yet keep the subway to the east of the Cathedral. I cannot find any consideration of these schemes in the report.

The report of the consulting architects will have been read with keen disappointment by those who had hoped for better things. Its bias is shown by the reference in the report to "schemes for opening up St. Paul's as 'side issues.'" Surely this, the architectural or monumental question, is to Londoners generally one of the most important questions of the case. It is on this that artists and public men joined hands, and that the House of Commons took the action that it did. It is a matter of regret that, with the exception perhaps of Mr. Colcutt, the consulting architects have not seen their way to placing themselves in line with the reiterated artistic opinion of the country. That opinion will be maintained not less strongly than before, in spite of the consulting architects' report.

July 12.

TRADITION.

THE ARCHITECTURAL ASSOCIATION: SECOND SUMMER VISIT.

THE intense heat was probably responsible for the small attendance at this interesting visit, which took place on Saturday, July 8, to Hill Hall, near Epping, by kind permission of Mr. C. E. Hunter. A pleasant drive of about three miles from Epping Station leads to the Hall, which occupies an ideal situation on the level summit of a plateau commanding wide views in every direction over the well-wooded surrounding country. Its position is, indeed, remarkable, most Elizabethan builders having apparently preferred sheltered sites, but it is possible that the house which preceded the present one may have been placed for defence. The approach is by a very wide avenue with broad grass margins, centrally with the main entrance, which is from a carriage court surrounded by a low wall with piers. The general outlines of the house's history are at once apparent from the north or entrance front. The present building was erected by Sir Thomas Smith, who, in 1548, married the widow of the former owner, Sir John Hampden, and bought the reversion of the property. This worthy had an astonishingly varied Court career, extending through the reigns of Henry VIII., Edward VI., Mary, and Elizabeth. It says something for his capacity that, though loyal to the interests of the Protector Somerset, and falling with him, in 1550 he is again found in Royal employ under Mary. In 1557 he retired for a while and began to rebuild Hill Hall, but under Elizabeth he became Ambassador to France,

where he remained four years. It is recorded that in 1568 he began to build the north and west sides of the house "stronger and more splendidly." In 1577 he died childless, and was buried in Theydon Mount Church, being succeeded by his nephew, from whom the present non-resident owner of the property is the direct descendant. Although the core of the house is Elizabethan, and a considerable amount of work of this period is still visible both externally and internally, the general effect is Georgian, and dates from the time of Sir Edward Smyth, the third baronet, who, in 1714, remodelled the house and completely rebuilt the east front.

The plan is quadrangular and is effectively laid out, but, while the external design of the building in its general lines is also good, its detail is poor and coarse in most cases. The entrance front is in the main Elizabethan work, and follows the local custom (during the Middle Ages) of having its excellent brick construction decorated by dressings in cement in imitation of stone. This method has been carried on in the later work, and it is possible that it is partly from the limitations of the method and partly from renewals that the mouldings and enrichments generally are so poor in quality. The texture of the old brickwork has been ruined by cleaning and pointing. The entrance is by a flat-pointed archway under a Georgian colonnaded projecting portico, above which is a group of three millioned windows, with two sturdy Elizabethan chimney-stacks on either side; yet the imposition of a Georgian cornice and pediment surmounted by a quaint cupola successfully binds the whole into a not unpleasing composition. The east and south fronts face spacious lawns. Immediately surrounding the house on these fronts is a wide expanse of York flagging laid level with the turf with admirable effect. The east front is entirely Georgian, with central pediment containing the arms of Sir Edward Smyth and his first wife, Ann Hedges; it is two stories in height, surmounted by a balustrade with urns, and having an Order of Doric columns on lofty pedestals, which, by reason of the wide-spreading base mouldings used, actually appear to fulfil their real purpose of buttresses. The south front, also two stories in height, is topped by a steep roof with fine chimneys and Elizabethan dormers. Here, again, however, the whole is welded together by the erection of square topped, three-storied, Georgian towers at the S.E. and S.W. angles, which, projecting on the southern side, enclose a delightful recessed terrace on the south front. The west front is relatively modern and in part unfinished. In the internal courtyard is some truly weird detail of superimposed Orders, distinctly not in accordance with rule.

Internally there is much good detail in panelling and joinery of the Georgian period.

There are three fine staircases of varying dates, the latest an exceptionally spacious one with bracketed string and delicately-contoured twisted balusters. The Hall is two stories in height, and extends through the full depth of the building from south front courtyard, the first-floor corridor being effectively carried through it by an open colonnade along the courtyard side. A panel high up at the west end has the arms of Queen Elizabeth. A very fine Georgian chimney-piece, which originally stood inside the Elizabethan chimney-piece of the Hall has now been removed to the first-floor corridor. The house is full of fine old furniture, including some splendid specimens of Venetian and French work, and also contains numerous masterly water-colours (including one of the balustrade and baytree on the south terrace) and several portraits by Mr. J. S. Sargent, which alone were worth the visit to see.

Before returning to town a short visit was paid to St. John's Church, Epping, a characteristic work of the late Mr. G. F. Bodley, R.A.

The church has a nave of five bays, and chance of two bays with a shallow sanctuary. The arcade is lofty and there is no clear-story or chancel arch, the barrel roof running without interruption from east to west. The west end has a pair of windows, while the chancel, screened and sumptuously fitted, has a large traceried window above the lofty coloured and gilded triptych. All the external details are on an extremely bold scale, and this is particularly true of the tower, which was completed as recently as 1908. It occupies an unusual and singularly effective position (in view of the site) at the south-east of the sanctuary, entirely detached from the main walls, though united to the church by a corridor and low clergy vestry, the base of the tower serving as a choir vestry. It is all extremely fine architecture, though very unlike any traditional Essex work. The angle of the tower bears the appropriate text, "A city set on a hill cannot be hid."

ARCHITECTURAL SOCIETIES.

The Royal Institute of the Architects of Ireland.

The following is "The Humble and Loyal Address of the Royal Institute of the Architects of Ireland to Their Most Excellent Majesties King George V. and Queen Mary."

"May it please Your Majesties. We, your dutiful subjects, the President and Council on behalf of the Royal Institute of the Architects of Ireland, beg leave humbly and respectfully to approach Your Majesties with the expression of our loyal welcome on the occasion of Your Majesties' visit to Ireland,



House at West Bay, Dorset.

Messrs. Crickmay & Sons, Architects.

and to tender our most devoted and dutiful homage.

We confidently believe that the profession to which we belong, and which is so intimately associated with the progress of science and art throughout the Empire, will, under Your Majesty's beneficent rule, flourish in a long era of unbroken peace.

We earnestly trust that Your Majesty and our gracious Queen may be granted a long and glorious reign, and that we, your subjects, may have the felicity of extending our dutiful welcome frequently in the years to come.

Signed, on behalf of the Council,
ALBERT E. MURRAY, R.H.A.
(President),
(A. OWEN, F.R.I.B.A.
(Hon. Secretary)."

HOUSE AT WEST BAY, DORSET.

THIS house is situated on the slope of the hills at West Bay, Dorset, overlooking the English Channel. It is built of Purbeck stone and covered with Lawrence's dark tiles.

The contractors are Messrs. Wakeham Bros., of Plymouth, and the architects Messrs. Crickmay & Sons, of Victoria-street, Westminster, S.W.

ENGINEERING SOCIETIES.

The Society of Engineers (Incorporated).

The third vacation visit of the present session took place on the 7th inst, when, by permission of the Associated Portland Cement Manufacturers (1900), Ltd., a number of members of the Society and their friends visited the Swanscombe Northfleet Cement Works. It was at Northfleet that the earliest cement works were erected by the younger Aspdin, whose father had invented the product in 1824, and subsequently other works were erected by firms whose names have since become world-famous. The majority of these firms were combined in one company in 1900. The district in which these works are situated is peculiarly adapted to be the centre of the cement industry on account of the presence of unlimited supplies of chalk and clay, an ample quantity of fuel, and ready access to all parts of the world through the Port of London. The visitors were shown the chalk quarries adjoining the works, and the clay brought from the Medway. The amalgamation of chalk and clay in definite proportion is effected by batteries of washmills, the resulting slurry passing through a screening mill in a finely-divided state. The slurry then passes into the large mixing and storage tanks, and is finally pumped into rotary kilns, in

which the contained water is evaporated, and the dry material thus obtained is heated up to a temperature of about 2,800° Fahr. The hot clinker then passes through rotary coolers, which extract the heat, and from thence is delivered to the grinding mills, in which the clinker is reduced to a very fine powder. During the final stage of the grinding process steam is injected into the mill, subjecting each particle of cement to a repeated process of superficial hydration, thus regulating the setting time, and turning out the cement in a condition for immediate use, thereby obviating the trouble of turning over the cement before use on the site of works. The visitors were shown the cooperages, where casks for packing cement for export are made by machinery, many of the machines being of a special character, and patented by the company. Tea was provided by the company for their guests at the conclusion of the visit, after which a vote of thanks to the company for their courtesy was proposed and heartily accorded.

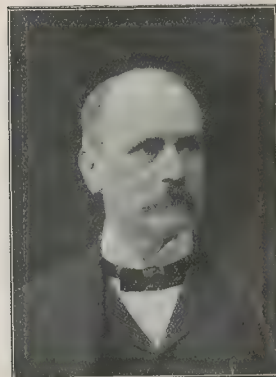
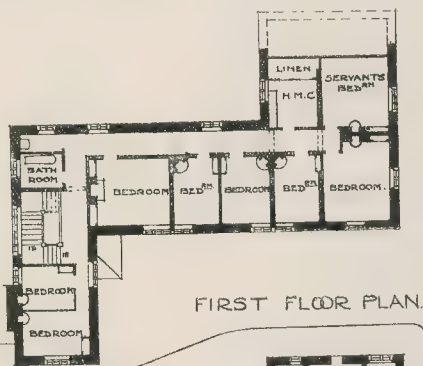
GENERAL NEWS.

Professional Announcement.

Owing to the retirement of Mr. William Eade, the partnership hitherto subsisting between him and Mr. E. Thos. Johns, Architect and Surveyor to the Ipswich Education Committee, has been dissolved. Mr. Johns' practice will be continued as before: his new address is 8, Lower Brook-street, Ipswich, and his telephone number 669.

The Royal College of Science, Dublin.

The Royal College of Science, Merrion-square, Dublin, the foundation-stone of which was laid by King Edward, was opened by King George on Saturday, July 8. The



Sir Thos. Manly Deane, B.A., R.H.A.

buildings, illustrated in the *Builder*, 1906, September 29 and October 13, are the work of Sir Aston Webb, R.A., and Mr. T. Manly Deane, R.H.A., on whom a Knighthood was conferred at the recent ceremony.

Men of the Day.

In the issue of *Vanity Fair* for July 5 some particulars are given under this heading of the career of Mr. Frank Matcham, the architect of a number of recent theatre buildings. A coloured portrait supplement is given in the same issue, the title of which is "Architect Matcham."

Department of Architecture, University College.

An exhibition of drawings and designs made by the students in the Department of Architecture at University College will be held from Friday, July 21, to Saturday, July 28, inclusive. The exhibition will be opened on Friday, July 21, at 5 p.m. by Mr. Leonard Stokes, F.R.I.B.A., President of the Royal Institute of British Architects. Tickets for the opening ceremony can be obtained from the Secretary of University

C 2

House at West Bay, Dorset.

Messrs. Crickmay & Sons, Architects.

College. The exhibition will be open on weekdays from 10 a.m. to 5 p.m. on the days following the opening to July 29. Tickets of admission are not required except for the opening ceremony.

University College Chemical Laboratories.

At the recent prize distribution at University College, London, the Provost read a letter which had been sent to Prince Arthur of Connaught, as President of the Appeal Committee, on behalf of the proposed new chemical laboratories, by Mr. R. C. Forster, announcing a further gift of 30,000l.

Pumping Station for the London Hydraulic Power Company.

The latest of the Company's five pumping-stations for the supply of hydraulic power in London is situate in Grosvenor-road, Westminster, about 300 yds. westward of Vauxhall Bridge. It has a frontage to Grosvenor-road, and extends for a depth of 470 ft. therefrom, comprises reservoirs for water-settling, engine-house, boiler-house, hydraulic accumulator tower, coal store, filter-house, overhead tanks, wharf and coal handling plant, boiler-feeding water softening and measuring plant, influx, efflux, and hydraulic pipe subway, with a subway under Grosvenor-road connecting the pumping station with the river wharf, together with resident foreman's house, men's messroom, workshop, storeroom, foreman's office, and sundry appearances. The Chief Engineer to the Company is Mr. E. B. Ellington, M.Inst.C.E., Westminster.

Public Library, New York.

The New York Public Library in Fifth-avenue and Forty-second street was recently opened by President Taft. The building was designed by the late J. M. Carrère and his partner, Mr. Thomas Hastings, and has cost more than 2,000,000l. There is room on the shelves for four million volumes; the site, valued as worth some 4,000,000l., was given by the municipal authorities, who also defrayed the cost of the fabric, which was begun ten years ago.

Report of the Joint Committee on Reinforced Concrete.

The Joint Committee on Reinforced Concrete have now completed their second report, and it will shortly be on sale at the Royal Institute of British Architects. In an introductory note the Committee state that since the issue of the first report in 1907 the use and knowledge of reinforced concrete for architectural and engineering constructions have steadily increased. It therefore appeared desirable that it should be reconsidered in the light of further experience, and this second report is the result of the Committee's labours. The section on "Materials" has been modified in certain details. The section on "Methods of Calculation" has been recast in form, and the standard notation (proposed by the Concrete Institute) has been adopted. The sub-section on "Columns" has been revised, and the formulae proposed have been recast, so as to include the cases in which the lateral or helical binding is a material factor in the strength. The suggestions which have been made from time to time by institutions and individuals have been of much value and have been fully considered. Professor Unwin, F.R.S., Captain J. Gibson Fleming, R.E., and Messrs. Wm. Dunn and E. Flinder Petre contribute appendices. The size of page has been reduced for convenience of handling, and the work will be issued in stiff covers at the price of 1s.

Parish Church, Carshalton.

A pageant was held last week (on July 5-8) in aid of the Completion Fund of All Saints' Church. The church, with the exception of the chancel, south aisle, and tower, has been rebuilt during the past few years, at a cost of 13,000l., after designs by Sir A. W. Blomfield, which provided for the erection of a new chancel, vestries, organ-aisle, and nave, and the restoration of the old chancel for use as a chapel. The low embattled tower, constructed of rubble stone and flint, stood between the chancel and nave, and it is believed that the chancel was the original church, the nave having been added temp. Richard II., and extended temp. William III. In the church were set up a monument—with an effigy by Rysbrack—to Sir William Scaven, and an altar tomb, temp. Henry VII., to Sir Nicholas Gaynes-

ford, his wife, and children; the figure of Lady Gaynesford is remarkable for a very large headdress.

Proposed Building Over a Burial Ground.

At a sitting of the Consistory Court of St. Albans, held at Chelmsford on July 7, a petition was preferred by the Rector and Churchwardens of St. Mary's, Chelmsford, for a faculty consenting to the erection in the churchyard of columns to support an iron staircase for purposes of an emergency exit from the Shire Hall, which abuts on the burial ground of the church. Mr. A. B. Kempe, Chancellor of the Diocese, decided that he had no power to grant the faculty prayed for, inasmuch as the Dissused Burial Grounds Act prohibited the erection of any building over a dissused burial-ground saving for the extension of a church, chapel, or meeting-house.

Kingswood Estate, Surrey.

The Walton Heath Land Company, Ltd., have bought from Mr. C. Bonsor an estate of about 650 acres, near Walton Heath. They propose to convert the property into a residential estate, with houses to stand within their own grounds of from ½ acre to 1 acre in extent. The houses will be of a more expensive kind than those which are usually built on such properties, and some are ready for occupation.

All Saints' Church, Highbury.

At a sitting of the Consistory Court of London on July 5, Dr. Tristram, K.C., Chancellor of the Diocese, granted a faculty for the enlargement of this church by the addition of a north aisle and vestries, and an extension of the chancel, at an estimated cost of 2,500l. The new buildings will be erected, in part, in the churchyard, which is unconsecrated and has not been used for interments. The church was built in 1863-4, after the designs, we understand, of Sir A. W. Blomfield.

The Quantity Surveyors' Association (Incorporated).

Mr. C. W. Ball, M.S.A. (Southsea), has been elected President of this Association for the ensuing year, and Messrs. T. J. Carless and Henry Riley, Vice Presidents.

COMPETITION NEWS.

Manchester Art Gallery Competition.

As a reply to several letters published in the *Manchester Guardian* taking exception to the assessor's decision in the preliminary competition for the Art Gallery, a number of Manchester competitors have signed a joint letter stating that they consider that the Corporation has conducted the competition on excellent lines, and that there is nothing in the assessor's report that would lead them to think that the selection of the ten final competitors is anything but a fair one. We understand that it is strongly felt by many architects in Manchester that, although there are minor points in the assessor's report which may not commend themselves to them, the competition as a whole meets with their approval, and it is a very unfortunate occasion upon which to pile up minor grievances against the assessor, calculated to discourage the appointment of a professional adviser by public bodies in the future.

Clydebank Public Library.

We learn from the *Glasgow Herald* that at a recent meeting of the Clydebank Town Council it was reported that fifteen designs had been submitted for the new public library, and that Mr. James Miller, A.R.S.A., architect, who was appointed assessor, recommended that the designs of Messrs. Gardner, Miller, & White, Glasgow, should be accepted. "The Library Committee by a majority approved of these plans, subject to their being submitted to the inspection of a librarian. An amendment was moved that the plans of Messrs. Stewart & Paterson, Glasgow, be adopted. On a division the plans of Messrs. Gardner, Miller, & White were agreed to by six votes to five." An award which is subject to the opinion of the commissioners untrained in architecture seems rather inglorious.

Church Schools, etc., Doncaster.

In a competition recently held for a new Unitarian church, schools, lecture hall, and institute at Doncaster the scheme submitted

by Messrs. A. J. Dunn, F.R.I.B.A., and J. Bernard Mendham, of Birmingham, was adopted, and the architects have been instructed to proceed with the work.

International Exhibition at Tokio in 1917.

The "Bulletin Commercial" (Brussels) states, on the authority of the Belgian Consul General at Yokohama, that the Committee of the International Exhibition to be held at Tokio in 1917 have opened a competition for the general plan of the exhibition installations. One prize of 3,000 yen (about 306l.), two of 2,000 yen (about 204l.), and three of 1,000 yen (about 102l.) may be given. Foreigners may compete. Proposals will be received up to September 30 next at the office of the Grand Japanese Exhibition, Department of Agriculture and Commerce, Kobikicho, Kyohashi-Ku, Tokio.

Capital City at Canberra, N.S.W.

Particulars of this competition have been printed in the *Builder*, and, with premiums amounting to 3,000l., many architects will desire to consider the matter. We suggest, however, that intending competitors will be wise to defer putting their ideas into shape until full investigation has been made into the conditions. The Competition Committee of the Royal Institute of British Architects are pursuing inquiries, and until a report is made the scheme cannot be recommended. It will be noticed in the conditions, among other unsatisfactory clauses, that "the designs will be submitted to a Board consisting of an engineer, an architect, and a licensed surveyor," who are unnamed; then the Minister of State will adjudicate upon the designs, such adjudication to be final and without appeal. In the first place, it may be doubted if the professional advisers to be appointed will be of sufficient standing to give confidence to competitors that their designs will be adequately studied; and, in the second place, no architect of worth will submit to the condition that his ideas are to be judged finally by a layman who is primarily a politician.

BOOKS.

British and Foreign Building Stones. A Descriptive Catalogue of the Specimens in the Sedgwick Museum, Cambridge. By JOHN WATSON. (Published by the University Press, Cambridge.)

MR. JOHN WATSON'S treatise on this subject, which has been published by the Cambridge University Press, comprises, *inter alia*, a descriptive catalogue of the specimens of building stones of all countries, recently collected and arranged in the Sedgwick Museum at Cambridge.

Although primarily intended for the use of students of geology, the work contains a vast amount of valuable practical information relative to the colour, texture, weight, crushing strain, porosity, and other characteristics of building stones, which should cause it to be regarded as a welcome addition to all architectural libraries.

The descriptive notes, which precede the catalogue, include the names and dates of erection of many important buildings in which some of the various building stones collected in the Museum have been used.

Each specimen of stone placed in the Museum bears a label containing the following particulars, viz.:

- (1) The name by which the stone is best known to commerce.
- (2) The stratigraphical position of the stone, or, in the case of an igneous rock, its petrological designation.
- (3) The names and the locality of the quarry whence the specimen was obtained.
- (4) The name and address of the donor of the specimen.

As Mr. Watson points out in the Introduction to his work, "quarry owners, architects, and others" are not always in absolute agreement as to the designations by which a particular rock is recognised in the building-stone industry, nor "is the name adopted by them always in accordance with geological nomenclature." For example, in commerce, stones which have no affinity whatever with those rocks are frequently distinguished as granite, the "Petit Granit" of Belgium, which belongs to the carboniferous limestone, being a notable instance.

In addition to notes on the physical characteristics of a stone, its chemical composition is given in those cases in which it is known, and this notwithstanding the fact that chemical tests and analyses are often regarded as unreliable guides in determining the qualities of building stones.

But whilst recognising the fact that in many cases an analysis of its chemical composition is not, as a rule, so useful to the practical man as a knowledge of the physical properties of the stone with which he has to deal, yet Mr. Watson rightly lays stress upon its importance.

As an instance—"The atmosphere in and around large cities and centres of industry is usually charged with gases and impregnated with various acids. These acids, when caught by the falling rain are deposited in solution on the buildings, and often, by chemical action, cause a decay of the stone. It is, therefore, important to ascertain the chemical composition of a rock and thus arrive at its susceptibility to build under certain atmospheric influences."

The necessity of taking into account the two factors of weight and volume is lucidly pointed out. Thus, when stone is required for vaulting or other similar work, "the selection of one light in weight or of low density" is very desirable. On the other hand, in the construction of quay or dock walls materials of high density are requisite, because a stone when immersed in water loses a very considerable part of its effective weight. Furthermore, if "compared with its weight, the stone possesses a very large bulk, it presents a corresponding large surface to wave action, thus increasing the scope for field of disturbing force. The two factors of weight and volume must, therefore, be taken into consideration; they show that, the smaller the surface area of a stone and the greater its unit weight, the less likelihood there is of disturbance." In other words, the higher the specific gravity the greater the stability.

In the view of the author of the treatise under discussion, the test of compression or crushing strain is generally treated by architects and workers in stone with less consideration than it deserves, because whilst the resisting power of most building stones greatly exceeds the strain which they are usually required to support, yet the test is extremely useful as an aid in determining their weathering properties. For the durability of a rock is dependent either upon the manner of contact of the mineral particles of which it consists, or upon the strength of the particles themselves. And in the latter case its durability is determined by the strength of the weakest material, which is abundantly distributed throughout the mass. Thus if the interstitial matter between the grains of sandstone is weak or lacks cohesion, the stone will be disintegrated when subjected to abrasion or exposed to the influences of the weather, however strong the grains themselves may be. A rock may consist mainly of quartz grains, and yet be so soft as to crumble when compressed between the fingers, while another rock, having the same general composition in which the grains are firmly cemented together may be one of the most durable of stones.

Again, the test of porosity or ratio of absorption is one of extreme value and, as such, ought to be considered in addition to other physical features of building stones. Amongst resulting evils walls built of a stone possessing a high ratio of absorption are, of course, liable to be damp, and this is more especially the case if, in addition to being porous, the stone used is fine in texture, for water penetrates further, and is retained longer, in small cavities than in large ones.

On microscopic examination, such a stone will probably be found to contain minute fissures, through which water will be absorbed to a considerable depth by capillary attraction. Moreover, danger from frost depends not so much upon the amount of absorption as upon the size of the pores, and rocks with large pores stand frost better than those with small ones, because they do not retain the water which they absorb.

It is well known that, although a certain class of stone may have proved its durability in a particular building, yet it is not necessarily a guarantee that the same rock will give equally good results if employed for

structural work in another district, and Mr. Watson duly emphasises the fact in the following words, viz.:—"Geographical and meteorological variations have to be considered, for a sudden change of temperature is a powerful agent in the destruction of rocks, because, as a rule, stones possess low conductivity for heat and but slight elasticity. Rocks frequently reveal a tendency to decay when placed in a position which is much exposed to the sun, whereas the building remains perfect if it is shaded or has a northern aspect."

Two striking examples may be referred to—Somerset House, in London, built of Portland stone from the upper division of the Jurassic system in Dorsetshire, is much more decayed on the south side than on the north; and York Minster, built of magnesian limestone, is also more decayed on its southern than on its northern aspect."

A changeable climate may also affect the durability of stone, whilst the presence of corrosive substances in the air—or even of much moisture—will cause a rock to disintegrate more rapidly than it would in a purer or dryer atmosphere; and, although constructed with the same stone, buildings in the country, owing to a growth of lichens, which frequently covers the entire surface of the stonework, and thus affords some protection against the ordinary causes of decomposition, are often more durable than those in populous and smoky towns.

It is generally admitted that nearly all stratified rocks used for construction should be placed in the building with the bed of the stones as nearly horizontal as possible, and that the exposed surface should be formed by a cross-section of the natural divisional planes. Thus placed the stone is best able to resist atmospheric disintegration, inasmuch as it occupies in the artificial structure an approximately similar position to that which it originally occupied in nature.

This well-known principle is of such extreme importance as to render it incumbent upon those responsible for the carrying out of structural work in stone to be able to discriminate with absolute accuracy the plane of the bed of any building stone.

Although in many rocks the direction of the bed is easily distinguishable, in others, owing to their evenness of grain, it is extremely difficult to ascertain. Rocks known as "free-stone" are included in this latter category, and the chances of discrimination are minimised if, as is often the case, the stone is roughly trimmed down to a rectangular shape immediately after it has been quarried.

Most rocks, especially those of the limestone and sandstone species, undergo a process of hardening on exposure to the atmosphere after being quarried. This result has been explained on the supposition that the water with which the stones are permeated holds in solution or suspension a small amount of siliceous, calcareous, ferruginous, or clayey matter which, on exposure to the atmosphere, is drawn by capillary attraction to the surface of the block and evaporated. Thus the dissolved or suspended material is deposited, and serves as an additional cementing constituent to bind the grains more closely together."

Whether the theory be right or wrong, there is no doubt that the process of "seasoning," which, in this case, means hardening, is one that should invariably be insisted upon. It is on record that Sir Christopher Wren rejected any stone for use in the erection of St. Paul's Cathedral which had not been quarried and exposed to the atmosphere for three years.

We agree with Mr. Watson that colour forms an important factor, from an architectural point of view, in the selection of a building stone. The range of colours from which a selection can be made is an extensive one, and facilities for transport are now so great that a choice of colour can be secured for almost any neighbourhood. But, "although from a decorative point of view the beauty of stone depends on its effective appearance, to the architect and builder, as well as to the student of economic geology, there is a beauty in a good stone beyond that which appeals openly to the eye—a beauty more subtle, requiring a scientific as well as an artistic appreciation—the impression it gives of strength and suitability for its purpose."

Of the wealth of information contained in

the descriptive notes on British, colonial, and foreign building stones the space at our disposal does not admit of more than a few examples.

Under the section "Igneous Rocks (Plutonic)," the physical properties and chemical composition of British granite obtained from Cornwall, Devonshire, Westmorland, Cumberland, Leicestershire, Wales, the Isle of Man, Scotland, Ireland, Jersey, and Guernsey are concisely described, whilst under "Igneous Rocks (Volcanic)," notes are given upon the green slate stone obtained from the Borrowdale quarries in Cumberland, the Melrose Agglomerate, and Dolerites from Scotland, and the Tardree stone from Co. Antrim, Ireland.

Polyfant stone (Cornwall), Salcombe stone (Devonshire), and St. Catherine stone (Argyllshire), are dealt with under the section on "Metamorphic Rocks"; and that on "Sedimentary Rocks" comprises many of the geological formations known as the Cambrian and Silurian, Devonian and old Red Sandstone, Carboniferous, Permian, Trias, Jurassic, Cretaceous, Pleistocene, and Recent; and in the section on "Colonial and Foreign Building Stones" the same order is followed.

There is no doubt that Mr. Watson has produced an excellent manual upon a subject which, at least in its scientific and geological aspect is but little understood by the practising architect of our day, and we trust that his laborious efforts will meet with the prompt recognition and appreciation they deserve to receive from all who are interested in the study of building stones, which the author has presented in a form which appears to us to be at once scientific, practical, and interesting.

Tourist Guide to the Continent. Edited by PERCY LINDLEY. Illustrated and with maps. (London: 50, Fleet-street, E.C., and 124, Regent-street, W. Price 6d.)

This useful little work is the Great Eastern Railway Company's new illustrated *Tourist Guide to the Continent*. Amongst its features are particulars of new tours, *via* Holland, in North Germany, including the Harz Mountains and Thuringian Mountains; in South Germany, of the less-known side valleys of the Rhine; in Belgium, *via* Antwerp, of fresh tours in the Ardennes and old Flemish cities, and a series of continental maps. A chapter on "Tourists' Travel Talk," a vocabulary in English, French, and German, has been added.

Arc Lamps and Accessory Apparatus. By J. H. JOHNSON, A.M.I.E.E. (London: Constable and Co., Ltd. 1911. Pp. 132. 1s. 6d. net.)

THIS is another of Constable's electrical installation manuals, written for the benefit of contractors, wiremen, and engineers. As a guide to the choice of arc lamps for particular requirements the book should be generally welcomed, although it should be noted that several varieties of arc lamp are not mentioned. The notes of the author are of practical nature, and mathematics have been purposely excluded. We are sorry to see that the policy of exclusion has also been applied to the index, which ought always to be considered an essential adjunct to technical handbooks.

FIFTY YEARS AGO.

From the *Builder* of July 13, 1861.

The Foreign Office Designs.

IN the Commons, on the 8th inst., before the House went into committee of supply, a long and amusing discussion took place on the question (if it can still be called a question) of the style of the design for the new Foreign Office; involving, of course, a re-consideration of the respective merits of the Gothic and Italian styles of architecture.

Lord Elcho commented with some severity upon what he called the Palmerstonian style of architecture, and urged that Mr. Scott's design, or rather Lord Palmerston's, was altogether unsuited to the country, the climate, and the purpose to which it was to be devoted; and that a pure Gothic was that of which the country would approve. Mr. Scott had fallen into error in allowing himself to act as the mere draughtsman of the noble lord at the head of the Government.

EDITORIAL SUMMARY.

Our leading article, "An Interesting Experiment," deals with a report of the developments that have followed the opening of the first portion of the Protestant Episcopal Cathedral, New York.

Our second leading article (p. 32) is on "The American Academy in Rome," dealing with the scope of the newly-organised Academy.

Notes (p. 32) include: "As Others See Us"; "The Teaching of Art"; "London County Council Cottages Purchase Scheme"; "St. Paul's Bridge"; "Carnarvon Castle."

A Select Committee of the House of Commons has been considering this week the Bill for constructing a new bridge across the Thames at St. Paul's Cathedral. A report of the proceedings and the report of the three architects consulted by the Corporation in regard to the scheme will be found on p. 33.

Some notes of a visit of the Architectural Association to Hill Hall, near Epping, and to the Church of St. John, Epping, will be found on p. 36.

Book Notices (p. 38) include: "British and Foreign Building Stones."

Correspondence (p. 40) includes letters on: "Builders' Tools in the Middle Ages"; "Questions for Builders"; "National Insurance and Housing."

The Monthly Review of Construction (p. 43) contains: "Notes on Some Definitions used in Constructional Mechanics" (with diagrams); "North Surrey Schools, Anerley"; "Exhibition Buildings"; "Compressed System of Foundations"; and Notes.

The Building Trade Section (p. 47) includes: "Scaffolding; Telescopic Towers and Masts"; "The Medieval Builder's Labourer"; "Projected New Buildings in the Provinces"; "Applications under the 1894 Building Acts," etc.

A brief report of the opening proceedings of a Town Planning Conference at West Bromwich will be found on p. 51.

Law Reports (p. 51) include: "Dispute as to a Party Wall"; "Contractor's Action against Building Owner";

MEETINGS.

THURSDAY, JULY 13.
Northern Architectural Association. Annual excursion to Wymondley Hall and grounds. Meet at Stockton Station at 11.12 a.m. Visits to Stockton Parish Church and churches at Billingham and Norton.

WEDNESDAY, JULY 19.
Northern Architectural Association. Annual excursion.

FRIDAY, JULY 21.
Architectural Association. Annual exhibition of students' work. 3 p.m. to 6 p.m.

SATURDAY, JULY 22.
Institution of Municipal Engineers (Eastern District). Annual meeting at Goode's Hotel, Marine-parade, Yarmouth. 2 p.m. A paper, "Construction, Maintenance, and Repair of Highways," by Mr. W. Astley Norris, Surveyor to the Swaffham Urban District Council, will be presented for discussion.

CORRESPONDENCE.

National Insurance and Housing.

SIR, As so many of your readers are deeply interested in and have a practical knowledge of the housing problem, may I be permitted to ask for their consideration of an aspect of the National Insurance Bill, which, so far as I have seen, has not hitherto received much attention? I refer to its probable effect upon the provisions of houses for the class of persons on whose behalf the Bill is promoted—"employed persons" whose income is below 160*l.* a year.

Would some of your expert readers examine the following particulars to ascertain how far they correspond with experience? If they are approximately correct, it would seem that the employer's contributions, in so far as they concern the "housing of the working

classes," will ultimately be met by an increase in rents, without being of any benefit to anyone concerned, whether employer, workman, or property-owner. An exception should perhaps be made in the case of the owner of existing "slum" tenements, whose function of "sweating" property always finds its opportunity for exercise when there is a tendency towards increase in the rents of new decent dwellings.

I do not propose to refer to the 51st clause (really a property-owner's question), which, if not materially altered, must add enormously to the rents. But this will occur after the builder has ceased to have any direct interest in the property. The difficulty is obvious of framing any scheme to prevent the sick benefit from becoming in practice a grant in aid of rents; whilst, on the other hand, any curtailment of the power of the landlord to recover rent must increase the rent by the insurance value of such risk of loss. I am only concerned, however, at the present moment with the effect of the employer's contributions in increasing rent.

The matter suggests itself to me in the following way:—

If the employer is a builder, his contribution is 5*sd.* in respect of every payment of one week's wages (sometimes of part of a week). If the average wage of all his employees is 30*s.* a week, the addition to the cost of wages (with about 10 per cent. profit) would be 1½ per cent.

If the employer is a manufacturer of building materials and the average weekly wage which he pays is 22*s.*, the new impost (with manufacturers', merchants', and builders' profits) will result in about 1½ per cent. being added to the cost of the materials in the house.

Now, supposing, as in the London County Council block buildings, the building cost per room averages 120*l.* and the cost of labour and materials is two to one, then:—

1½ per cent. on 80 <i>l.</i> for labour is	£ s. d.
1½ per cent. on 40 <i>l.</i> for materials is	1 8 0
	0 12 0
Total	£2 0 0

To provide for this additional outlay would involve an addition to the rent of two, three, or more rooms of from 2*d.* to 3*d.* a week, if no increase is made to the single-room rents.

Supposing it is the case of the speculating builder, who is really the chief purveyor of housing accommodation in the suburbs. He builds a house to sell at, say, 230*l.*, with a ground-rent of 5*l.* 10*s.*, or lets it to a weekly tenant at 12*s.* The building cost may be apportioned as follows:—Profit, 20*l.*; cost of labour, 140*l.*; cost of materials, 70*l.* Whether there is another profit on the site value does not concern this question. But on the building cost the addition will be:—

1½ per cent. on 140 <i>l.</i> for labour is	£ s. d.
1½ per cent. on 70 <i>l.</i> for materials is	2 0 0
	1 1 0
Total	£3 10 0

To maintain the same ratio between building cost and rent will involve an addition to the latter of 2*d.* per week, which in practice would tend to become 3*d.*

It may be urged that all these extra costs will, as the result of competition, be paid out of profits. But competition has already exerted all the influence it can, with the result that the standard of the house provided by speculative builders has steadily risen. The only fresh element of competition is in the exemption of foreign-made materials from this new charge, thus penalising the British-made goods.

The ultimate effect of the employers' contribution would thus appear to be either a deterioration in the quality of the house or an increase of rents.

I have written with a view to London conditions; if some of your readers would consider the question under the conditions prevailing in other parts of the country it might prove useful. J. WALLIS CHAPMAN.

Builders' Tools in the Middle Ages.

SIR,—In the interesting article in your last issue, the wimple or wimble is said to be an early form of bradawl.

This is an error. It is still in use, and called by the same name by boat-builders and wood shipwrights in the west and Midlands.

It is an early form of brace, but with a fixed bit made entirely of wood.

No doubt the brace and movable bits is an improved wimble.

The latt axe is the plasterer's latt hammer—a short tool for use with one hand, a small axe at one end and a hammer at the other end of the head. Latt is still the north-country name for lath.

The hod had a short handle till quite the middle of the last century for ease of filling. The labourer put the handle of the shovel between his legs, and, holding his hod with one hand, filled the hod with the other hand. Gloucester. ROBERT PHILLIPS.

Questions for Builders.

SIR,—Builder's Manager's letter opens up a subject which needs very ample discussion. It is neither to the benefit of builder or public that hampering regulations or practices should be recognised, whatever their source.

Responsible officials and most architects of standing do not go out of their way to prejudice the interests of reputable builders. The question is, Where do these practices begin? The matter should be discussed freely, for it is desirable that the builders who have reputations to lose should not be sickened by the multiplying difficulties. It will be conferring a benefit if the *Builder* will open its columns for discussing the matter. JUSTITIA.

INTERCOMMUNICATION COLUMN.

Discharge from Pipes.

SIR,—Can you please tell the discharge per gallon per minute through a 6-in. diameter glazed pipe laid level its whole length of 260 ft., and having six bends in same? These may not matter, the head of water not more than 1 in. above top of pipe at inlet.

I really want to get a supply of 250 to 300 gallons per minute under circumstances named, and must I use 6-in. pipes, or what size? E. FORTRETON.

* The following are discharges calculated for pipes of different diameters with 1 in. head, allowing for loss of head by six bends:—

Diameter of Pipe.	Gallons per minute.
6 in.	37
8 in.	107
12 in.	230
14 in.	340

It would be advisable to raise the level of the supply pond if possible, so as to secure a greater head of water.

In any event, care must be taken in executing the work to see that the conditions stated are duly complied with.

ILLUSTRATIONS.

National Library of Wales, Aberystwyth.

THE foundation-stone of this building is to be laid by his Majesty King George V. to-morrow (Saturday) on a site consisting of 4 acres of land on a hill quite near the town. The position of the site, its height above the level of the new approach road from Penglais Hill, with the necessary steps and terracing as a base, called for a frontage line of buildings as strong as extended as possible.

The central block, containing the administrative offices, with the main entrance and great flight of steps to it, is therefore flanked on each side by the library hall and exhibition gallery blocks respectively. Beyond, on the north, the line is extended by the domed refreshment and heating building with its portico ending the upper terrace, and to the south by the librarian's residence and a small memorial hall, the length of the whole frontage extending to more than 500 ft.

The main block of buildings as designed will form four sides of a square, with a frontage of well over 250 ft., and a depth of the same dimension. The smaller blocks are grouped around and extend beyond these dimensions. The central part of the front block will consist of administrative offices and the main entrance

leading to a public hall in the centre of the quadrangle. From this central hall access will be obtained (1) to the great library hall on the north-western side; (2) to the exhibition block on the south-eastern side; and (3) to the Department of MSS., which will be built diagonally across the quadrangle.

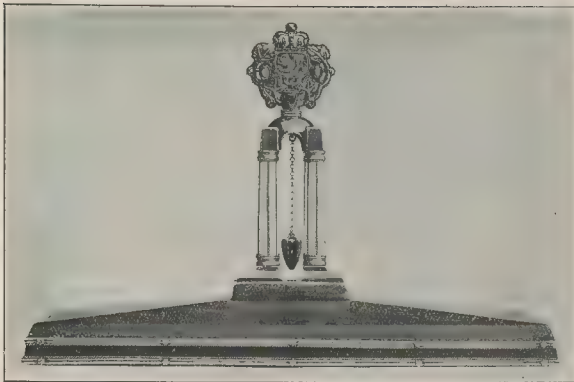
The principal book storage is provided by means of "book-stacks," which will form the fourth side of the square block of buildings. The first stack will provide room for about 425,000 volumes; and two further stacks of nearly the same capacity can be erected beyond the first whenever required.

Opening out of the main hall and the exhibition hall, the architect, Mr. Sidney K. Green-slade, A.R.I.B.A., whose designs were selected in a competition limited to six nominated architects, has arranged for a series of buildings suitable for storing special collections of exceptional value, which it may be desired to keep together; and it is hoped that, as time goes on, possessors of very fine collections of books will give or bequeath them to the National Library, where they will become permanent memorials of their owners.

The great library hall will be in length 165 ft., the width 47 ft., and the height 38 ft. The books will be stored in alcoves around the room, with galleries above, the width of the hall between the alcoves being 27 ft. Tables for readers will be arranged in the centre of the hall and in the alcoves on each side. This part of the building will provide storage for 150,000 volumes.

The central portion of the building forming the main front will contain the administrative offices, and will include a Council chamber, rooms for the President and the Librarian and other members of the administrative staff. The principal entrance will be in the centre of this block, leading by a wide corridor to the central hall.

The octagonal central hall will be 42 ft. in diameter to the walls, and 25 ft. between the



Level for Use at the Ceremony of Laying the Foundation-Stone of the National Library of Wales, Aberystwyth.

Designed by Mr. Edward Spencer. Made by the Artificers' Guild.

columns. The corridors also extend from the central hall to the library hall, to the MSS. department, and to the print-room, with staircases on each side leading to the exhibition-room. On the first floor the gallery behind the columns, which may be used for special exhibition purposes, connects the whole of the upper floors of the building. The height of the central hall to the crown of the ceiling will be 50 ft., and 75 ft. externally from the ground level to the top of the cupola.

The central hall and its approaches have been so designed as to offer facilities for the display

of sculpture in the form of statues, busts, portraits, and other memorials of eminent Welshmen and Welshwomen, and great benefactors to the library. Special positions in the grounds and on the terraces surrounding the buildings have also been arranged for memorials of larger dimensions.

The MSS. department has been arranged to secure the maximum of security against perils of all kinds, together with abundance of light and quiet. The reading-room for this department is placed in the centre, with stacks for the storage of MSS. on each side



Royal Trowels and Mallet for Use at the Ceremony of Laying the Foundation-Stone of the National Library of Wales, Aberystwyth.

Designed by Mr. Edward Spencer. Made by the Artificers' Guild.

and in galleries above, and when complete these will allow of the storage of between fifty and sixty thousand MSS. A room for the keeper, and another for the exhibition of interesting MSS. requiring special protection, are arranged near the MSS. reading-room. The first contract includes one of the MSS. stacks.

The south-east block will consist of three floors. The lower floor will be used for the storage of a library of duplicates, available for circulation throughout the thirteen counties, and possibly to scholars and students residing beyond those limits. The main floor will contain the collection of prints, drawings, maps, and plans, and the general art library, with tables for readers. The upper floor will be an exhibition gallery, where interesting and rare books, fine buildings, prints and drawings, and other exhibits within the limits of the Charter, will be displayed. This block is of the same dimensions as the library hall.

The lower floor runs beneath all the buildings already described. This floor will be over nearly the whole of its area, above the ground level, which will enable it to be perfectly lighted, and it will be appropriated to the storage of bound newspapers, specifications of patents, Parliamentary papers, etc., with receiving, packing, and storage rooms for the whole building.

Throughout the building a standard height of 7 ft. 6 in. from gallery to gallery, including book-stacks, and of 15 ft. for the height of rooms, has been adopted, which produces a dead level of floors throughout and will enable a book-truck to be wheeled easily round the entire buildings.

The whole of the buildings will be of fireproof construction, and to secure the utmost safety the heating and lighting plant will be in a detached building, together with workshops, a book bindery, and a small printing office, for printing catalogue cards, etc. The caretaker's residence will also be a separate building.

It is necessary for the proper safeguarding of the building and its contents that a respon-

sible officer should always be in residence close by, and a house for the librarian will be erected on the south-east side, detached from the main building. The other building shown by the architect in the group of buildings is a suggested memorial or lecture hall. This, however, is not at present included in the scheme of buildings.

The total cost of the whole scheme of buildings, terraces, and roads, including a sum of 300,000*l.* for the provision of the book-stacks when required, is estimated to be from 150,000*l.* to 230,000*l.*, of which it is proposed to spend from 75,000*l.* to 100,000*l.* as quickly as possible in order to provide for the immediate and pressing needs of the library, and a first contract has already been let, and the work commenced for the erection of the library hall and a part of the MSS. department, involving, with certain supplementary work for roads, architects' and surveyors' fees, legal and other expenses, and the provision of the necessary fittings, bookcases, and furniture, which are not included in the contract for the buildings, an expenditure of about 45,000*l.*

Nearly two years have elapsed since the design for the National Library was selected by Professor Reginald Blomfield, A.R.A. Since then much time has been spent on the study and development of the scheme. Illustrations of Mr. Greenslade's original design appeared in our issue for June 19, 1909. Although nothing has been altered in regard to the principle of the plan, yet the scheme as adopted is a very much larger one than was dreamed of at first.

In the competition design the total length of the main frontage line was only about 200-0 ft.—it is now 265-0 ft., with a depth of 300-0 ft. to the back of the second stack, and the same proportional increase has been maintained everywhere. Fortunately, through the generosity of the Right Hon. Lord Rendel, the sill has been practically doubled in extent. The whole frontage from the domed block on the extreme left to the proposed Memorial Hall on the extreme right will be nearly 750-0 ft.

The whole of the central portion of the block with the quadrangle in the original plan was kept on the level of the ground floor only. Now it covers the whole of the upper floor also, thus giving much greater accommodation, and helping architecturally the dignity of the design.

The handle of the trowel used in laying the foundation-stone of the building is of carved ivory with mouldings of silver let into grooves in the surface, into which also Tudor roses of crimson translucent enamel, over fine gold are set between groups of gold rivets; it is mounted at the upper end with a silver crown of vine foliage and stems, with a band of silver moulding enriched with rubies and surmounted by an amethyst globe; it is connected with the silver stem by a band of silver set with rubies. On the blade, which has a thickened edge, there is a wreath of oak leaves and acorns each separately repoussed, and silver soldered to the stem. In the centre of the wreath is a circular panel with the legend engraved in Georgian script, and this is bordered by a composite twisting of gold and silver vines set with emeralds, cabochon cut. The shoulder of the blade has a chased border of rose leaves and flowers above a carved Welsh inscription.

Designed by Mr. Edward Spencer, of the Artificers' Guild, Conduit-street, the work was executed at the Chiswick workshops of the Guild in British-grove by Messrs. Frank Jobe, W. Glennie, A. Minns, craftsmen of the Guild. The woodwork is by Mr. Romney Green.

The Queen's trowel is of similar design, but the ivory handle has wreaths of may blossom and leaves in enamel and silver. Above the large wreath of alternate oak leaves and may blossom are two circular panels of hawthorn in silver and enamel surmounted by cabochon chalcedonies.

The level is of English walnut bound with silver mouldings and twists surmounted by a silver dome raised on four ivory columns with twisted gold wire let into their surface in vertical channels. From the dome hangs a plummet of green and white enamel which checks the action of a small spirit level enclosed with the silverwork of the base. Above the dome silver rose foliage set with amethysts and green agates encloses a panel with the Royal monograms surmounted by a silver crown.

The mallets have handles of ivory with red enamel, Tudor roses, and pique work surmounted by crowns to match that upon his Majesty the King's trowel, but the stones in the Queen's are sapphires, and emeralds. The head of the mallet is of English walnut half polished.

The cases are of grey Morocco leather with the Royal monogram in the centre surrounded by borderings of crowns and small monograms, lined with mouse-coloured velvet and ovster white silk.

Royal Academy Schools: Design for St. Paul's Bridge, etc.

THE conditions of the above subject were that a new road should be constructed continuing that at the east end of St. Paul's Cathedral, passing over Queen Victoria-street and Thames-street, and crossing the river by means of a new bridge at a given point east of St. Paul's Wharf.

The design deals only with the bridge and approaches.

It is suggested that the new road should widen at the approach to the bridge, forming a small "place" surrounded by office buildings in connexion with the adjacent wharves.

The northern approach is so designed that a good view of the dome of St. Paul's might be obtained from the bridge, with the pylons and their bronze groups, etc., forming a setting.

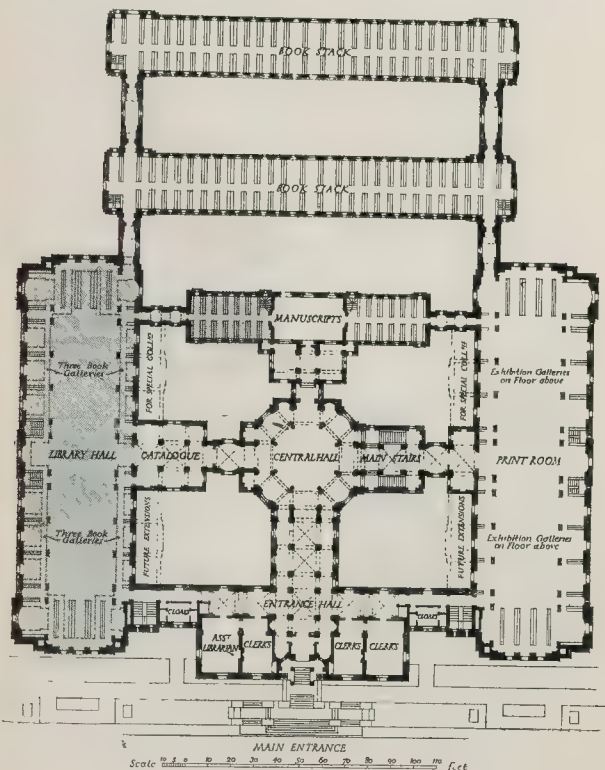
The ornament throughout has been made appropriate to the subject and its position, the cutwaters being suggestive of the prows of ancient galleys, and the bronze lamps over decorated with dolphins, etc.

The bridge is given only sufficient camber to obviate any appearance of sagging, the difference of level between the north and south shores being covered by the parapets.

L. H. BUCKNELL.

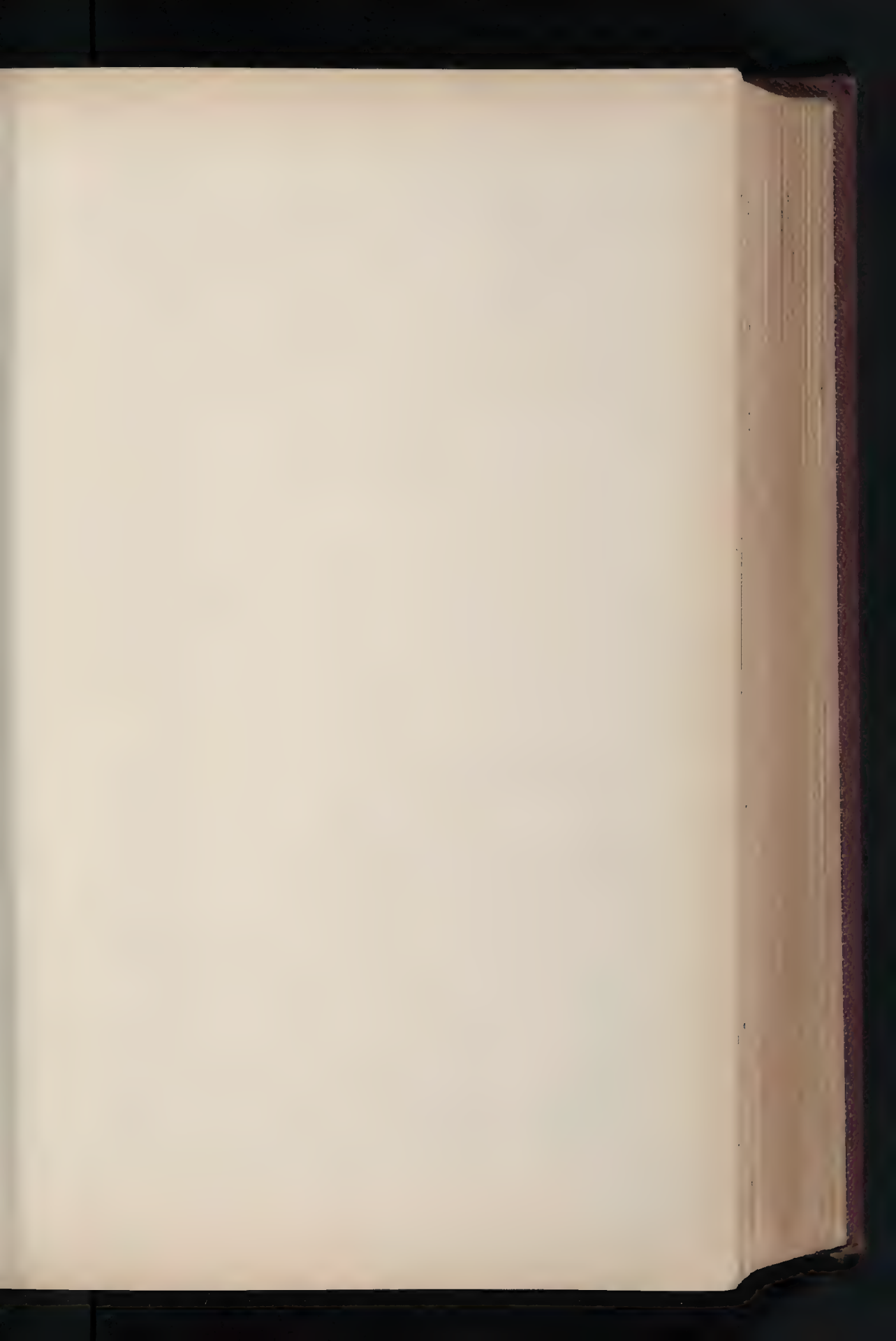
NEW ART GALLERY, SWANSEA.

THE Glynn Vivian Art Gallery has been erected at an estimated cost of 10,000*l.* from the designs of Mr. Glendinning Moxham, F.R.I.B.A., architect, of Swansea. The builders were Messrs. Lloyd Bros., of Swansea, and the carving was executed by Mr. G. Houghton, of Worcester.



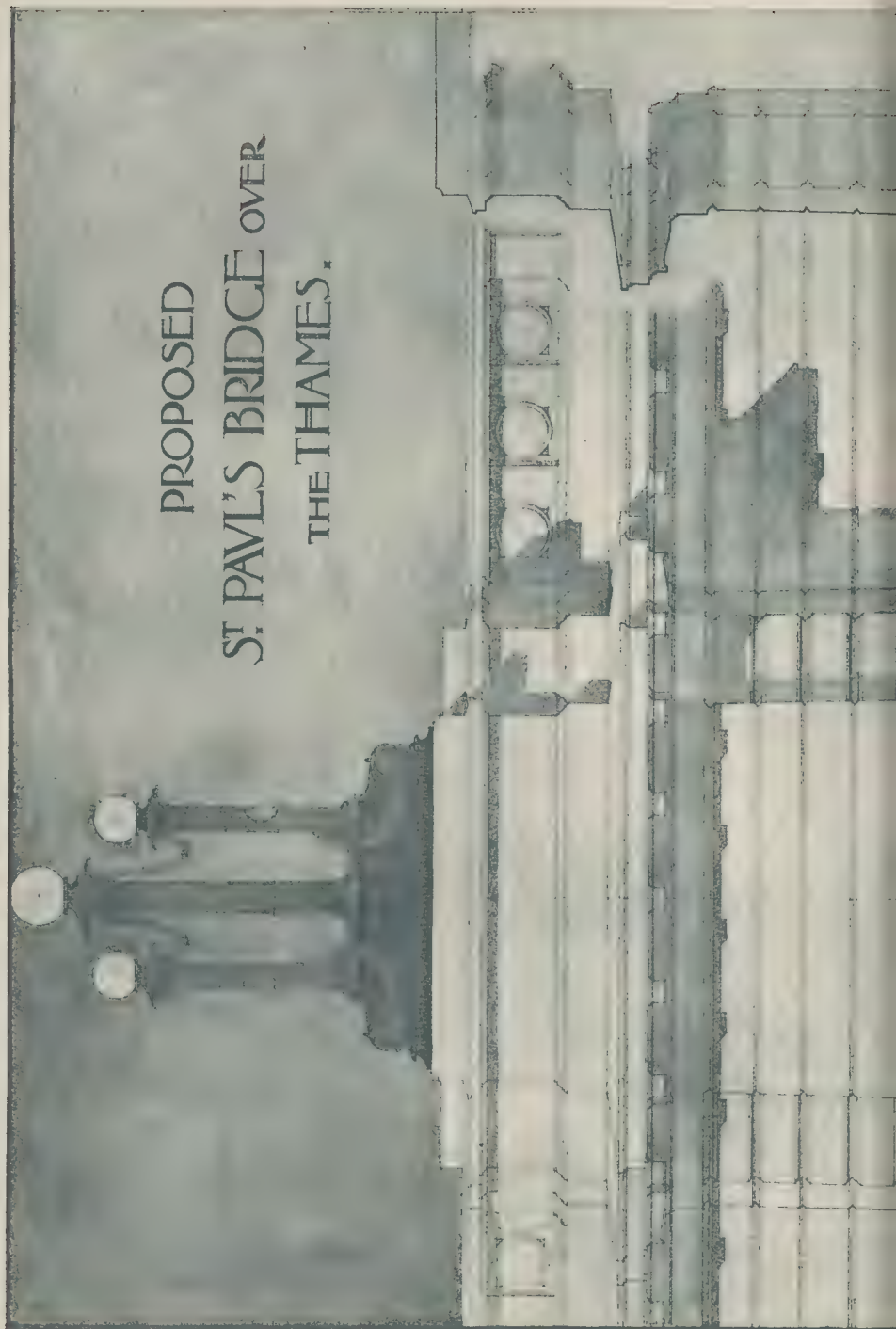
Plan of the National Library of Wales, Aberystwyth.

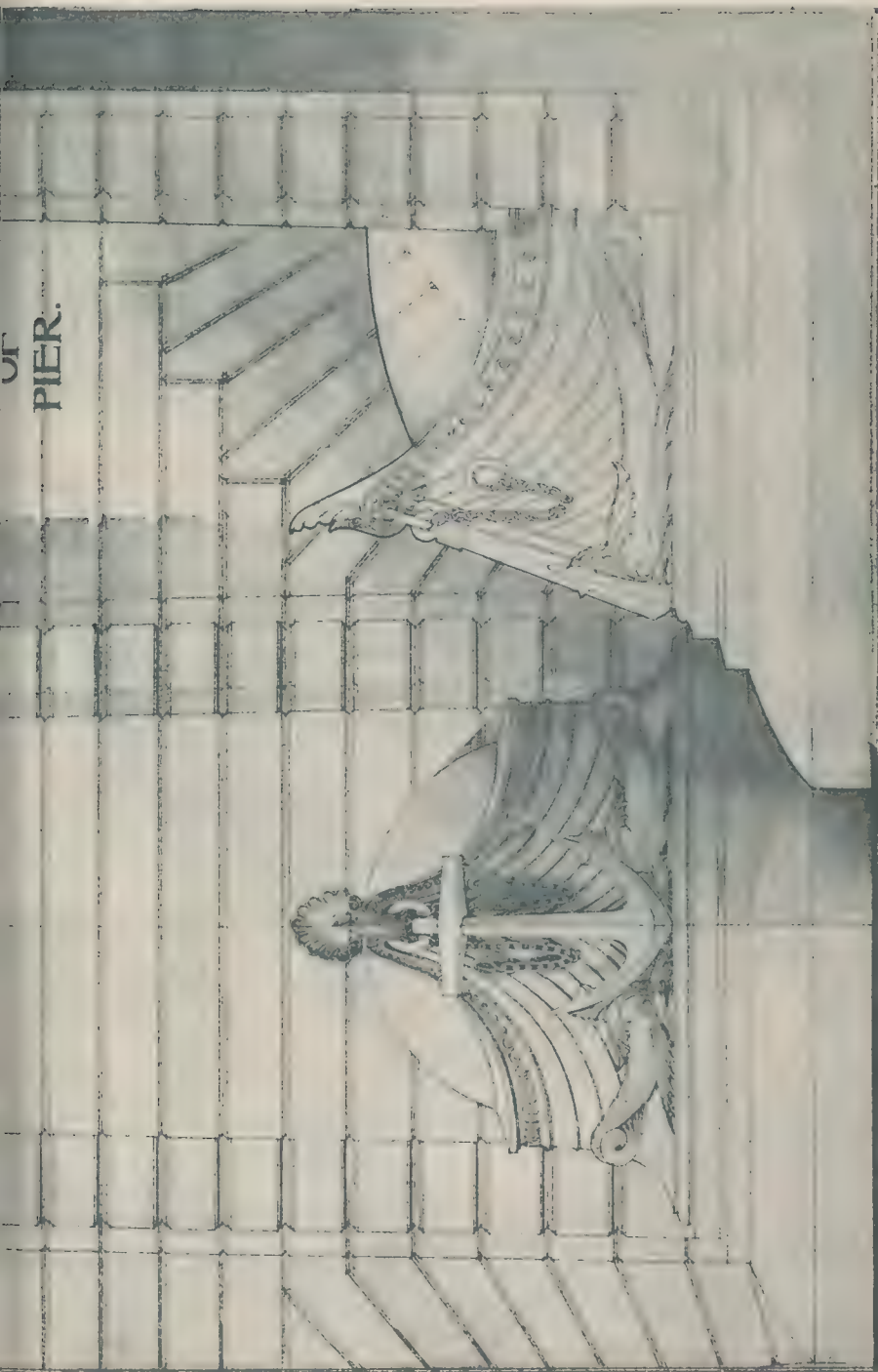
Mr. Sidney K. Greenslade, A.R.I.B.A., Architect.



THE BUILDER, JULY 14, 1911.

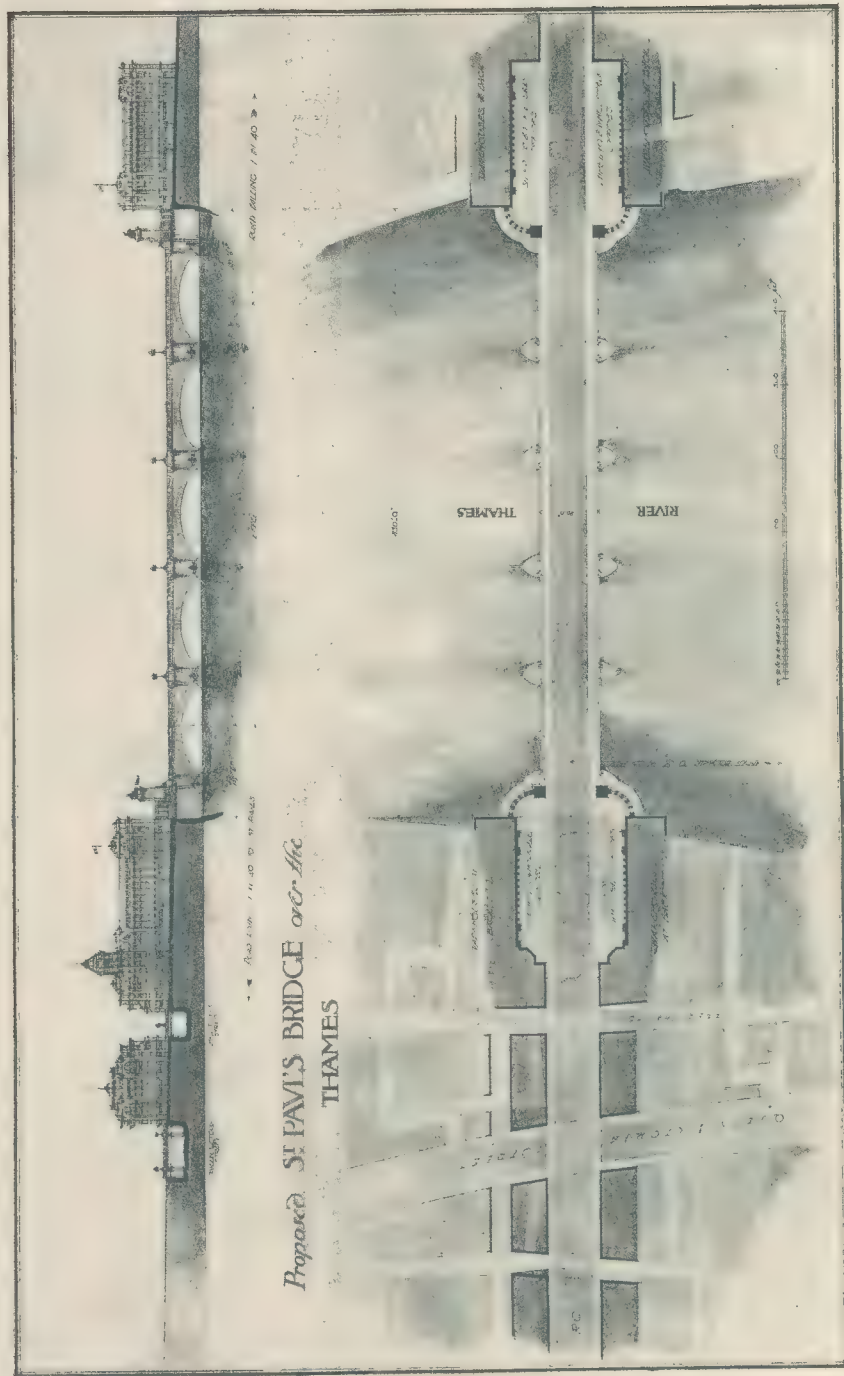
PROPOSED
ST PAUL'S BRIDGE OVER
THE THAMES.





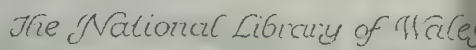
R. A. SCHOOLS. DESIGN IN ARCHITECTURE: AWARDED £25 PRIZE.—By Mr. LEONARD H. BUCKNELL.

THE BUILDER, JULY 14, 1911.

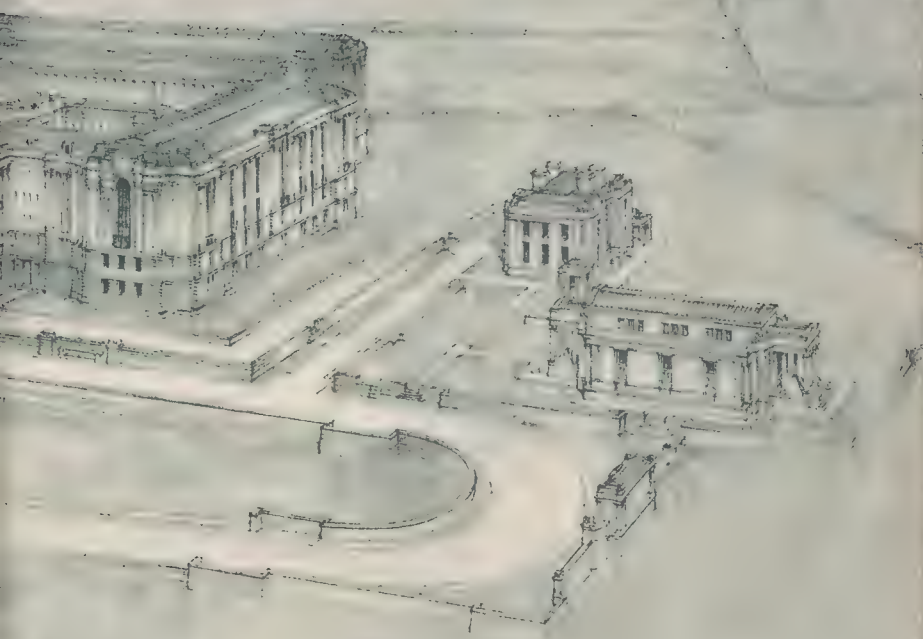


"NINE PHOTOGRAPHIC & CO. LTD. 4 & 5 EAST HARDING STREET FETTER LANE E.C.

R. A. SCHOOLS. DESIGN IN ARCHITECTURE: AWARDED £25 PRIZE.—By Mr. LEONARD H. BUCKNELL.

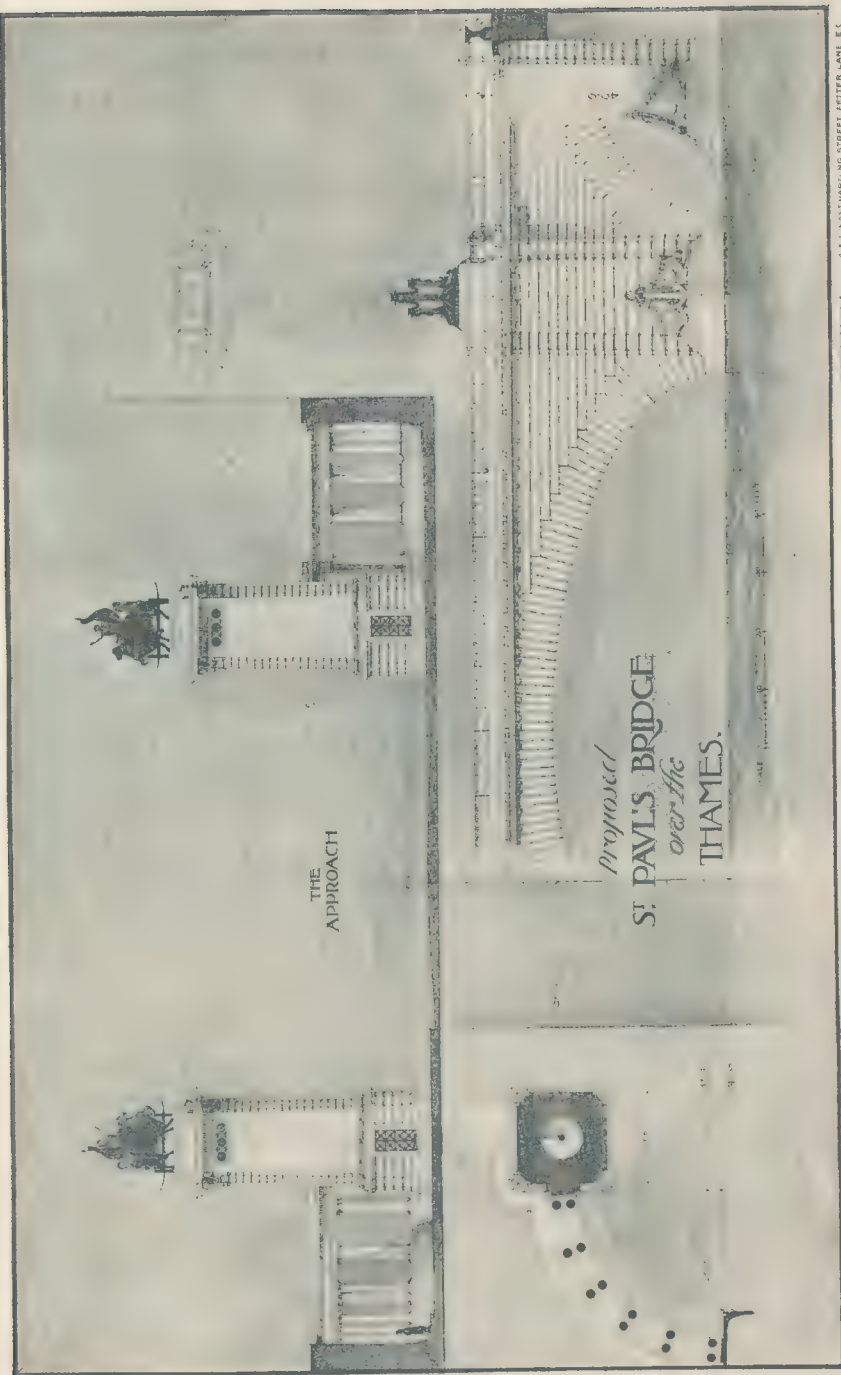


hol Cymru



ystwyth Prospect from the direction of Pen-dinas.

S. SIDNEY K. GREENSLADE, A R I B A, ARCHITECT.

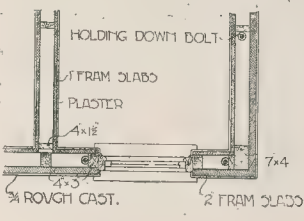


R. A. SCHOOLS. DESIGN IN ARCHITECTURE. AWARDED £25 PRIZE.—By Mr. LEONARD H. BUCKNELL.

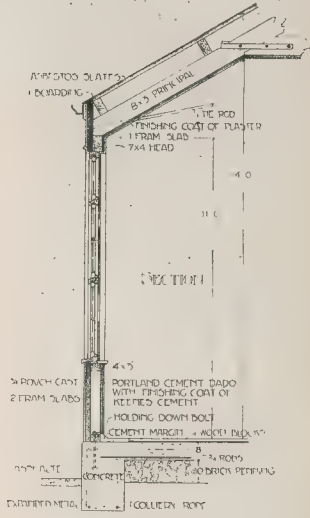
MONTHLY REVIEW · of · CONSTRUCTION

NORTH SURREY DISTRICT SCHOOLS, ANERLEY.

THE new school recently opened at Anerley by the managers of the North Surrey District Schools presents some novel features of construction. For instance, its walls, both external and internal, are formed by concrete slabs 2½ in. thickness and about 1 ft. 9 in. by 1 ft. 5 in. size, dovetailed into each other, grouted with Portland cement, and supported by horizontal channels and steel uprights. Externally the walling is finished with Portland cement rendering, ¾ in. thick, and internally the surfaces of all walls and ceilings are covered with expanded metal thing and coated with marble plaster. The building work was executed with remarkable rapidity, the whole structure, including the boiler-house, drainage, and



PLAN.
North Surrey District Schools, Anerley.
Fig. 1. Detail of Construction.

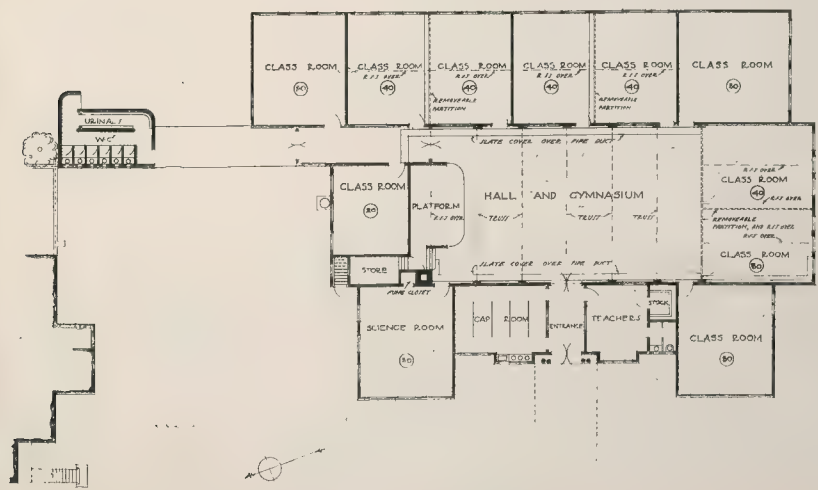
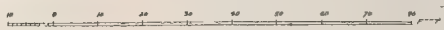


North Surrey District Schools, Anerley.
Fig. 2. Detail of Construction.



North Surrey District Schools, Anerley.

the installation of the hot-water system of heating, being erected and completed ready for occupation within fifteen weeks. The method of construction was as follows, viz.: A concrete raft, 6 in. in thickness, was placed over the whole of the site covered by the building, and the positions of all walls set out by steel channels and angles. The vertical supports of the walling and the steel stanchions carrying the main roof trusses over the gymnasium, spaced 10 ft. apart, were then fixed, and roof plates bolted to the uprights to receive the roof timbers. The surface of the concrete raft being above the level of the surrounding ground,



North Surrey District Schools, Anerley.
Mr. Cecil A. Sharp, A.R.I.B.A., Architect.

neither footings nor dampproof courses were required, but the thickness of the concrete was increased to 2 ft. under the main stanchions and at the junction of all walls.

To all appearance the structure, which is perfectly rigid, and absolutely waterproof and soundproof, is an excellent example of the successful application of a novel method of construction to a school building of the usual type of design.

Exclusive of its assembly hall and gymnasium, the school contains seating accommodation in its eleven well-lighted classrooms for 450 boys, and the subsidiary rooms, such as the teachers' room, cloak-room, etc., are spacious and well arranged.

This school building was the subject of a competition, instituted by the managers of the North Surrey District Schools, in which the design submitted by Mr. Cecil A. Sharp, A.R.I.B.A., of 11, Old Queen-street, Westminster, was selected for execution, and the work has been carried out under his superintendence.

Fig. 1 of the accompanying constructional details shows the angle treatment of the concrete slabs, Fig. 2 the cavity windows, etc., and the concrete raft and floor.

NOTES ON SOME DEFINITIONS USED IN STRUCTURAL MECHANICS—(Continued).

By PERCY J. WALDRAM, F.S.I.

MODULUS OF ELASTICITY AND DEFLECTION.

THE practical designer wishing to understand the important subject of deflection is not in nearly all text-books with the statement that the subject is beyond his intelligence, and that he must trust blindly to the formulae and rules supplied to him. As these formulae usually involve the calculation of Moments of Inertia, he seldom uses these, and, therefore, probably fails to note the small mathematical differences in them which indicate that the *stiffness* of a beam or cantilever bears little or no relation to its *strength*. Failure to appreciate the importance of the essential factors regulating stiffness frequently leads, on the one hand, to undue confidence in the strength of a beam or member which proves to be stiff under its load, or, on the other hand, it may lead to unexpected and disfiguring deflections occurring in members whose strength may have been quite correctly predetermined.

If the factors governing deflection be investigated with a little care and a very little common sense, the subject will be found to be no more difficult than the mechanics of a child's seesaw.

It is well known that the strength of a girder or cantilever varies directly according to its fibre strength (f) multiplied by its muscular development or section modulus, Z (which is roughly its effective flange area \times its effective depth, or ad), whilst its length (l) directly decreases its strength, or

$$\text{Strength} \propto \frac{ad}{l} \times f,$$

and in the case of beams of rectangular section whose flange area (a) is always $\frac{bd}{4}$, and whose effective depth is always $\frac{3}{4}d$, then

$$\text{Strength} \propto \frac{bd}{4} \times \frac{3d}{4} \times \frac{f}{l} = \frac{b \cdot d^2}{6} \times \frac{f}{l}.$$

The deflection of a girder or cantilever being merely the result of the "give" of the flange fibres under stress, one would expect the stiffness to vary, like the strength, with the flange area, effective depth, and length. It certainly does vary with the flange area, i.e., with the flange stress, but the depth and length affect it very differently.

If the flange stress in a girder or cantilever be reduced by halving the load, the deflection will be accordingly reduced by one-half, as would be expected. But if the flange stress be reduced to one-half by halving the

span, the deflection (Δ) will be reduced to only $\frac{1}{8}$ of its previous amount instead of $\frac{1}{2}$, and generally the deflection varies, not with the span, but with the cube of the span, or $\Delta \propto l^3$.

Similarly, if the flange stress be reduced by doubling the flange area, the deflection is halved, but if the flange stress be reduced by doubling the depth, then the deflection will be reduced not to $\frac{1}{2}$ but to $\frac{1}{8}$, the deflection varying inversely with the square of the depth,

or $\Delta \propto \frac{l^3}{d^2}$; and in girders of rectangular section, where doubling the depth also doubles

the effective flange area ($\frac{bd}{4}$), then the deflection would be reduced to $\frac{1}{8}$, viz., as $\frac{l^3}{d^4}$.

Still more strange is the want of connexion between the stiffness of a beam and the fibre strength (f) of its material. One would expect, for instance, a beam of oak or teak to be much stiffer than a beam of deal, whereas the exact reverse is the case—a beam of oak or teak, which will carry a distinctly heavier load than a beam of deal of the same size and span will always deflect more under the same load. A cast-iron beam is far weaker than a steel or wrought-iron beam of the same size, but all three would be of practically the same stiffness when stressed within the elastic limit. Concrete also within its small limit of elasticity is far more flexible than steel. Obviously, therefore, the rigidity of a material is no criterion of its fibre strength and must be separately studied.

Modulus of Elasticity.

The rigidity of a material is defined by what is known as its modulus of elasticity (E), an imaginary stress per square inch which would stretch the material to double its length or compress to annihilation; as, for instance, an imaginary stress of 13,000 tons per square inch for mild steel. If, instead of this imaginary stress, steel be loaded with only 1 ton per square inch, then the stretch would be $\frac{1}{13,000}$ of the length of the bar operated on. The E of a material, therefore, represents not only an imaginary stress, it also represents that proportion of the length of a stressed bar which it will stretch or compress under a stress of 1 ton per square inch. All deformations *within the elastic limit* can be easily deduced from this, and what takes place outside the elastic limit is of no practical consequence.

If the length of any bar be divided by the modulus of elasticity of its material, the stretch under a stress of 1 ton per square inch is obtained; and the stretch under any greater stress, such as 5 or 10 tons per square inch, is the same result multiplied by 5 or 10, as the case may be.

If a steel bar 13 ft. long were subjected to a stress of 1 ton per square inch it would elongate or shorten, as the case may be, to the extent of $\frac{13' 0''}{13,000}$ or $\frac{1}{1000}$ of a foot.

If it were loaded to the extent of 10 tons per square inch, the deformation would be ten times that amount, or $\frac{1}{100}$ of a foot. On the other hand, if the bar were 25 ft. long, the extension or compression under a load of 1 ton per square inch would be $\frac{25' 0''}{13,000}$ or $\frac{1}{520}$ of a foot; and if the load imposed a stress of 10 tons per square inch the compression or stretching would be $\frac{1}{52}$ of a foot.

The greater the stress the greater the deformation under that stress, and also the longer the bar the greater will be the total deformation. If a piece of elastic 6 in. long stretches to the extent of 1 in. under a load of 1 lb., then a piece 12 in. long would stretch to the extent of 2 in., and a yard of the same elastic under the same load would stretch to 3 ft. 6 in.

The term modulus of elasticity is an unfortunate one. It is not a measure of the elasticity of a material, which is its power of recovering its original dimensions after the removal of any stress, nor is it a measure of its ductility—it is a measure of its *stiffness*.

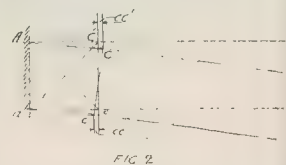
If the moduli of different materials, as given in Molesworth or any good text-book be compared, it will be found that they vary in quite a different manner to their respective *strengths*.

Deal has a higher modulus than oak, teak, greenheart, or any hard wood. Concrete is much less than steel, whereas hard and mild steels and cast-iron, which are widely different in strength, differ but little in stiffness. It is for this reason that there is but little to choose between the strengths of similar long columns of the three materials, which would all fail by bending; steel being commonly selected for such a purpose merely because it is the more reliable material.

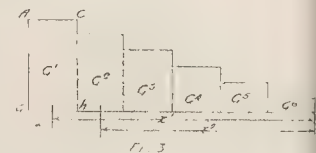
The curvature of a girder is caused almost entirely by the stretching of one flange and the compression of the other under horizontal flange stress, the deformation of the web affecting the general curvature to such a minute degree that it may be (and in practice is) disregarded.



The effect of such stretching and compression of the flanges can be most clearly seen in the case of a cantilever loaded with a single concentrated load, as in Fig. 1. Before the weight is applied, let it be assumed that the cantilever is divided up into a number of regular panels. Upon applying the weight, the upper part of each panel will be stretched, and the lower part will be compressed, so that each panel will assume a taper form resembling the voussoirs of an arch, as shown in Fig. 2.



The alteration in the length of a flange would be its length \div the modulus of elasticity \times the stress per square inch, i.e., its stretch under a stress of 1 ton per square inch, multiplied by the stress it is actually receiving.



Let a diagram of flange stress per square inch be made as in Fig. 3, in which AG represents the flange stress per square inch in each flange of the first panel. Then the upper bar of that panel will be extended and the lower bar compressed by an amount equal to the length (AC) of the panel \div the modulus of elasticity (E) \times stress intensity per square inch (AG); or the alteration in length (CC' in Fig. 2) = $\frac{AC \times AG}{E}$.

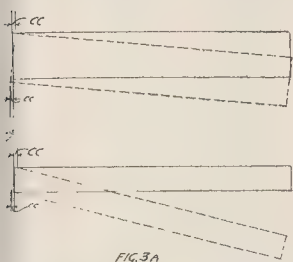
Of this $AG \times AC$ will be represented by the area of the figure $AGhC$. If this area be called Q' then $\frac{Q'}{E}$ will express either the

elongation (CC') of the upper bar (Fig. 2) or compression (cc') of the lower bar.

The altered form of the panel is shown in Fig. 2, and the inclination of the line Cc' , which was originally vertical, will be measured by the linear extension of the upper edge \div half the depth of the girder, or by extension of $AC \div$ compression of ac or depth of girder

Even if the rest of the girder were subject

no further stress, this tapering of the first voussoir would have the effect of setting up a gradient of deflection, which passes along the whole length of the cantilever. It will be seen that the longer the cantilever the greater will be the droop or deflection between the first panel and the end, due to that initial gradient or slope set up in the first panel. So that the depth of the girder is one of the two essential factors which determine this initial gradient. If the extension CC' and the compression cc' were exercised in a deeper girder or cantilever the initial gradient of the first panel or voussoir would be obviously less severe than if they were exercised in a shallow girder. This fact is very important and merits some attention. Fig. 3A shows

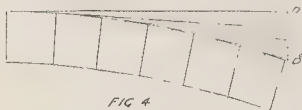


two cantilevers of the same span and carrying loads which result in the same flange stress. And, therefore, the same stretch of the flange fibres CC' . Yet if the deflection of the deeper cantilever were considered reasonable, then that of a shallow cantilever would appear to be excessive to a startling degree. A small deflection does not, therefore, necessarily indicate moderate flange stresses and safety, any more than a large deflection necessarily indicates danger. In a short, deep girder or cantilever which deflects $\frac{1}{2}$ in. under its load, the fibres are possibly being punished to a far greater degree than those in a longer and shallower one which deflects 2 in. Deflection per se is no criterion of safety or danger unless it be considered in its proper relation to length and depth. Cases have been known where bridges which showed quite a small and satisfactory deflection under a test live load of locomotives were really so distressed by that load that they soon afterwards quietly collapsed under the load of their own weight.

Although the deflection of a cantilever is the result of the stretching of one flange and the compressing of the other, its amount is also affected by the depth, which determines the initial gradient, and by the length, which determines the effect of that gradient and also the amount of stretch.

It will now be clear why the depth of a girder has a greater effect in reducing deflection than it has in reducing flange stress. In reducing flange stress in a rectangular girder it acts twice over, first by increasing the area of the flange, and secondly by increasing the leverage at which that area acts, viz., $d \times d$ or d^2 . In reducing the deflection it acts first in that double fashion, in determining the flange stress, and then exerts its influence again in determining the initial gradient, and so acts as $d^2 \times d$ or d^3 , instead of d . Or in the case of thin webbed girders, where it exerts no influence in the area of the flange, it acts as $d \times d$ or d^2 instead of d . The length also of a banded

cantilever or girder, which has previously used its influence as leverage in setting up flange stress, acts over again with regard to deflection by multiplying the initial gradient and operating, therefore, to increase the deflection as $l \times l$ or l^2 . It has, however, a further influence, because if we consider the remaining panels we find that each panel has its own particular flange stress which, in its turn, has to be multiplied by the length of each panel, and sets up a further gradient, which contributes a further quota to the total deflection. So that the length acts over again in the same way that a 6-in. stretch takes place in a yard of loaded elastic as compared to 2 in. in a foot similarly loaded. The length, therefore, operates to increase deflection, first as leverage by increasing the flange stress, then to enhance at the end the camber of every voussoir, and then also by collecting the different stretches of every voussoir or panel under stress. So that, whilst it only acts as l to enhance the flange stress, it acts as $l \times l \times l$ or l^3 to enhance the deflection.



The total deflection DD' in Fig. 4 is, of course, the sum of all the deflections, each one of which is equal to the area of the stress diagram of each panel $\div Ed$ and multiplied by its distance from B , and the total deflection DD' is equal to the area of the whole diagram \times the distance of its c.g. $\div Ed$. This gives the key to the whole problem of deflection of any parallel girder. All we have to do is to imagine the diagram of flange stress in either flange per square inch as a load, and its moment about the point of deflection (in this case B) will represent the deflection due to it—as there are two flanges, and both are deforming under the stress, this must, of course, be multiplied by 2.

If, therefore, G represents the entire area of the diagram, and X the distance of its c.g. from B , the deflection will be $= \frac{2GX}{Ed}$.

In the next instalment this simple solution will be applied to different classes of girders and cantilevers, with precisely the same results as are obtained by most obscure mathematical processes.

EXHIBITION BUILDINGS.—VI.: EXAMPLES AT THE FRANCO-BRITISH EXHIBITION.

TAKEN as a whole, the numerous buildings erected for the Franco-British Exhibition in 1908, and with one or two exceptions still to be found at Shepherd's Bush, cannot be regarded as ideal structures from the standpoint of fire-resistance. The reassuring fact that no outbreak of fire has occurred at any of the exhibitions held on the site may be taken as evidence of prudent administration and the safeguards adopted by the responsible authorities.

Some of the buildings include more or less fragmentary examples of fire-resisting construction, chiefly in the form of flooring and partitions. The reinforced concrete platform in the Stadium have already been mentioned in a preceding article, and among other fire-resisting floors we may cite those constructed by the Armoured Tubular Flooring Company in the Picture Galleries, the Soap Milling Hall, the Restaurant, and the tower in the Villa Village.

The pavilions and halls at present to be seen on the site represent either steel or timber framework faced with plaster, and therefore little or no better than the average exhibition building, although in some important respects superior to those which came to an untimely end in the Brussels conflagration.

A structure illustrating the principle of articulated, as distinguished from monolithic, reinforced concrete construction was the bakery erected at the Franco-British Exhibition by Messrs. D. G. Somerville & Co., and

at present forming part of the manufactory of Messrs. McVitie & Price, at Willeaden.

This building, originally occupying a site at the corner of the Grand Avenue of the Colonies and Empire Avenue, was dismantled at the conclusion of the Exhibition and transported in parts to its present situation. By adopting this type of building the firm were able to secure perfectly safe as well as convenient and substantial accommodation for their exhibit, and to avoid the loss of money consequent on the demolition of an ordinary exhibition building, and the sale of materials at merely nominal prices. The building, as erected at Shepherd's Bush, was founded on a reinforced concrete raft 6 in. thick, with concrete bases under and enclosing the lower part of the steel columns. This type of foundation was employed because the unstable nature of the ground would have involved serious risk of unequal settlement if ordinary footing had been adopted. It is true that the requisite degree of security might have been attained by pile foundations, or by carrying down piers to the underlying clay. But after due consideration it was decided that the reinforced concrete raft would be quite as satisfactory and at the same time far less costly than any alternative form of foundation works.

The surface of the foundation slab, finished with a layer of cement, formed a perfectly fire-resisting floor for the exhibition building, which consisted of a light steel frame with enclosing wall panels and interior partitions in reinforced concrete, the walls being only 3 in. thick.

The main tower was also cased in reinforced concrete, the outer surfaces of the building having been rendered in cement mortar and finished in rough-cast.

The roof principals were of steel, the framing having timber purlins and rafters covered with tiles. All the steelwork was completely protected, the general character of the building and its contents being such as to render very unlikely any serious outbreak of fire.

Messrs. Somerville & Co. deserve credit for the ingenious design of this building, which clearly merits notice as a first step in the direction of fire-resisting construction of exhibition buildings on a practical and economical basis.

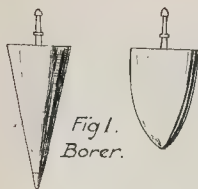
THE COMPRESSOR SYSTEM OF FOUNDATIONS.

THE extensive use of concrete during recent years has caused engineers to turn their attention to rapid and inexpensive methods whereby it can be readily applied to a large variety of cases. Especially so is the various methods adopted for the formation of footings, whether it be applied in the reinforced form as a substitute for wooden piles or simply as concrete *en masse*.

On the Continent many innovations have been introduced, and one of them is the Compressol system of piling, or what might be considered as such, introduced several years ago by Mr. S. L. Dulac, a French engineer. The word "Compressol" is used to indicate the system, which is really a compressing of the soil by rams let fall a considerable distance, which on striking the ground cause a compression of the soil struck and leaves a hole for the insertion of the concrete as a foundation.

An arrangement similar to the ordinary pile-driver is used, excepting that the ram does not lose power by the friction of guides. These are absent, and the ram falls on release clear to the ground. The rams employed are of three types, and are shown in Figs. 1 to 3. The first, which is called the "borer," is of conical shape, having a pointed end containing a cavity. This cavity is to receive a sample of the earth penetrated, and when the borer is withdrawn can be inspected at each stroke.

The weight of this borer is about 32 cwt., being 6 ft. long and 2 ft. 4 in. at its upper diameter. The height through which the borer is allowed to fall varies with the soil and circumstances of the case, sometimes being over 30 ft. The rammer is lifted by means of a special automatic gripper which engages with the nipple-shaped head; a special ring attached to the driving-machine frame engages with the automatic grip and releases the ram. The borer is allowed to fall

Fig. 1.
Borer.Fig. 2.
Rammer.Fig. 3
Tester.

Compressal System of Foundations.

a sufficient number of times suitable to the case in point, and a hole is formed in which the sides have been sq compressed by virtue of the shape of the borer and the blow that they require no supporting.

A second ram is then used, called a "rammer," weighing a little less than the borer, being 3 ft. long and 2 ft. 2 in. largest diameter, of the shape shown in Fig. 2. The rammer is employed to drive several large stones which have been thrown into the pit after the use of the borer has been discontinued, and besides driving them to a firm bed, it forces them outwards and enlarges the base.

When these stones have been forced into position the hole is filled with concrete in layers about 18 in. thick, and a third ram, called a "tester," is employed to properly bed the concrete and spread it so that it properly fills in the pit. The tester is the heavier of the three, weighing about 1 ton, and, unlike the other two, which are dropped point downwards, it falls with the flat face undermost. The shape of the tester can be seen in Fig. 3, and its diameter is a little larger than that of the borer. A few blows from the tester only are required to complete the operation.

The result is a foundation somewhat of the shape shown in Fig. 4, the base, it will be seen, being larger than any other section.

From the information obtained of the set under the blow of the tester the value of the bearing power of the concrete pile is obtained. Suppose the weight of 1 ton falls 20 ft. and the pile is driven $\frac{1}{2}$ in. under the blow. The energy in the tester when it strikes the pile is 20x1 ton, or 20 ton-ft. As the pile is only driven $\frac{1}{2}$ in., then it would take twenty-four times the weight of the tester to drive it 1 ft., or the bearing power of the pile is 20x24=480 tons. Deductions must be made for vibration, etc., and a factor of safety allowed before the working load on the pile is obtained.

As a great number of buildings have been erected upon foundations made in this way, there is no reason to doubt its efficacy, and as there is a saving in excavation alone it might prove a considerable saving upon ordinary methods of forming foundations where it could conveniently be employed.

CONSTRUCTION NOTES.

Cork Paving Bricks.

A SANITARY, non-absorbent, and relatively noiseless material suitable for carriage drives, courtyards, and other places has recently been patented in the United States under the name of cork brick. It consists of finely-granulated cork mixed with asphalt and pressed into the form of

bricks, measuring 9 in. by 4 in. by 2 in. The bricks are laid flat on any level foundation. Where laid on concrete the foundation should first be covered with a thin layer of hot asphalt or a bed of sand. If the foundation consists of broken stone a layer of sand should be spread before placing the bricks, and where laid on wood the surface should be covered with hot asphalt. It is stated that the bricks absorb less than 14 per cent. of water by immersion, and that they afford an excellent foothold whether wet or dry.

REFERENCE to data given in most text-books shows that Size in Timber values for the ultimate strength of timber vary considerably among themselves, and are also much higher than the values ascertained by modern investigations. The chief reason for the abnormally high values so generally quoted is to be found in the fact that test pieces of small size were used, thereby reducing very largely the influence of defects which are inseparable from specimens of large size.

At the International Engineering Conference of 1904 Professor Lanza showed that, as compared with the ample records provided by small size timber tests, the data on large size specimens are very meagre. Among the latest tests of timber those conducted by Professor Talbot, at the University of Illinois, make very clear the danger of basing factors of safety upon values given by testing small size specimens.

His tests were conducted on timber beams measuring from 7 in. by 12 in. by 15 ft. to 8 in. by 16 in. by 15 ft., and, for the purpose of obtaining comparative data, on 3 in. by 3 in. by 40 in. beams cut from the larger specimens.

In Professor Talbot's tests the preponderance of failures in horizontal shear was very marked, and shows the importance of the shearing resistance of timber in large size specimens. The actual shearing strength developed in the beams averaged about two-thirds of the value given by blocks of the same wood measuring 6 in. by 8 in. by 12 in., and still less than values obtained by testing small pieces of selected timber.

To make clear the wide divergence between the results of large and small size tests we give the average values obtained by Professor Talbot on three varieties of American fir:—

Description of Timber.	Ultimate Bending Strength.			
	Cross-breaking Stress in Extreme Fibres.		Horizontal Shearing Stress.	
	Large Size.	Small Size.	Large Size.	Small Size.
	lb. per sq. in.	lb. per sq. in.	lb. per sq. in.	lb. per sq. in.
Longleaf pine.....	5,380	8,545	365	532
Shortleaf pine.....	4,865		364	
Douglas fir.....	4,111	8,322	302	515

Comparison of the large and small size results in this table demonstrates the influence of size in tests of timber, and shows how unreliable are factors of safety based upon test results of the latter category.

Portuguese Marble and Limestone.

THE British Consul at Lisbon reports that Portuguese marble is extensively exported to Brazil. "It is cheap and of excellent quality, and there seems to be no reason why it should not find a good market in the United Kingdom. Pure white marble deposits similar to and as good as Carrara exist in the North, but cannot be worked for want of railway communication. Red, grey, and mottled marbles and the yellowish white marble, which is used for lining houses in Portugal, are easy to obtain, as is also limestone—a compact, durable stone, readily cleaned."

Cement for Panama Canal.

IN A Consular report just received at the British Foreign Office it is stated that three years ago a cement company in Pennsylvania received a United States Government contract to furnish 4,500,000 barrels of cement for the Panama Canal. A clause in the contract provided that the Canal Commission

shall have the right either to increase or decrease the contract by 675,000 barrels. The company has now received notice from the Isthmian Commission that it will avail itself of the clause to increase the amount. It now appears that a very much larger quantity of cement will be needed than was originally expected, and considerable quantity more than the original 4,500,000 barrels will be ordered. The Commission has already increased its daily order from 6,000 to 6,500 barrels, which makes a train-load of from forty to fifty trucks.

Concrete Floor Surfaces.

TO OBVIATE undue wear of concrete floors and consequent surface should consist largely of hard stone aggregate in particles of not less than $\frac{1}{2}$ -in. gauge. The use of concrete with a liberal proportion of water is apt to bring small particles to the surface during the work of trowelling. If the finishing layer is applied before the main body of the concrete has hardened the thickness of $\frac{1}{2}$ in. is usually ample, but if applied after the building is practically complete the thickness should be at least 1 in. so that the new material may be capable of standing without relying upon bond with the old work beneath. By taking care to make the final coat of durable character, a concrete floor should be free from "dusting," but in case remedial measures should become necessary one or two coats of boiled oil or treatment with sodium silicate solution will be found effective.

Reinforced Concrete Boiler Settings.

UP to the present reinforced concrete has not come into general use for setting steam boilers, although a large number of boilers have been set in this material. It should be understood, however, that the flues and other parts exposed to flame and intense heat must be lined with fire-brick in the customary manner. The concrete should always be made with hard stone not liable to fly apart or to disintegrate under the influence of heat, and the proportions should be such as to insure concrete of close and dense quality. The design of the setting necessarily varies with the type of boiler to be installed, but presents no difficulty to those accustomed to deal with reinforced concrete construction. Judging by examples already built, it appears that the first

cost of a reinforced concrete boiler setting is practically the same as that of brickwork. But the ultimate saving should be an important item, as practically no maintenance charges are incurred for reinforced concrete, while, on the other hand, repairs of more or less costly nature are needed to keep brick boiler setting in good condition.

Crystalline Pigments in Paints for Wood.

THE beneficial effect of crystalline pigments, such as barium sulphate, quartz silica, and asbestos, has been demonstrated experimentally and in practice. The action of crystals in penetrating the surface and becoming attached by their corners to the fibre is of much value, and materially assists ordinary pigments in their duty. Some varieties of timber contain hardened pitch and sap, making penetration by paint very difficult, even when a volatile solvent, such as turpentine, is used. Some of the newer solvents, such as benzol, xylol, and other coal-tar products, have recently been tried experimentally with promising results. The penetrative power of these substances is high, and their price by no means prohibitive.



THE BUILDING TRADE.

SCAFFOLDING : TELESCOPIC TOWERS AND MASTS.

ALTHOUGH not intended to take the place of ordinary scaffolds in the erection of new buildings, telescopic towers and masts can be usefully and economically employed for various operations where the construction of pole scaffolding would be disproportionately costly. Practically all the leading firms of ladder

makers supply telescopic towers built of timber and constructed very much on the principle of extension ladders. A tower of this kind when closed forms a compact nest of sections which can be used by means of hand crank gear and steel cables, the top section being surmounted by a working platform, surrounded by guard rails, where one or two men can work in safety and comfort. Fig. 1 illustrates a six-section tower of the type made by Messrs. Heathman & Co., the base and winch being detachable, so as to facilitate transport and use in the interior of buildings.

Apart from their utility as independent units, these towers can be applied in pairs for supporting a working platform afford accommodation for several men, as represented in Fig. 2, an arrangement which is

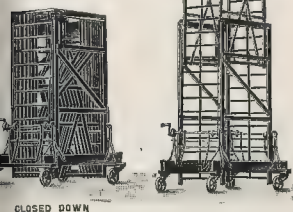


Fig. 1. Heathman's Telescopic Scaffold Tower.

convenient for pointing and decorating the exterior surfaces of existing buildings. They are also advantageous for the support of the platforms required in connexion with the decoration of ceilings and walls in large public halls. Where so used several towers are placed at different points, and, having been extended to the required height, serve as supports for bearers on which a temporary floor is laid, the whole forming a substantial scaffold.

A more recent type of tower constructed of steel tubes is shown in Fig. 3. This machine, made by Palmer's Travelling Scaffolding and Scaffold Company, is not telescopic, but can be readily erected to any desired height up to 60 ft. The base is provided with double wheels at each corner, the top section carries a working platform square protected by guard rails, which can be applied whether the tower is built up to its full height or to any lower level. The tower can also be employed as a

centre support for staging required in the decoration of ceilings and domes in large buildings, the outer edges of the staging being carried by ladder scaffolds or any convenient alternative.

The most recent variety of telescopic apparatus for scaffolding purposes, and also available as a hoist for building materials, is the "Comet" mast, introduced into this country by Mr. T. Birnbaum, of 20, Bucklersbury. Fig. 4 is a view of the mast, showing it fitted with a working platform at the top. The mast is also supplied with a winch and tackle for hoisting materials.

The mast itself consists of a series of steel tubes, of successively decreased diameter and thickness, arranged to slide telescopically, as shown in Fig. 5. Each section has a ring clamp at the top and bottom, these clamps serving the two purposes of eliminating all shaking when the mast is extended, and of preventing all but the lowest tube to descend when the mast is being closed. A collar fixed near the foot of each section acts as a stop in conjunction with the top ring clamp of the next section, so that no section can be drawn out too far.

Fig. 6 shows the device described as a tube retainer. The pin *a* is automatically pushed outward one step at a time, so that only the innermost tube is hoisted, the sections being released one after the other only after the inner tube has been completely raised. The mast here shown is of circular cross section, but it should be noted that square masts are supplied for use as hoists with a winch capable of raising 3 tons.

Fig. 7 illustrates the mechanism for raising and lowering the mast. Within the pedestal is a drum driven by gearing and a chain and a sprocket wheel from one or two crank handle shafts. Around the drum is coiled a perforated steel band, the free end of which passes between two friction rollers, one provided with teeth to fit the perforations in the band, the rollers being actuated from the handle shaft simultaneously with the drum. As may be seen by Fig. 6, the width of the band is reduced

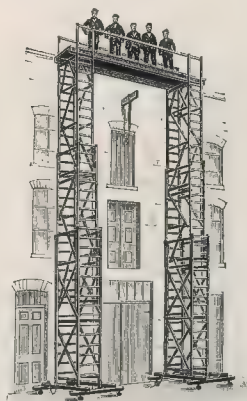


Fig. 2. Heathman's Telescopic Scaffold Tower.

progressively with the diameter of the tubes, and passes inside these as represented in Fig. 5. The band fits the interior of the tubes closely, and, being thereby prevented from buckling, is used to push up the several sections of the mast.

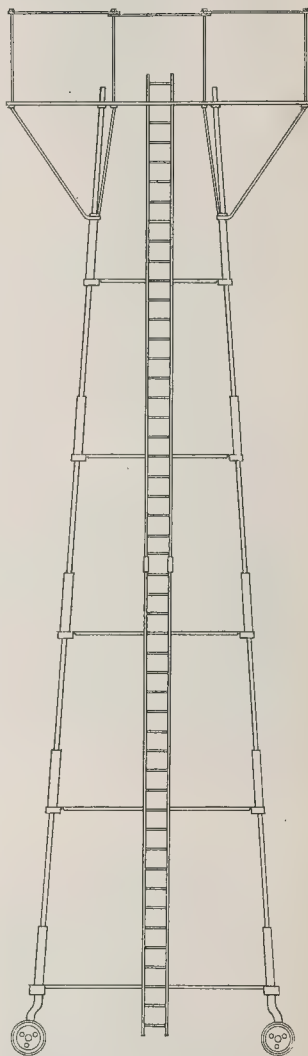


Fig. 3. Palmer's Tubular Steel Tower.

When it is desired to extend the mast the handles are turned, causing the band to unroll from the drum. The top section, attached at its foot to the end of the band, is the first to rise, the others following in succession as they are automatically released by offsets on the band. For the purpose of locking the sections after extension a device is included which automatically closes the ring clamps. Each length of tube is slotted by a longitudinal saw cut, and each clamp is closed and opened by a forked arm, projecting upward when the clamp is open and downward when the clamp is closed. The arrangement is shown in Fig. 8, its operation being as follows:—After any one section has been completely raised and the next section has begun to rise, the clamp

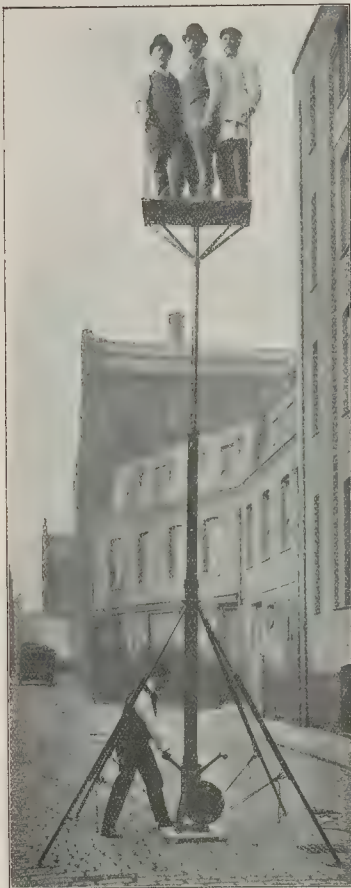


Fig. 4. The "Comet" Mast.

fork engages a pin carried on a bracket projecting from the bottom section of the mast, and the rising of the section causes the fork to be pulled down, thereby locking the ring clamp. In this way all the clamps are locked in succession. They are unlocked by a reversal of the process when the mast is being closed.

Apart from their utility as hoists and for the support of a small working platform, these masts can be used as poles for scaffolding inside buildings, while two or more of them can be used as standards for a gangway across their tops, thus enabling men to execute repairs or other work on exterior surfaces, the height of the working platform being adjusted from time to time as required.

The mast is made in numerous sizes up to 230 ft. high when extended, this size comprising thirteen sections and weighing about 10 cwt.

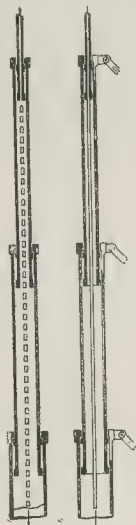


Fig. 5. Section of "Comet" Mast.

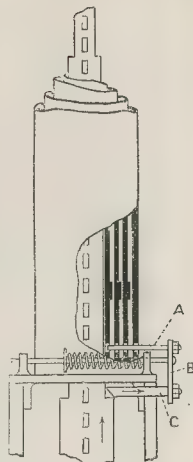


Fig. 6. "Comet" Mast Tube Retainer.

THE MEDIAEVAL BUILDER'S LABOURER.

THE mediaeval builder's labourer was, to-day, the man who was employed to do the rough work for the mason, bricklayer, tiler, and various others. With each skilled man a labourer was generally associated.

The common rate of wages paid to the labourer in the XVth century was 5d. or 6d. a day; in the XIVth century it was considerably less.

It will be noticed in reading the account of the cost of the repair of buildings in the Middle Ages that the builder's labourer was employed, or rather attached, to those crafts men whose business it was to work on, and with, heavy materials, such as stone, tiles, plaster, and so forth. The carpenter, glazier, etc., working upon the lighter materials, are not referred to as having an attendant labourer.

We will give several references from documents of the Middle Ages which will not only substantiate the above, but be of interest to themselves as references to mediaeval builders' labourers.

In Mr. Overall's Churchwarden's Account of the Church of St. Michael in the City of

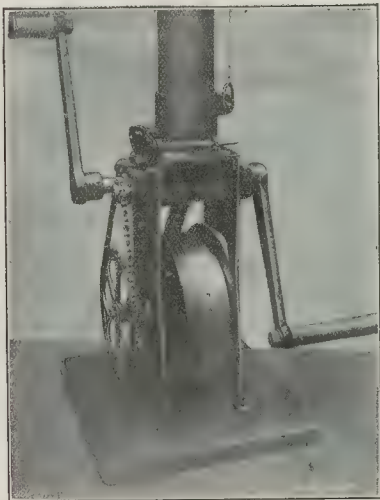


Fig. 7. "Comet" Mast Hoisting Gear.

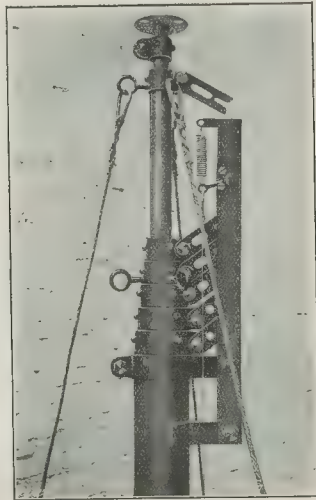


Fig. 8. "Comet" Mast Automatic Locking Device.



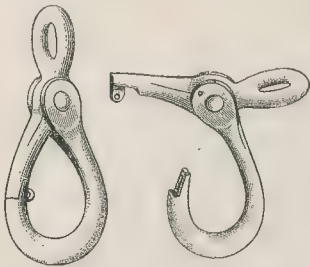
A XVth-Century Mason's Labourer, with wheelbarrow.

When we read of a mason being called in to do work in the church. The mason was paid 8d. for the day, and the payment to his labourer was 4d. Item paid to his laborer the same day 4d. This was in 1456, and in 1460 we read again, "to a laborer to serve the mason." In 1469 two masons working for two days and a half received 3s. 4d.; the two labourers at the same time received 2s. 1d. All this shows very clearly that each mason had his labourer to bring him materials and do the skilled part of the mason's work. Sometimes, however, labourers worked for themselves independently. In the same book accounts we read that two labourers were employed to carry a number of tiles from the church steeple, each receiving 5d. a day for a labourer. The same references to labourers occur in the Accounts of St. Mary-at-Hill, published by the Early English Text Society. Here we read of a labourer in 1429 being employed to lay a tile. The tiler was paid at the rate of 8d. a day, the labourer receiving 5d. In 1477 payment was made to "ii. tyllers and ii. laboreris, wirkyng upon John William's howse," and in the same year the churchwardens record a payment "to a wyber and his laborer, wirkyng in the tene-ment of John Brewster, tornour, in Estchepe" (lastcheap). It will be noticed that the labourers were paid by the day and half-day, not by the hour. Though there are so many references in medieval accounts to the builder's labourer, by almost all of them consist merely of the plain statement of the amount paid. In some instances the place of employment finds mention, but in no case is the name of the employer given. The names of skilled workmen, such as carpenters, joiners, masons, etc., are constantly found, but the name of the employer, so far as we are aware, is never recorded, probably on account of his humble station. Our illustration is a reproduction of a miniature in a MS. in the British Museum—MS. 18 E. V., f. 99. The picture is of value for two reasons—1. It shows us the exact relation of the division of labour between the mason and his labourer. 2. It exhibits very clearly the common dress of the mediaeval builder's labourer.

NEW CHURCH, PLYMOUTH.
The estimated cost of the erection of this church is 4,000*l.*, and the architect is Sir Charles Nicholson. The part now to be provided with is the chancel and the east nave.

A SAFETY CRANE HOOK.

The illustration reproduced in this page represents the Norden safety crane hook, a device designed to be self-closing, and consequently combining the handiness of a plain hook with the security of a shackle. The apparatus comprises the hook proper and the guard, these two parts being connected by a steel pin passing through eyes as shown. As the eye for attachment of the hoisting line or chain is formed in the upper end of the guard, the latter is automatically closed directly any load comes on the hook. The centre of the hinge pin is placed a little beyond the centre line of the hook, so as to cause the guard to press tightly against the



The Norden Self-closing Safety Crane Hook.

end of the hook and to make the projecting lug on the guard pass through the slot in the hook, where it can be secured by a cotter if thought necessary. The arrangement has the effect of distributing part of the load to the guard, thereby reducing strain on the hook proper. The device is made in vanadium steel in sizes for loads of 3, 10, and 18 tons respectively.

GENERAL BUILDING NEWS.

NEW CHURCH, MANSFIELD.
Mr. L. Ambler, F.R.I.B.A., is the architect for this church, which has been erected at Forest Town, and the cost of the building was about 3,800*l.* The contract was carried out by Messrs. Vallance & Son, builders, of Mansfield.

NEW CHURCH, HALIFAX.
This church, which is to be erected at Northwood, is designed by Mr. J. F. Walsh, architect. The seating accommodation will be

for 700 persons, and a detached tower is to be erected on the north east side of the church.

CHURCH EXTENSIONS, MAINDOE, NEWPORT.
The extensions to St John's Church are being carried out from plans prepared by Mr. Coates Carter, architect, of Cardiff. The estimated cost is 5,000*l.*, and the builder is Mr. W. A. Linton.

NEW SCHOOLS, CHELMSFORD.
These schools were opened last week, and have been erected from the designs of Mr. W. H. Pertwee, architect, of Chelmsford. The estimated cost of the buildings was 13,475*l.*, and the contractors were Messrs. H. Potter & Son, of Chelmsford.

BUILDING STRIKE, LLANDUDNO.
The labourers employed in the erection of the new higher standard school at Llandudno went out on strike on Monday of last week for an increase of a halfpenny in their wages. Their present wage is 5d. per hour, and they have been working ten hours a day.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with (the names of the applicants are given in parentheses).

Lines of Frontage and Projections.
Chelsea.—Iron and glass conservatory over the one-story portion in front of No. 31, Lowndes-square (Messrs. Robertson, Ltd., for Mr. J. A. Mullens).—Consent.
Clapham.—Erection of a church on the northern side of Calstock-road, Clapham Common, to abut also upon the eastern side of Alfriston-road (Messrs. J. S. Quilter & Son).—Consent.
Fulham.—Cinematograph building upon the site of Nos. 260 and 262, North End-road, Fulham, with a one-story portion in front (Mr. J. S. Beard).—Refused.
Norwood.—Erection of a building on the southern side of Wollington-road, Norwood, between Nos. 668, Knight's-hill, and No. 1, Wollington-road (Mr. A. R. Westworth for Mr. T. Marten).—Consent.
St. George-in-the-East.—Building on the southern side of Commercial-road East, St. George-in-the-East, between Upper Fenton-street and Anthony-street (Messrs. Billings, Wright, & Co. for the Feinman Yiddish People's Theatre Company).—Consent.
Strand.—Projecting illuminating sign at No. 54, Haymarket (Messrs. R. J. Back & Co. for Messrs. J. A. Sinclair & Co., Ltd.).—Consent.
Wandsworth. Bay windows, oriel windows, porches, and bargeboards in front of Nos. 100 to 124 (even numbers only), inclusive, Pretoria-road, Streatham (Mr. H. Thorpe).—Consent.
Wandsworth.—Oriel window in front of No. 27, Newstead-road, Streatham (Messrs. Pratt Brothers).—Consent.
Wandsworth.—Re-erection of the "Railway Bell" beerhouse, on the western side of Mitcham-road, Tooting (Messrs. Nowell, Parr, & Kates).—Consent.
Woolwich.—Erection of Nos. 30 to 44 (even numbers only), inclusive, Dunvegan-road, Woolwich (Mr. J. J. Bassett).—Consent.

Cubical Extent.
Battersea.—Erection of a building exceeding 250,000 cubic feet in extent at the premises of Messrs. Garton, Hill, & Co., York-place, Battersea (Messrs. Garton, Hill, & Co.).—Consent.

Cubical Extent and Space at Rear.
Brixton.—Re-erection of Nos. 476 to 484, Brixton-hill, and Nos. 1, 3, and 5, Tunstall-road, Brixton, with the trade portion exceeding 250,000 cubic feet in extent and with an irregular open space at the rear (Mr. J. W. Stevens for Messrs. Morley & Lancelay, Ltd.).—Consent.
Strand.—Erection of a building upon the site of Nos. 158 to 196 (even numbers only), inclusive, Regent-street, and Nos. 63 to 66, Kingsly street (Messrs. W. Woodward & Sons).—Consent.

Uniting of Buildings.
City of London.—Alterations and additions at premises abutting upon Newgate-street, Warwick-square, and Phoenix-court, City (Mr. C. Stanley Peach for the Oriental Carpet Manufacturers, Ltd.).—Consent.
Holborn.—Openings on the ground and first floors in the party wall between Nos. 113-122, Holborn, and Nos. 107-8, Hatton-garden (Mr. J. Sawyer for Messrs. A. W. Gamage, Ltd.).—Consent.

Peckham.—Double rolling shutters in lieu of double iron doors to an opening in a division wall at a motor garage, Red Bull-yard, Peckham High-street (Messrs. A. L. Gibson & Co. for Messrs. T. Tilling & Co., Ltd.).—Consent.

Woolwich. Double steel roller shutters in lieu of double iron doors to certain openings in division walls of a building at the premises of Messrs. Siemens Brothers & Co., Ltd., on the eastern side of Hardens Manorway, Woolwich (Messrs. Siemens Brothers & Co., Ltd.).—Consent.

Deviation from Certified Plan.

Kensington, North.—Re-erection of a portion of the "Golden Bells" hotel, Notting Hill-gate (Mr. W. Hancock).—Consent.

Alteration of Buildings.

Kensington, South.—Alterations in the basement of Nos. 13, Addison-road, Kensington (Messrs. Joseph & Smith for Mr. A. Levine).—Consent.

St. George-in-the-East.—Alterations to the "Bricklayers' Arms" public house, Fenton-street (late Upper Fenton-street), St. George-in-the-East (Messrs. A. R. Stenning & Partners for Mr. F. M. Fry).—Consent.

Buildings for the Supply of Electricity.

Hampstead.—Two wooden cooling-towers with steel substructures at the Hampstead Metropolitan Borough Council's electricity generating station, Lithos-road, Hampstead (Mr. G. H. Cottam for the Hampstead Metropolitan Borough Council).—Consent.

Uniting of Buildings.

City of London.—Formation of an opening between Nos. 1 and 2, Cheapside, at the ground floor level (Mr. C. R. Farrow for Farrow & Bank, Ltd.).—Consent.

City of London.—Formation of three openings between Nos. 16 and 17, Holborn-viaduct, at the second-floor level (Mr. W. E. Clifton for the Holborn Viaduct Land Company, Ltd.).—Consent.

City of London.—Uniting of Nos. 16 and 13, Moorfields, City (Boots Pure Drug Company, Ltd.).—Consent.

Hackney, Central.—Opening uniting buildings abutting upon Gleebe-road and at the rear of Nos. 432 and 434, Kingland-road (Messrs. Sinclair & Son for Mr. W. E. Garstin).—Consent.

Islington, West.—Opening of a larger size than specified in the said section in a division wall at Messrs. Callow's van works, Pembroke-street and Bameston-street, Islington (Messrs. Lovegrove & Papworth).—Consent.

Kensington, North.—Uniting of Nos. 11 and 12, Bolton-mews, Kensington, at the ground-floor level (Mr. L. Cutting).—Consent.

Limehouse.—Opening in the party wall between Nos. 125 and 127, Salmon's-lane, Limehouse (Messrs. H. Bignold & Idle for Mr. H. J. Knowlden).—Consent.

Marylebone, West.—Openings in the party wall between Nos. 3 and 4, Barrett-street and No. 5, Barrett-street, St. Marylebone (Mr. G. Longford for Mr. C. Fedral).—Consent.

St. George, Hanover-square.—Formation of an opening at the first-floor level in the party wall between Nos. 24 and 25, Conduit-street, St. George, Hanover-square (Mr. A. B. Jackson for Mr. G. Bowdon).—Consent.

St. Pancras, South.—Enlargement of an opening uniting No. 42, Tottenham-street, with a factory at the rear next to Tottenham-mews, St. Pancras (Mr. J. C. Mather for Messrs. Parkins & Co.).—Consent.

Cubical Extent and Uniting of Buildings.

St. Pancras, East.—Formation of a doorway in one of the division walls between blocks A and C and the use of double-armoured doors to such opening (Messrs. Burton & Co. Beito-dano for the F.I.A.T. Motor Cab Company, Ltd.).—Consent.

Strand.—Erection of a building on the site of Nos. 188 to 186, inclusive, Regent-street, and Nos. 55 to 53, King-street (Messrs. W. Woodward & Sons for Messrs. Swears & Wells).—Refused.

The recommendations marked † are contrary to the views of the metropolitan borough councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERARGOYD.—Fire-station (5051); Messrs. G. Beames & Co., builders, 16, Violet-road, Roath, Cardiff.

Banbury.—Extensions to Berrymoor Laundry; Mr. G. Earley, architect, Bridge-street, Banbury.

Bargoed.—School (5,000l.); Mr. D. P. Jones, architect, Charles-street, Cardiff.

* See also our list of Competitions, Contracts, etc., on another page.

Barleston and Hugglescote (Leicester).—School; Mr. C. Fowler, architect, 33, Bowling Green-street, Leicester.

Barnet Green (Birmingham).—Police-station; Mr. A. Rowe, architect, Foregate-street, Worcester.

Birmingham.—Factory, Brook-street; Messrs. E. Harper & Bro., architects, Ruskin-chambers, Birmingham; Mr. C. Bryant, builder, Small Heath, Birmingham. Christ Church schools; Mr. M. E. Type, architect, Edmund street, Birmingham; Messrs. Whitehouse & Son, builders, Waterworks road, Edgbaston, Birmingham. Theatre, High-street, King's Heath; Mr. V. Peel, architect, Temple-street, Birmingham. Jewellers' school; Messrs. Cossins, Peacock, & Jewellers, architects, 83, Colmore-row, Birmingham; Messrs. J. Dallow & Sons, builders, Blackheath, Birmingham. Factory, Garrison-street; Messrs. Richard Fenwick, Ltd., builders, 40, William Edward-street, Birmingham.

Biopham.—Additions to hydro for the Cleveley's Hydro Company.

Bolton.—Tramway repair depot; Messrs. Townson & Sons, builders, Park Hill street, Bolton.

Bolton-on-Dearne.—School (2,500l.); Mr. J. Stuart, architect, County Hall, Wakefield.

Boston.—School; Mr. J. H. Nichols, Secretary, Education Committee, Essex County Council, Chelmsford.

Bristol.—Rebuilding premises, Castle-street, for Mr. S. H. Justin.

Brixton.—School; Mr. W. V. Bushell, Secretary, Education Committee, Norfolk County Council, Norwich.

Broomfield.—School (4,470l.); Mr. J. T. Bailey, builder, Chelmsford.

Brynbo.—School; Mr. W. D. Wiles, architect, High-street, Wrexham.

Burton-on-Trent.—Governor's house for gas depot (2,250l.); Mr. Geo. Hodges, builder, Horninglow-street, Burton-on-Trent.

Chatham.—School (3,220l.); Messrs. Godden & Sons, builders.

Colleston.—Enlargement and improvement of school for the Slains School Board.

Dairycotes (Hull).—School, Hessel-road; Dr. J. T. Riley, Secretary, Education Committee, Hull Town Council.

Dalkeith.—Bank premises; Messrs. S. Mitchell & Wilson, architects, Edinburgh.

Derby.—Bank, Midland road; Mr. R. C. Thirby, architect, Irongate, Derby.

Dover.—School; Barton-street; Mr. R. Hawke, architect, Maison Dieu House, Dover.

Dundee. House, Sandman-street; Mr. Jas. Sibbald, architect, 25, Commercial-street, Dundee. Offices, warehouses, etc., South-road, Loches, for Messrs. East Bros., Ltd.

Dunfermline.—Council offices, Mavgate (6,000l.); Surveyor, Dunfermline Parish Council.

Edinburgh.—Established Church; Pastor, St. David's Established Church, Edinburgh.

Exeter.—Alterations at Cattle Market (1,530l.); Mr. E. H. Westcott, builder, Heavitree, Exeter.

Folkestone.—Additions, public baths, Food-road; Mr. A. E. Nichols, Borough Surveyor, Folkestone Town Council.

Friesland (W.R. Yorks).—School; Mr. W. V. Dixon, Secretary, Education Committee, W.R. of Yorks County Council, Wakefield.

Gale.—Shop and eight houses for the Littleborough Co-operative Society.

Gateshead.—Improvements at St. Mary's Church (800l.); the Vicar.

Glasgow.—Church offices, etc., corner of Battlefield and Cathcart roads, for the Deacons' Court of the Battlefield United Free Church.

Halfway.—School (300 places); Mr. J. W. Nicholas, Secretary, Education Committee, Carmarthenshire County Council, Carmarthen.

Halifax.—Six tramway shelters; Mr. W. M. Rogerson, Electrical Engineer, Halifax Town Council.

Heath Hayes.—Club, Hedges-road, for the Heath Hayes Liberal Association.

Hove.—Proposed school, corner of Dyke road and Old Shoreham-road; Mr. A. F. Graves, Clerk to the Governors, 117, North-street, Brighton. The following plans have been passed:—Mr. T. Barnard, ten houses, Langdale road; Mr. F. Parsons, eight houses, Vallance-road; Mr. S. James, for Mr. C. Handford, garage, Pembroke-crescent. A plan has been lodged by Messrs. Clayton & Black, for Mr. E. A. Smithers, for alterations and additions, "The Gables," Furze Hill.

Howden.—Additions and improvements at laundry; Mr. H. Green, Clerk, Board of Guardians, Howden.

Hyndland (Glasgow).—Tenement of houses, corner of Hyndland and York drives, for the Western Shops Company.

Lakenham.—School; Mr. C. Brown, architect, Cathedral House, Norwich.

Londonderry.—Restoration of St. Columba's Church; Messrs. Bachelor & Hicks, architects, Merriam-square, Dublin.

Maesteg (Glam.).—Extensions, Town Hall and market place (3,000l.); Mr. S. J. Harper, Surveyor, Maesteg Urban District Council.

Mapperley.—School; Mr. L. Maggs, architect, Shire Hall, Nottingham.

Matlock.—Post-office; Mr. H. Hopkinson, architect, Vankosp.

Mellor.—Conservative club and hall; local Conservatives.

Millom (S.O., Cumb.).—Alterations to school (1,500l.); Mr. R. G. A. Bradley, builder, Salhouse-road, Millom.

Milton.—School (5,700l.); Mr. W. Hutchings, architect, County Hall, Stafford; Mr. J. Moss, builder, Milton.

Newcastle-on-Tyne.—Additions, cottage homes (4,030l.); Messrs. E. Henderson & Sons, builders, Ponteland, Northumberland.

North Staffs.—Additions, North Staffs Infirmary; Messrs. Scrivenor & Sons, architects, Shelton, Hagley; Mr. S. Wilford, builder, Newcastle, Staffs.

Nottingham.—Extensions, Children's Home, Edward-lane; Mr. W. B. Starr, architect, Victoria-street, Nottingham; Messrs. Gilbert & Hall, builders, Crocus-street, Nottingham.

Oldham.—Additions, North Staffs Infirmary; Messrs. Scrivenor & Sons, architects, Shelton, Hagley; Mr. S. Wilford, builder, Newcastle, Staffs.

Parkstone.—Extensions, St. Osmond Church (6,000l.); the Vicar.

Parrell.—Alterations to premises for Messrs. Parrell.

Plymouth.—The following plans have been passed:—Messrs. Vickery & Sons, alterations and additions, premises, corner of Bedford and Cornwall streets; Messrs. Andrew & Co., Ltd., motor garage, etc., Bourn's place; Architects, care of Building Committee, church, Alvington-street.

Rotherham.—School, Kimberworth (15,660l.); Messrs. W. Nicholson & Son, Ltd., builders, Prospect Saw Mills, Sheaf-street, Leeds.

Salford.—The following plans have been passed:—Mr. H. James, sixteen houses, Selwyn-street; Messrs. Baines & Co., Ltd., extensions and additions to Phoenix Brass Works, Greasbro' road; the Trustees, United Methodist Church, chapel (455 l.), also schoolroom (270 places), Gerard-road and Tooker-road; Mr. H. Addis, four houses, St. Stephen's-road; Messrs. J. J. Habershon & Sons, additions to works.

Salford.—Extensions to offices, Eccles New-road; Mr. F. Townson, Clerk, Board of Guardians, Salford.

Saunthorpe.—Church, junction of Frodingham-road and High-street (3,030l.); Messrs. Pattinson & Son, builders, Ruskington.

Shephard.—Offices for the Shephard Hosiery Company.

Silsden.—Cooking centre; Mr. J. Stuart, architect, County Hall, Wakefield.

Smallthorpe.—School (5,700l.); Messrs. J. M. & Son, builders, Milton.

Smethwick.—Extensions, factory, Foundry-lane, for Messrs. G. Wrigley & Co., Ltd.

Stoke-on-Trent.—The following plans have been passed:—Messrs. J. Greenwood & Sons, Ltd., mill, Trafford Park; Mr. Paul Powell, picture place, Chalon-road.

Swansea.—Proposed civic centre; Mr. Geo. Bell, Surveyor, Swansea Town Council.

Torquay.—The following plans have been passed:—Sister Superior, additions, St. Vincent's Orphanage; Mr. J. H. Midgley, additions, "Birstwith"; Mr. E. G. Easterbrook, additions, Geneva Bakery; Mr. Kellow, four houses, Hapway-road.

Tunstall.—School, Goldenhill; Messrs. A. R. Wood & Son, architects, Burslem; Mr. F. Pemberton, builder, Tunstall.

Wigan.—Coronation hall, Wytarn Estate (5,000l.); Messrs. Settle & Brundrit, architects, Uxton.

Walsall.—The following plans have been passed:—Mr. W. Oakley, shop premises, Wolverhampton-road; Mr. S. Moseley, four houses, Redcross-street, Leamore. A plan has been lodged by Mr. E. Smith for alterations and additions, premises, Stafford-street.

Wazep.—School, Burn's lane; Mr. C. J. Bristowe, Secretary, Education Committee, Notts County Council, Nottingham.

Waterloo.—School (1,200 places); Mr. H. T. Rutherford, Secretary, Education Committee, Blyth Urban District Council.

Wigan.—The following plans have been passed:—Mr. Peter Fairbairn, three houses, Smotherst-road; the Trustees, Primitive Methodist Church and School, Enfield and Wesley streets.

Yatalva.—Fifty houses; Surveyor, Pontardawe Urban District Council.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held in the County Hall, 60, Abchurch-lane, S.W., on Tuesday, the Chairman, Mr. Edward White, presiding.

LOANS.—The Finance Committee recommended, and it was agreed, that a loan of £1,000 should be made to the Greenwich Borough Council for the purpose of extending into the frontage of the Norman art depot and part of the cost of the end wall.

INTERNATIONAL CONGRESS OF ARCHITECTS.—At the request of the Royal Institute of British Architects, the Architect of the Council, Mr. W. E. Riley, is to represent the Council at the International Congress of Architects to be held at Rome in October next.

LAMBETH BRIDGE.—It was recommended by the Improvements Committee that application be made to Parliament for authority to construct this bridge as a steel arch bridge, 48 ft. wide, at an estimated cost of £1,000. This was agreed to.

ST. PAUL'S BRIDGE.—It was stated by the General Purposes Committee that the City Corporation had requested permission for the Chief Engineer of the Council to give evidence before the Committee of the House of Commons which was dealing with the scheme, and that permission had been given.

Mr. J. D. Gilbert, in considering this question, said that it was a matter of great regret and surprise that the London County Council had not been asked to express an opinion on the matter of this new bridge. He also considered that the Parliamentary Committee should have requested that the architect to the Council be called to give evidence "on behalf of the Council," and in a private capacity.

Mr. Gilbert went on to say that there was a reason why the Council, the greatest municipal body in this country, should not be represented on the Committee, and that money for the scheme did not belong to the Bridge House Estates Committee, but to London. He said that there had been much controversy in the public Press as to whether there should be a bridge leading from St. Paul's or whether it should be somewhere else, but he thought the Council should have the opportunity of giving their views on the matter.

Mr. Taylor, in replying, said that there had already been three eminent architects chosen to give evidence before the Committee, and that these gentlemen would no doubt find that the scheme proposed, should be one that would be all that was desired.

FIRE-STATION.—It is proposed to carry out certain necessary repairs and alterations which are required at the Whitefriars fire station at an estimated cost of £54. The Fire Brigade Committee reported that painting work is to be carried out at various fire stations, and that tenders had been received for that purpose. Tenders are also to be invited for electric lighting at the Kennington fire station.

PUMPING PLANT AT COLNEY HATCH.—It is reported by the Asylums Committee that it considered advisable to install a sewage pump at Colney Hatch Asylum, which will have a capacity of 300 gallons an hour and be driven by a gas-engine, instead of the steam pump now in use.

LONG GROVE ASYLUM.—It is also proposed to widen the verandahs attached to the mission hospital villas, for the purpose of the accommodation of patients in bed, and the Asylums Committee stated that the estimated cost of the alteration was 1937. It was also reported by the same Committee that a house is to be erected at this asylum for the first assistant medical officer.

TOWN PLANNING CONFERENCE, WEST BROMWICH.

A CONFERENCE of municipal authorities on the subject of town planning, convened by the Institution of Municipal and County Engineers, was opened recently in the lecture theatre of the Institute, West Bromwich. Mr. A. D. Greatorex, M.Inst.C.E.,

President of the Institution, presided, and there were present representatives of municipalities and municipal engineers from all parts of the United Kingdom.

The President in his inaugural address said:—

"The town planning part of the new Act involves a mutual advance in the relations between the owners of land and the local authorities in this country, and enables each party to co-operate with the other in promoting the general interest."

Many complaints have been made as to the complicated nature of the regulations issued by the Local Government Board, but you have, no doubt, seen sufficient of the working of the Act to recognise its immense value in dealing with this problem.

The necessary amendments to the Housing and Town Planning Act can only be brought about by a careful study of what is a complex Act in all its manifold and intricate bearings. The aims of the Act are undoubtedly high, and have for their object the permanent improvement of the public health. The future alone will prove whether this portion of the Act is in many cases as unworkable as some of its critics say it is. The initial stages of several schemes are already being proceeded with by local authorities, and no town has shown more interest and practical consideration of this subject than the neighbouring city of Birmingham.

For the improvement of our towns the first thing to be demanded is the provision of worthy routes connecting the centre with the open country. The development of the tramways is resulting in a continually increasing proportion of the population being brought to their daily work, and if the routes are finely planned and studied with a view to their artistic effect they will in themselves exercise an educational influence on all who use them.

Expressions of opinion have been given to the idea that municipal engineers and surveyors are not the proper persons to be entrusted with the carrying out of this Act, but that members of other professional bodies are more competent to undertake this work. Who, after all, is better able and qualified than the local surveyor, by reason of his knowledge of not only the internal working of the Act, but by his general knowledge as to what is necessary as regards the development of the district and the lines which it should take? But we must show ourselves able to fulfil these duties.

It therefore behoves every member of this Institution, especially those who are likely to have to deal with this subject, to make themselves thoroughly acquainted with not only the various clauses of the Act, the regulations framed and issued by the Local Government Board, but with all the developments which take place from time to time in connexion with the subject.

The desire of the Council in arranging this Conference was of a twofold character—firstly, to ventilate the subject amongst the members of the Institution, and thus to give them the opportunity of becoming fully acquainted with the method of its working and latest development, and, secondly, to show to the general public, and especially the members of the various local authorities, that the engineer and surveyor was fully alive to his added responsibilities and well able to perform the extra duties placed upon him by the Act when called upon, and, at the same time, to show that on account of the peculiar position in which he was placed no one was better able to deal with this subject.

Conferences alone will not solve the problem, but they undoubtedly have a very definite value in this connexion, because the majority of the delegates go prepared either to add their quota of knowledge to others or to learn something which may throw light upon some of their own local difficulties."

Mr. W. T. Lancashire, M.Inst.C.E., City Engineer of Leeds, presented the first paper, on "Town Planning in Congested Areas and Improvements and Street Widening in the City of Leeds." He said that, like many other of the great commercial and industrial cities, Leeds no doubt failed to realise the possibilities of its growth. The total capital expenditure on street widenings and improve-

ments had been 2,318,043. The outstanding debt amounted to 2,092,044., equal to a charge of 1s. in the pound for interest and sinking fund charges. The total length of street widenings and improvements and new streets carried out by the City Council in a period of about forty years was over 36½ miles. This was exclusive of widenings carried out by owners of land at their own expense. The buildings erected during the last few years were generally on a much larger scale, often of considerable architectural merit, and the city had consequently gained largely in this respect. Although these improvements had resulted in the possession of many streets and buildings of which Leeds was justly proud, it could not be argued that reconstruction was as satisfactory as construction properly planned in the first instance, apart from the extremely heavy extra cost. One was bound to realise that in some cases there had been no design beyond street widening and better travelling facilities, no *motif* beyond the wider streets and the better buildings which had followed the widenings, and some of the fine new buildings had been erected where it was impossible to appreciate properly the full beauty of the architect's creation. In the matter of width it was impossible to satisfy different interests. Often one heard the opinion expressed by shopkeepers that a street must not be widened beyond quite a limited amount, or it would be ruined from their point of view, whereas the tramway and other traffic called for much greater width to cope with the needs of the travelling public. Experience in Leeds proved that a bold policy in the width of streets was best. The number of parks and recreation-grounds was twenty-eight, and three more were leased for long terms of years. The total area amounted to 1,171 acres, equal to about 10 per cent. of the built-up area of the city. The total capital expenditure had been 549,639., and the annual charge was 30,817., equal to a rate of 3.47d. in the pound. The cost reached a formidable figure, but the reduction in the death-rate (largely attributable to these works), the greater convenience obtained, and the justifiable increase in pride in the city should reconcile most of the inhabitants to the heavier demands made by the rate collector.

LAW REPORTS.

HIGH COURT OF JUSTICE, CHANCERY DIVISION.
(Mr. Justice Eve.)
Dispute as to a Party Wall.

Carden v. Layton.

THIS action came before his lordship on Friday, July 7, on motion by the plaintiffs, W. A. Carden, A. J. Carden, and Charles Stubbs Layton, suing as trustees of the will of the late Wm. Carden, against the defendant, W. F. Revill Layton, of Hampton Hill. The plaintiffs asked for an injunction to restrain the defendant from cutting into, under-pinning, raising, thickening, or otherwise interfering with, or trespassing upon, the party wall on the south side of the plaintiffs' premises, No. 19, Goswell road, Finsbury, without complying with the procedure laid down under the London Building Act, and also a mandatory order on the defendant to pull down the wall he had built.

Mr. Clayton, K.C. (with him Mr. Cozens-Hardy,) said that in answer to the affidavit filed in support of the motion the defendant had filed evidence which raised a conflict of fact. There were matters as to which there was no dispute, which he (counsel) thought would entitle the plaintiffs to some relief on the facts. The plaintiffs had offered to let the motion stand over with a view of an early date being fixed for trial, but the defendant was not prepared to assent to that. The facts of the case were that the defendant's property was on the south side of plaintiffs' building, and he commenced to cut into the party wall and he commenced consulting the plaintiffs, who were the freeholders. He had given notice, however, to the leaseholders, and he had gone on with the wall to a height of 8 ft. 6 in. above the level of the pavement when the plaintiffs objected, and he then gave a verbal undertaking not to proceed with any work in connexion with the wall without the plaintiffs' consent. On June 6 plaintiffs discovered the defendant had carried the wall to a height of 19 ft., and plaintiffs' contention was that such wall was in

part bonded into the party wall. The defendant had also inserted a girder, which he said was a ledger, and his contention was that the wall he was building was a separate wall. There was a dispute as to that, but it was most important for the plaintiffs to be able to see whether the start of the wall was right, and they wanted to make some excavations in order to see that the thickening that was done before any undertaking was given was done in such a way as to be a proper foundation to the rest of the structure. This question was whether the building so far as it had gone up should be exposed so that the plaintiffs could see exactly what was there. Mr. Clayton submitted that the defendant infringed the common law rights of the plaintiffs before he gave notice. It was desirable that the case should be taken with witnesses so that his lordship should be able to decide as to the verbal disputes. Counsel added that in accordance with the provisions of the London Building Act each side had appointed a surveyor, and Sir Alexander Stenning had been appointed umpire, but the arbitration proceedings had been postponed pending the present application.

Mr. Lawrence, K.C.: I suggest that the arbitration under the Act should go on.

Mr. Clayton: My difficulty is that I want to see that the work already done has been properly done.

Mr. Justice Eve: Cannot you agree upon some gentleman to inspect the work and report upon it, and then allow the arbitration to proceed?

Mr. Lawrence: I am willing.

Mr. Justice Eve: Why not let the umpire report to the Court whether the work has been properly done, and for that purpose the defendant will give him all facilities.

After further discussion it was agreed that by consent Sir A. Stenning should be appointed to report to the Court whether the work already done had been done properly and in accordance with the requirements of the London Building Act, and for that purpose he should be allowed to make any necessary excavations or pulling down to expose the work done.

Mr. Justice Eve: There will be liberty to apply when the report is received, and the motion in the meantime will stand adjourned.

Contractor's Action against Building Owner.

MR. MOIR MACKENZIE, High Court Official Referee, began on July 5 the hearing of an action by Mr. Frederick George Minter, a contractor living in Wimbledon, against Mr. Charles Waldstein, a Professor of Fine Arts at the University of Cambridge, in respect of certain payments alleged to be due to Mr. Minter under a building contract involving the pulling down and reconstruction of Newton Hall, near Haslemere, five miles from Cambridge.

Mr. Lewis Thomas, K.C., supporting the claim, said that Professor Waldstein selected to carry out his wishes Mr. Frederick William Foster, a well-known architect, as well as to assist in brick, stone, and timber, and who had carried out a great deal of very high class character for millionaires like Mr. Alfred Rothschild. Bills of quantities were subsequently prepared and specification and designs carried out. The contract was entered into on February 3, 1910, and the contract price for the building was £12,975. The building was to be finished within six months. The work was immediately entered upon and carried out without any hitch or difference between the employer and the architect or between the contractor and the architect right up to January of this year.

There were complaints from the defendant after that date as to alleged defective work. Subsequently Mr. Waldstein paid the plaintiff £1,500, under the architect's certificate, under protest. Another certificate for £2,750 was issued. This was the amount sued for in these proceedings. The defendant had alleged, amongst other things, that a considerable amount of work was not authorised directly or indirectly, and that a considerable amount of work was defective, and that the plaintiff's prices were excessive. Mr. Minter was quite prepared at any time to repair defects if only told what they were. Counsel mentioned that the defendant, a gentleman with æsthetic tastes, wanted the new building to look as much as possible like a building in the reign of George I.

Mr. Lewis Thomas further pointed out that from start to finish the work was carried out under the supervision of a resident clerk of the works, under whom Mr. Minter had been told to take his instructions. The defendant had in these premises installed seventy-four heat radiators and their attendant pipes—there were 140 ft. of hot-water pipes. Mr. Waldstein had followed what Mr. Thomas described the stupid American plan of "broiling the house out."

Mr. Waldstein had, too, wanted done, work

which to be done satisfactory should have taken from nine to twelve months, but Mr. Waldstein had insisted on having this contract carried out in a period of six months. The defendant had alleged, amongst other things, that the roof was of unsound construction and workmanship, and that there were settlements, that the drainage system was defective, that brickwork was bad, and that the mortar was inferior. Throughout the whole building, said Mr. Thomas, there were matters which had the appearance of being serious and important, but in all these details shown in defence there were a series of complaints which the merest tyro in a builder's office would be astonished to see listed, still less men of greater experience. His client had done all that he had contracted to do. There were in detail in these paragraphs of defence 228 items, and one could boil them all down into two items. One concerned the roofing, and the other had relation to joists and flooring. Counsel submitted that for certain of the defects—if they existed his client was not responsible, and, as for the others, he would call evidence to refute the defendant's allegations. Counsel added he also disputed the defendant's suggestion that he had at any time revoked the authority of Mr. Foster to act on his behalf. In the course of further references to the defendant's allegations, Mr. Lewis Thomas insisted that at the defendant's own wish variations from the drawings and specifications were made. He instanced alterations that he said had to be made in connexion with a bell-turret on the roof, so that it might be seen from all parts of the estate, and satisfy Professor Waldstein's liking for artistic effects. Counsel considered that the way in which the figures in the counterclaim were made up was really laughable when one came to analyse them.

Mr. St. John Morrow (counsel for the defendant): We have heard that before, Mr. Thomas.

Mr. Lewis Thomas: Perhaps you will begin to appreciate it, and then withdraw your counterclaim. Reverting to the allegation that Mr. Waldstein had overheated the house by radiators in order to take up residence there all the quicker, Counsel mentioned that Mr. Foster had wandered about the country in search of the beautiful and antique, and he thought that some old panelling he had seen would be an enhancement of the Professor's dining-room. He sent it down to Newton Hall, and it was erected so as to improve and beautify the dining room. So great was the heat put on in this building that this old wood paneling had been split. Counsel suggested that certain of the alleged defects could be put right for a few pence. As for others, neither Mr. Minter nor the architect, Mr. Foster, had had the opportunity of putting them right.

Mr. Green was there with authority to give Mr. Minter directions on behalf of Mr. Foster. The correspondence showed Mr. Green to be the alter ego of Mr. Foster. Just as Mr. Foster acted by Mr. Waldstein's authority, so Mr. Minter had acted under Mr. Green's instructions. Counsel submitted that at the time Mr. Foster gave his certificate for £2,750, odd that certificate was for money earned, and to which his client was entitled in any event.

Mr. Frederick Albert Minter, who said that he had been with his father eight years, and who took charge of the work at Newton Hall, gave evidence in support of the plaintiff's case.

He said that the ordinary time to carry out a contract of this kind was twelve months, but owing to the short time they were allowed, certain parts of the work had to be unduly hurried. The witness added that Mr. Foster told him he was to work under Mr. Green's instructions, and that any points that wanted settling he was to go to Mr. Green to settle them. Mr. Foster had told him that Mr. Green was a qualified architect. Witness took Mr. Green's instructions for variations and extras. When Mrs. Waldstein asked for certain things to be done he told her they were in the nature of variations and extras, and that the clerk of the works must be told.

The case was proceeding when we went to press.

WESTMINSTER CITY COUNCIL.

At the fortnightly sitting of this Council on July 6 the following amongst other matters were dealt with:

Piccadilly-Circus Rebuilding.—The Improvements Committee brought up a further report dealing with the application of Mr. J. Murray, F.E.I.A., for consent to the proposed new building lines for portions of Glasshouse-street, The Quadrant, Piccadilly, Piccadilly-circus, and Regent-street, W. The plan showed a straightening of the building lines on both sides of Regent-street from Jermyn-street to Piccadilly-circus, certain land being given up

to the public, and other land being taken from the public way. The corner of Messrs. Swan and Edgar's premises is proposed to be set back some 10 to 12 ft., and the land added to the public way, while a small strip on the south side of the Quadrant is to be taken from the footway. The plan also showed a rebuilding of the existing columns of the County Library Office in slightly altered positions, and a slight setting back of the building line on that side of Regent-street, while it is proposed to provide a short passageway for foot passengers under the corner, at the junction of Regent-street and Glasshouse-street. A narrow strip of land on the south side of Glasshouse-street is taken from the footway at that spot, while a small strip is given up to the public way. The Committee recommended that the Council disapprove of the proposed new building line of Mr. R. W. Grailley Smith proposed as an amendment that the Council do approve of the new proposed building line, and appeal to the meeting not to adopt a "dog-in-the-manger" policy, and so jeopardise a great principal improvement. The amendment was carried by a considerable majority.

LONDON COUNCILS.

Barnet.—A plan has been passed for Mr. W. C. Weymouth for St. Peter's Vicarage, Arkley.

Bermondsey.—The following plans have been passed: Messrs. Barlow & Roberts, 15 Redcross-street, Southwark, five shops and houses, Tower Bridge-road; Messrs. J. A. Stracey & Son, 152, Ports-road, S.E., for Dr. Salter, Richmond, Stratton, and Goldie, additions to 82, Southwark Park-road; Mr. W. Harbrow, South Bermondsey, for the Commissioners of Police, New Scotland-yard, S.W., alterations and additions to 67, Upper Grange-road.

Craydon.—Application is to be made by the County Council to the Local Government Board for sanction to borrow £4,500, for carrying out works in connexion with the Norwood Junction subway. Plans, specifications, and estimates are to be prepared for the construction of a relief road from Thornton Heath to Purley via Thornton-road, Wadden March lane, Wadden Court-road, and Coldharbour lane. The following plans have been passed:

Mr. C. H. Taylor, 9, Bingham-road, twelve houses, Lower Addiscombe-road; Mr. P. Richardson, 2, Malvern-road, half St. Saviour's-road; Messrs. Chesterton & Sons, Nabour, three houses, Strathely-avenue; Mr. C. S. Banks, 16, Oakfield-road, fourteen houses, Turrell-road; Mr. W. Hine, Morland-road, four houses, Lower Addiscombe-road; Mr. D. Waller, Old Palace-road, warehouse, North end; Messrs. Burberry & Wooldridge, 112A Churchill-road, additions to hall, Thornton-road, St. Jude's; Mr. C. H. Ridge, 84, High-street, motor garage, rear of 110, High-street; Mr. H. W. Pratt, London, E.C., hall and class rooms, Brighton-road, Purley.

East Barnet Valley.—According to a resolution moved by Councillor Ford, the Surveyor has been instructed to prepare plans and the cost of providing public swimming baths, and other baths on land in Lancaster-road. A plan has been passed for the Society of Friends for a meeting-house in Waterfall-lane.

East Ham.—The Engineer has been instructed to prepare plans and estimates of the cost of constructing three ladies' conveniences to be erected in Station-road, High-street South, and Barking-road. Plans have been lodged by Mr. W. Stewart for alteration to "William the Conqueror" public-house, Greenhill-grove; also by Mr. E. J. Jenner for nineteen houses, Lancaster-road.

Greenwich.—Mauritius-road is to be repaired at an estimated cost of £22. Plans have been passed as follows: Mr. Edward Carter, works Tunnel-avenue, for the British Oxygen Company; Messrs. Proctor & Sons, additions to London County Council School; Messrs. Young & Hall, additions to Mill Hospital, Greenwich-road.

Hendon.—A plan has been passed by the Rural District Council for Mr. W. Fenn for Mr. G. Drueit, ten houses, Southfields Park. Application is to be made by the Urban District Council to the Local Government Board for a loan of £600, to carry out kerbing, etc., works in part of Hammers-lane Mill Hill. The Surveyor has been instructed to prepare an estimate of the cost of kerbing the footpath in Person-street from Finchley-lane to Derby House. A report has been received from the Medical Superintendent of the Isolation Hospital as to the need of providing additional accommodation for the nursing staff, and the Surveyor has been instructed to prepare the necessary plans and estimates for the erection of a cottage near the hospital. The following plans have been passed: Second Hampstead Tenants, Ltd., twelve houses, Addison-way, Hampstead Garden

urb, also ten houses, Erskine-hill: Mr. T. P. ple, five shops, Laurance-street, Mill Hill; Mrs. Galliford & Saunders, six houses, Eger-gardens; Mr. H. Dawson, twenty-two houses, Crews's Hill; Mr. T. G. by, six houses, Limes avenue, Mill Hill; Mr. E. H. Waterman, twenty-six houses, High-avenue, Golder's Green. The following mans have been lodged:—Sir Horace Regnart, cottages, The Drive, Mill Hill; & Mme. Paul Perran, *enfe*, Colindale-avenue; Messrs. Hollis & Newcombe, eleven ps, Lawrence-street, Mill Hill; Mr. E. ps, fourteen houses, Nant-road, Child's Hill. **Hornsey.**—The tender of Messrs. E. Laurance Sons, Ltd., has been accepted for the execu- of contract works Nos. 1 and 2 at 1,376l. 2,137l. respectively in connexion with the ension of the electric lighting station in mienham-lane. The following plans have en passed:—Messrs. Hollis & Home, Finch- alterations and additions to No. 1, The ade, Archway-road, Highgate; Mr. Hy- est, Redston-road, Hornsey, four houses, den-road, Crouch End; Mr. Henry Munro, the Imperial Property Investment Com- y, Ltd., eight houses, Glassyn-road, chard-road.

Widlington.—A new 9-in. pipe sewer 340 ft. gth is to be substituted for the old 18-in. ck barrel sewer in Grange-road at an esti- cost of 265l.

Wimbeth.—Repairs are to be carried out to ortion of the carriage-way in Knight's-hill an estimated cost of 150l.

Wolp.—The following roads, among others, are to be repaved or repaired during the arter to end September next at the fol- lowing estimated costs: Repairs to wood paving, Bow-road, 250l.; repairs to wood and paving, Bow-road, 300l.; laying lithofalt cks on concrete in part of Oban-street, 208l.; to part of Jeremiah-street, 182l.; repairs to asphalt and concrete footpaths in King- street, 475l.; new asphalt paving on existing footpaths, Cotton-street, 710l. An application to be made to the London County Council sanction to borrow 1,280l. for extensions to utricity mains during the current financial ear. The following plans have been passed:— Messrs. Walter Lawrence & Son, nurses' home, Nos. 97 and 99, Bow-road; Arthur inson, laundry block at St. Catherine's Con- at, Bow-road.

Widmound.—The tender of Messrs. ferro-con- crete accepted for the erection of a ferro-con- crete footbridge at the Green Gardens Station at High Park-road. Plans submitted by the Borough Sur- veyor for making up part of High Park-road an estimated cost of 446l. and Spring Grove- ad at 355l. have been approved, and the ap- plication for sanction to the Local Government is to be made to the Local Government. Plans have been passed by Messrs. Wensford & Hayward for eight new houses, Ennersdale- ad; also for Messrs. Scott & Williams for additions to 24, Cumberland-road.

Wentley.—A plan of Messrs. J. H. B. Stead, Esq., & Gladding for the erection of block of shops with flats over on the north e of Oxford-street.

Tottenham.—The following plans have been ased:—Mr. W. R. Cruse, four houses, West- ry-avenue; Mr. H. Leban, extensions to 2, naburn-road, Tottenham; Messrs. W. J. Totten- and Edmontson Gas Company, extensions offices, High-road. A plan has been lodged the British Brails and Bootlaces, Ltd., for tensions to Torley's factory, Ashley-road.

Wandsworth.—The tender of Mr. Thomas lams has been accepted at 1,232l. for paving ng-road, Tooting, and constructing the apaths with Aberdeen adamant paving. The Council has also accepted the tender of Messrs. E. Parry & Co. at 875l. for paving t of Mandrake-road, Balham, and con- ducting the footpaths with Victoria indurated paving. Tenders are to be invited for paving t of Edgeley-road, Clapham North. Messrs. M. Griffith & Co.'s tender at 4,355l. has been cepted for woodpaving and other works at apham Common, North Side. The following plans have been passed:—Messrs. Woodley & Co., Wimbeldon Park-road, South- ill; Messrs. Withers & Meredith, church ill, Streatham High-road; Mr. G. A. Gale, otor house, Luttrell-avenue, Putney; Mr. J. Benshaw, St. Michael's, school buildings, e of Granville-road and Viewfield-road, outhfield; Messrs. Swan Bros, additions, Nos. 44 and 46, Balham High-road; Mr. J. arsons, additions to St. Peter's Hall, Manor eed, Clapham North; Mr. J. C. Radford, igh-street, Wandsworth, and five ur shops, High-street, Wandsworth; Mr. W. A. adman, laundry, etc., rear 197, Brixton-hill, reatham; Messrs. H. Wakeford & Sons, ury premises, High-street, Clapham; Messrs. ain & Selley, four houses, Tooting Bec-road, ham.

Waltham.—Plans have been passed by the ural District Council for Mr. W. G. Taylor ar an office and store at "Lonsdale," Christ-

church-crescent; also for Vicar and Church- vards for alterations and additions to the parish church. The Urban District Council has passed the following plans:—Mr. E. Wood- field, showroom, Whippendell-road; Mr. T. W. Chant, motor garage, Clarendon Lodge, Clarendon-road; Messrs. Stimpson, Lock, & Vince, offices, Aldenham-road; Messrs. Clutter- buck, alterations to Victoria Inn, Chalk Hill; Mr. D. Barnes, four houses, Whippendell-road; Mr. E. Fuiks, two pairs of houses, Oxhey- avenue; Palace Theatre Company, alterations and additions, Palace Theatre.

West Ham.—The following plans have been passed:—Mr. W. Jacques, additions and alterations to school, Colegrave-road, also school, Water-lane, Stratford; Mr. H. Brickell, additions and alterations to 252, Barking-road, Canning Town; Mr. M. Levy, additions and alterations to 138 and 139, Victoria Dock road, Canning Town; Messrs. W. T. R. Milburn, additions and alterations, Berwick House, Broadway, Stratford; Mr. M. W. Hudson, blouse factory, Maitland road, Stratford; Mr. E. J. Hosking, additions and alterations, 153, The Grove, Stratford; Mr. A. Bothwell, shop and house, Victoria Dock-road, Canning Town; Mr. J. H. Gladwell, alterations, Freemasons' Tavern, Victoria Dock-road, Custom House; Messrs. Venesta, Ltd., saw-mills shed at their premises in North Woolwich-road, Silvertown. A plan has been lodged by Messrs. Dunn & Watson for a factory in Cook's road, Stratford.

Wimbledon.—The following plans have been passed: Mr. H. W. Rickard, eight houses, Pepps-road; Mr. R. J. Thomson, fifty-two houses, Crompton-road. The following plans have been lodged:—Temporaries Billiard Hall, Ltd., billiard hall, Merton-road; Messrs. J. Burgess & Sons, corrugated iron church, Faraday-road; Messrs. Holloway Bros, hospital, Thurston-road.

Woolwich.—Electricity mains are to be extended at an estimated cost of 126l. A portion of the 15-in. pipe sewer in Eglington-road is to be relaid at an estimated cost of 280l. The following plans have been passed:— Messrs. Scoles & Raymond, the Presbytery, Basingstoke, church, High-street, Eltham; Mr. T. H. Hutchings, Hammerwood, Shooters Hill, six houses, Glenshiel-road, Eltham; Mr. J. J. Bassett, 121, Earlshall-road, Eltham, on behalf of Mr. A. C. Corbett, sixteen houses, Dun- break and Dunvegan roads, Eltham.

Wrexham.—Referring to our notice under this heading in our last issue (page 24), the name of the builder whose tender was accepted for alterations at the Town Hall should be Mr. F. W. Loasby, and not Lowesby, as was announced in error.

FOREIGN AND COLONIAL.

Openings for Concrete Machinery.

The American Consul in Johannesburg reports that concrete mixers are now quite essential to builders and contractors in South Africa. Practically all the machines in the Transvaal are of American manufacture, and the Consul says that, as unusual activity is likely to prevail in the building trade for the next few years, there is every probability that concrete mixers will find a ready sale. The hint is one that we hope will not be lost on British makers of such plant.

The American Consul at Dundee reports that machinery is rarely used for mixing concrete in Scotland, largely owing to the fact that the sale of concrete mixers has never been pushed there. Hence he recommends Scotland as a likely field for American enterprise. As the use of reinforced concrete is making rapid headway in North Britain, and various public works involving the employment of concrete on a large scale are now in contemplation, some of our readers may find it advantageous to strengthen their representation in Scotland.

Metal Partition Walls, Germany.

It appears from a report to his Government by the United States Consul-General at Berlin that most of the inner partition walls used in buildings in that city consist of a heavy iron wire screen, on either side of which are layers of coke-ash mortar. The walls are apt to get out of plumb, and will not hold nails satisfactorily, and as in making the mortar cat- hair, iron, and hemp refuse are used, it some- times disintegrates, causing the wall to crumble and sections to fall out. A good metal partition wall should therefore, says the Consul-General, find a market in Germany, provided that it was not too thick, and that the cost was not very much greater than that of the ordinary wall. Economy of space is looked for by the German builder. The authorities require that all outside and supporting walls shall have a thickness of at least 36 cms. (14.173 in.), and hence partition walls are generally limited in thickness to 10 cms. (3.937 in.), as they are not required to support

great weights. The coke-ash walls cost about 320 marks per square metre (about £s. 8s. 6d. per square yard), but builders would pay more for a wall of satisfactory construction. Prices should be quoted in marks per square metre l.o.b. German port.

Building Material, Austria-Hungary.

The following particulars of projected works in Austria-Hungary are extracted from the *Oesterreichischer Zentral-Anzeiger* (Vienna):—The city authorities of Budapest have decided to proceed with the erection of ten school buildings at a total cost of 6,180,000 kronen (257,500l.). The Budapest Spa authorities ("Heilbäderkommission") have accepted the plans for the erection of an hotel containing 100 rooms: the cost is estimated at 1,500,000 kronen (65,700l.), and work is to be commenced at once. The "Militär-Versicherungsgesell- schaft" has decided to commence operations in the autumn of 1913 for the erection of a palatial building in Budapest at the corner of Karlsering and Dohánygasse; the cost is assessed at 5,000,000 kronen (208,000l.).

Building Material, Switzerland.

The *Feuille Fédérale Suisse* of June 23 contains a decree opening in favour of the Federal Council credits amounting to 837,000 francs (33,480l.) for the purpose of enlarging the ordinance factory at Berne, and for its equip- ment with the requisite additional machinery.

PATENTS.

APPLICATIONS PUBLISHED.*

11,858 of 1910.—James Gordon: Flush-bolts.
14,287 of 1910.—Charles Leslie Newland: Water supply of flushing cisterns.
15,007 of 1910.—William Yates Lambert and Eugene Ernest Navone: Water-waste pro- cessors for water-closets, lavatories, and other like purposes.
16,244 of 1910.—William Yates Lambert and Eugene Ernest Navone: Fasteners for sliding window and like sashes.
16,691 of 1910.—William Richard Smart: Manufacture of bricks.
16,698 of 1910.—W. B. Hiaigh & Co., Ltd., and George John William Gruban: Wood- working machinery.
20,665 of 1910.—Otto Wimmer: Speed con- trolling device for motor-driven sawing machines.
30,035 of 1910.—Ernst Eberhard Hippe: Process for the manufacture of artificial stone.
23 of 1911.—Samuel Dunn: Connecting door- knobs or handles to and adjusting them on their spindles.
899 of 1911.—The Metal Jointing Company, Ltd., and Thomas Harden: Tools for cutting pipe-joints to form spigot and socket joints.
1,715 of 1911.—Otto Wilhelm: Apparatus or devices for climbing masts, poles, and the like.
2,518 of 1911.—J. & C. G. Bolinders Mechaniska Verkstads Aktiebolag and Adolf Julius Tenow: Sawing machines and the like.
3,804 of 1911.—James Johnson Fray: Dwelling-house, school, or other like building or structure.
3,945 of 1911.—George Hüsing: Safety rail- ing for windows adapted to be used as fire- escape.
4,229 of 1911.—Frederick Joseph Watkinson: Automatic window sash lock.
5,805 of 1911.—Murtaugh James Houghton: Extension pieces for firegrates.
8,100 of 1911.—Heinrich Gustav Hodermann: Construction of buildings for business purposes.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 13.—By JAMES ROGERS
Bradwell-on-Sea, Essex.—Peakes Farm and two cottages, 27 a. 1 r. 90 p. f. £1,705
By BOUTON & COOPER.
Kirby Grindley, Yorks.—Low Farm, 330 a. 3 r. f. 6,000
By DRAWBRIDGE & ANSELL.
Ripe, Sussex.—Little Lulham, 105 a. 2 r. 25 p. f. 1,750
Street, Sussex.—Malt House, 15 a. 0 r. 22 p. f. 800
By J. KITROW & SON.
North Peckham, Devon.—Farm, a mill hold- ings, etc., 47½ acres, f. (in 15th) 81,323
June 14.—By HENRY & PEARCE.
Great Ashfield, Suffolk.—Kiln Farm, 17½ a. 3 r. 1,290
By ROYCE.
Larkby, Leicester.—Agricultural land, 255 acres, f. 9,605
By WM. PEARCE & SON.
Upwouich, Devon.—Hare Farm, 67½ acres, f. 1,575
Lundbrooke Smithy and 13½ acres, f. 800
Pasture land, 17 acres, f. 1,550

RECENT SALES—continued on page 53.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xvi.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

JULY 31. — Lowestoft. — SCHOOL. — The Lowestoft Education Committee invite designs for an elementary school for 600 boys at Romanhill. Three premiums are offered: 20, 10, and 5 guineas. See advertisement in issue of June 16 for further particulars.

JULY 31. — Wellington. — NEW PARLIAMENT BUILDINGS. — Premiums of 1,000l., 500l., 300l., and 200l. are offered for the competitive designs. Particulars from the Minister of Public Works, Wellington, New Zealand.

JULY 31. — IDEAL COUNTRY HOUSE. — 100l. offered by the Daily Mail, Carmelite House, E.C. for designs for country house, to cost from 900l. to 1,100l. Mr. E. C. P. Monson, F.R.I.B.A., Mr. E. J. Sedgwick, F.R.I.B.A., and others, assessors.

AUGUST 8. — Egrement. — LAYING-OUT SCHEME. — Premiums of 40l. and 10l. are offered by the Egrement U.D.C. for lay-out scheme. Particulars from the Town Surveyor, Egrement.

AUGUST 15. — Berne. — MONUMENT. — Designs for the erection of a monument at Berne to celebrate the foundation of the International Telegraph Union. Conditions may be seen in the library of the Royal Institute of British Architects.

SEPTEMBER 12-25. — Athens. — COURT OF JUSTICE. — An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 160,000l. The *Official Gazette* may be seen at the Library of the R.I.B.A.

SEPTEMBER 16. — Manchester. — LIBRARY AND ART GALLERIES. — Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

OCTOBER 30. — Holland. — STAINED GLASS WINDOW. — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — Marylebone. — NEW MUNICIPAL BUILDINGS. — Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in this issue.

NOVEMBER 1. — City of St. Petersburg. — MOUNTMENT TO ALEXANDER II. — Particulars in our issue of August 13.

DECEMBER 29. — Glasgow. — DESIGN FOR A BRIDGE. — Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 500l. and 200l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 31, 1912. — Australia. — Designs for FEDERAL CAPITAL CITY. The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of July 7 for further particulars.

NO DATE. — Nottingham. — BAPTIST CHURCH AND PREMISES. — Limited to Nottingham architects. Particulars from Messrs. Rorke & Jackson, solicitors, King-street, Nottingham.

NO DATE. — Salford. — Extension of office accommodation on workhouse site at Eccles New-road. Premiums 200l. and 100l. Particulars from the Board of Guardians, Salford.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 15. — Kendal. — HOME. — Building a nurses' home at the Westmorland Consumption Sanatorium, Methop. Plans and specifications seen, and quantities, on deposit of 2l. from Mr. John Hutton, M.R.S.I., architect, Kendal.

JULY 15. — Paignton. — DRILL-HALL. — For erection of a drill-hall and offices. Plans and specifications seen, and quantities, on deposit of 5l. 5s. from Mr. F. A. Clark, architect, 83, Old Town street, Plymouth.

JULY 17. — Abercarn. — DWELLINGS. — Erection of ninety-six cottages at Cwmarn. Plans, specifications, etc., with Mr. J. Williams, Engineer and Surveyor to the Council. Deposit of 2l. 2s.

JULY 17. — Burnley. — POLICE-STATION. — Erection of a county police-station at Cliver. Plans seen, and quantities, on deposit of 2l. from Mr. Henry Lither, County Architect, 16, Ribblesdale-place, Preston.

JULY 17. — Southend. — CONVENIENCE. — Erection of a convenience, shelter, and store. Plans, specifications, etc., seen, and quantities, on deposit of 1l. 1s. from Mr. E. J. Elford, Borough Engineer.

JULY 17. — Treharvis. — ADDITIONS, ETC. — Alterations and additions to Ty Cook Farm. Plans and specifications with Mr. T. Edmund Rees, architect, Merthyr Tydfil.

JULY 17. — Treharvis. — SHED. — Erection of new shed premises. Plans and specification with Mr. T. Edmund Rees, architect, Merthyr Tydfil.

JULY 17. — Troed-y-rhiw. — COTTAGES, ETC. — Erection of five pairs of semi-detached cottage villas and twenty or more cottages. Plans and specifications with Mr. T. Edmund Rees, architect, Merthyr Tydfil.

JULY 17. York. — ROOM. — Erection of a new battery room at the Electric Lighting Station. Plans seen, and specifications and quantities, from Mr. F. W. Spurr, City Engineer, Guildhall, York, on deposit of 1l. 1s.

JULY 17. York. — YARDS, ADDITIONS, ETC. — Alterations and additions at Gargrave Council School. Plans seen, and specifications and quantities from Mr. B. Thornton, Education Offices, Town Hall, Gargrave.

JULY 18. — Bapc. — RECONSTRUCTION. — For reconstruction of buildings, etc., at the Central Council Schools. Plans seen and specification and quantities from Mr. W. H. Elce, Borough Engineer, Municipal Offices, Bapc. Deposit of 1l. 1s.

JULY 18. — Bognor. — COTTAGES. — Erection of twelve workmen's cottages. Specification at the office of the Council's Surveyor, 66, High street, Bognor. Mr. Henry Lawton Stafluth, Clerk to the Council, Council Offices, Bognor.

JULY 18. Boylestone. — COTTAGE. — Erection of a cottage and alterations to farm buildings at the Myers Farm, Quays, and drawings and specification with Mr. M. Hunter, Architect and Surveyor, Belper.

JULY 18. Gortwall. — SHED. — The Great Western Railway invite tenders for the erection of a goods shed at Fowey. Plans and specification seen, and quantities from the Engineer at Plymouth, North-road Station.

JULY 18. — Edinburgh. — COTTAGE. — Erection of a double cottage at Gladhouse Reservoir. Plans and specifications from Mr. A. E. Horsfield, architect, 88a, George-street, Edinburgh.

JULY 18. — Keynsham. — ALTERATIONS. — For alterations to the Keynsham Workhouse for office accommodation. Plans, specifications, etc., seen, and quantities from Mr. Henry M. Bennett, Surveyor to the Council, 36, Cornstreet, Bristol.

JULY 18. London. — WALL. — Pulling down the existing boundary retaining wall and erection of a new brick retaining wall and other works at the Crouch End School, Park-road, Crouch End. Specification and quantities from the Borough Engineer and Surveyor, Municipal Offices, Highgate, N.

JULY 18. — Swansea. — ROOMS, ETC. — Provision of a new entrance and exit and new cloakrooms at St. Thomas Council School. Mr. A. W. Halden, Clerk to the Committee, Education Offices, 9, Grove-place, Swansea. Deposit of 3l. 3s.

JULY 19. — Aberystwyth. — CLUB-HOUSE. — Erection of a club-house. Plans and specifications from Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

JULY 19. Ammanford. — HALL. — Erection of a Public Hall. Mr. D. Thomas, architect, 10, Quay-street, Ammanford. Deposit of 2l. 2s.

JULY 19. — Wells. — ADDITIONS. — For additions and alterations at the boys' school. Plans and specifications seen, and quantities, on deposit of 1l. 1s. from architect, Mr. A. J. Pictor, A.R.I.B.A., Bruton, Somerset.

JULY 19. Woolwich. — EXTENSION. — Office extension building work at the Workhouse, Plumstead. Drawings and information from the architects, Messrs. Church, Quick, & Whincoop, William-street, Woolwich. Deposit of 1l. 2s.

JULY 20. — Acton. — SCHOOL. — Erection of a new school. Drawings and specification seen, and quantities, on deposit of 2l. 2s. from Mr. F. A. Everett, Secretary, Education Department, Council Offices, Acton, W.

JULY 20. — Croydon. — CONCRETE WORK. — Constructing in concrete the walls and channels of a new contact bed. Plans and specification with the Surveyor, Mr. R. M. Chart, F.S.I., Council Offices, Katharine-street, Croydon. Deposit of 2l.

JULY 20. — Durham. — LODGE. — For building a porter's lodge at the isolation hospital, Norman's Riding. Plans and specification at the Council Offices, Blaydon.

JULY 21. — Brighton. — LAVATORY. — Construction of an underground lavatory. Specification

from the Borough Surveyor, Town Hall, Brighton.

JULY 21. — Ebbw Vale. — REBUILDING. — For rebuilding of business premises at Beaufort street, Brynmawr. Plans and specification with Mr. Hy. Waters, M.A., architect and surveyor, New-street-chambers, Ebbw Vale.

JULY 21. — Norfolk. — IMPROVEMENTS, ETC. — Alterations and improvements at Aslaby Council School. Mr. Thos. A. Cox, Secretary, Education Offices, Shirehall, Norwich. Deposit of 1l. 1s.

JULY 21. — Romford. — ALTERATIONS. — Erection of alterations at the Council offices. Specifications with the Surveyor to the Council Market-place, Romford.

JULY 21. — Piche-tringham. — FITTINGS. — For sanitary fittings and the cloakroom fittings Evelyn-street Council school. Specification from the architect, Mr. T. A. Buttery, Exchange buildings, Queen's Quay, Dublin.

JULY 21. — Yorkshire. — SCHOOL. — Erection of school at Lepton. Plans seen, and specifications with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 1l. 1s.

JULY 22. Bangor. — ROOM. — Erection of a schoolroom, classrooms, and vestries adjoining the school, Bangor. Plans and specifications and bill of quantities, on deposit of 1l. 1s. the architect, Mr. James Hunter, Beechwood, Lisburn.

JULY 22. — Windsor. — ALTERATIONS. — Alterations to the sanitary arrangements at the Union Workhouse at Old Windsor. Plan and specification with the Master of the Workhouse.

JULY 24. — Andover. — POLICE-STATION. — Alterations and new detached police quarters at Andover. Plans and specifications with the County Surveyor, The Castle, Winchester. Deposit of 2l. 2s.

JULY 24. — Pentrepeth. — SCHOOL. — For removing the two galleries and replacing floors at the infants' school. Specification with Mr. T. Walters, Clerk, 31, Quay-street, Carmarthen.

JULY 24. St-y-Myll. — COTTAGES. — Erection of two cottages. Plans and specifications at the offices of Mr. J. H. Allen, Deputy-Clerk of Glamorgan C.C. Office, Walsley-street, Cardiff.

*** JULY 24. — Westerham, Kent. — COTTAGE, &c. —** The Metropolitan Water Board invite tenders for a cottage, etc., at Westerham Hill, Kent. See advertisement in this issue for further particulars.

*** JULY 24. — Weymouth. — SCHOOL. —** The Joint Committee of the Councils of Weymouth and Melcombe Regis invite tenders for a second school. See advertisement in this issue for further particulars.

JULY 25. — Bexley Heath. — CLOCK TOWER. — Erection of a clock tower in Market-place. Plans and specification from Mr. W. M. Epp, architect, 8, Ethelton-road, Bexley Heath. Deposit of 1l. 1s.

JULY 25. — Ereter. — ALTERATIONS. — For alterations to No. 268, High-street. Quantities from Mr. R. M. Challice, architect and surveyor, 11, Bedford-circle, Exeter.

*** JULY 25. — Harold Wood. — NEW BUILDING, ETC. —** The West Ham B.C. invite tenders for new dormitory buildings and convalescent home at Harold Wood, Essex. See advertisement in this issue for further particulars.

JULY 25. — London. — TRAMWAYS. — The London C.C. invite tenders for the roadway and platforming required for the reconstruction on the conduit system of existing horse tramways in Green-lane, Mill-haymarket, and Southgate-road, and of the electric tramway in Seven Sisters-road, these works forming the subject of C.C. tenders for the construction for electric traction, mainly on the overhead trolley system of their authorised tramways from Brixton to Herne Hill. Also for the paving works of the street frontages on the above roads. Specifications, quantities, drawings, etc., from the City Engineer of the Council, Mr. Maurice Fitzgibbon, C.M.G., at the County Hall, Springfield-gate, S.W. Deposit of 5l. for each contract.

*** JULY 26. — Hamme-smith. — BOILER-HOUSE. —** The Hammersmith B.C. invite tenders for the erection of additions to boiler-house. See advertisement in this issue for further particulars.

JULY 26. — London. — SHELTERS, ETC. — Erection of a lavatory accommodation and shelters at Wormhill Park, Hammersmith. Plans seen, and specification from Mr. H. Mair, Borough Surveyor, Town Hall, Hammersmith, W.

*** JULY 26. — Amesbury. — POLICE-STATION. —** Erection of a county police-station. Plans and specification seen, and quantities, on deposit

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or names of those willing to submit tenders, are to be received.

July 13. — **London, W.** — **SUNDAY BUILDINGS.** — The St. Marylebone B.C. invite tenders for repairs, building, roofs, bins, etc., at the depot, Mond-street, Edgware-road. See advertisement in this issue for further particulars.

July 23. — **Cheshire.** — **SCHOOL.** — Erection of school for girls at West Kirby. Plans and specifications seen, and quantities, on deposit of 10s., from Mr. H. Bewick, County Architect, Chester.

July 28. — **Merton.** — **OFFICES.** — The Merton C.C. invite tenders for erection of additional offices. See advertisement in this issue for further particulars.

July 28. — **West Kirby.** — **SCHOOL.** — The Cheshire Education Committee invite tenders for erection of a new high school for girls at West Kirby. See advertisement in this issue for further particulars.

July 30. — **Trebooth.** — **ADDITIONS.** — Etc. Alterations and additions to Moriah Chapel. Plans and specifications seen, and quantities, on deposit of 10s., from Mr. M. Matthews, architect, 151, Brynelyf-row, Llandudno.

July 30. — **Sholing, Hampshire.** — **ALTERATIONS.** — The Southampton C.C. invite tenders for alterations to boys' and girls' school at Sholing. See advertisement in this issue for further particulars.

July 31. — **Beeston.** — **SCHOOL.** — Erection of a Catholic school. Plans and quantities from Mr. J. C. Marten, architect, 3, Cook-street, Leeds.

July 31. — **Crosland Moor.** — **HOUSE.** — Erection of dwelling-house. Quantities from Messrs. J. C. Marten, architect, and surveyors, New-street, Huddersfield.

July 31. — **Bridlington.** — **TRAMWAYS.** — Construction of Tramway No. 2, comprising the reconstruction of the permanent way, including re-bonding, wood block paving, and other works. Mr. Herbert H. Humphries, Engineer to the Council, Council House, Eridington, Birm.

July 31. — **Rebourn.** — **ADDITIONS.** — For providing a school. Plans and quantities from Mr. Geo. R. Smith, A.R.I.B.A., architect, 10, Colchester, South Shields.

July 31. — **Longwood.** — **SCHOOL.** — Erection of a school. Plans and quantities from Mr. B. M. Balm, architect, Longwood.

July 31. — **Merthyr Tydfil.** — **BOILER-HOUSE.** — Erection of a boiler-house, two fires, courts, and general improvement to yards, at the inter-estate school. Particulars from the Deputy-Surveyor, Town Hall, Merthyr Tydfil.

July 31. — **Normanton.** — **HEADQUARTERS.** — New quarters. Messrs. Simpson & Firth, architects and surveyors, Southgate, Wakefield.

July 31. — **Wills.** — **SCHOOL.** — Erection of a school at Durrington. Plans and specifications with the architect, Mr. G. L. W. Blount, High-street, Salisbury. Deposit of 10s.

ENGINEERING, IRON, AND STEEL.

July 18. — **London, N.** — **BOILER.** — Supply of a sectional boiler in place of existing boiler of heating apparatus at the North Harrington Works, Falkland-road, Hackney. Specifications from Mr. A. Allen, Secretary for Education, Stapleton Hall-road, Stroud Green, N.

July 20. — **Lisburn.** — **GASWORKS.** — Construction and erection of a retort stock and heating, etc. Specification and drawings and quantities, on deposit of 2s. 2s., from Messrs. T. Newbould & Son, 9, Abchurch-lane, Manchester.

July 22. — **Barby.** — **PUMPING STATION.** — Construction of a new pumping station. Plans and specification and quantities, on deposit of 5s., from the engineer, Mr. E. J. Gilcock, 10, Park-row, Leeds.

July 24. — **Westbury.** — **RESERVOIR.** — Erection of a pumping station and reservoir, supply of cast-iron pipes, etc. Plans and specifications seen, and quantities, on deposit of 5s., from Mr. W. H. Stanley, A.M.I.C.E., 10, Market House-chambers, Trowbridge, Engineer to the Council.

July 25. — **Geirionydd.** — **WATER SUPPLY.** — Construction of a reservoir and other works. Plans and specifications seen, and quantities, on deposit of 2s., from the Engineer, Mr. E. E. A.M.I.C.E., 8, Castle-street, Caerl.

July 25. — **Heacham.** — **WATER WORKS.** — Erection of a water tank and the laying main pipes and appendages. Drawings and specifications seen, and quantities, on deposit of 5s., from the engineer, Mr. E. H. Stevenson, 10, Parliament-street, Westminster.

July 25. — **New Nunstanton.** — **WATERWORKS.** — Construction of waterworks. Drawings and specifications seen, and quantities, on deposit of 5s., from the engineer, Mr. E. H. Stevenson, 10, Parliament-street, Westminster.

July 27. — **Ipwich.** — **WELL.** — For sinking a diameter cast-iron lined well. Plans, specifications, and schedule of prices, on deposit of 1s., from Mr. C. W. S. Oldham, Engineer, 11, Corporation Waterworks, Waterworks, Ipswich.

July 28. — **Brittas, Co. Dublin.** — **DISINFECTORS.** — Erection and leaving ready for use, at the Dublin Sanitary and Washington-Lyon pressure steam disinfectors. Chairman, Joint Hospital Board, Municipal Building, Dublin.

July 28. — **Eact Cowes.** — **BORE-TUBE.** — For

sinking a bore-tube at Waterworks. Specifications and particulars from the Engineer to the Council, Mr. Albert E. Barton, Iowa Hall, East Cowes. Deposit of 10s.

August 10. — **St. John, N.E.** — **HARBOUR WORKS.** — Construction of a breakwater, dry dock, and ship repairing plant. Specifications at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

August 15. — **Derbyshire.** — **RESERVOIRS.** — Construction of two brick-covered service reservoirs at Sparken Hill, Worksop, and Barborough. Drawings and specification seen, and quantities, on deposit of 10s. 10s., from the engineers, Messrs. G. & F. W. Hodson, Bank-chambers, Loughborough.

August 15. — **Stockholm, Sweden.** — **RAILWAY.** — Construction of a new line between Enstaberget and Aby. Drawings, specifications, etc., through the British Vice-Consulate, Nyköping, Sweden. Deposit of 30s.

FURNITURE, PAINTING, MATERIALS, etc.

July 15. — **Nottingham.** — **FITTINGS.** — For supplying new water-closet fittings and lavatory basins at schools, for the Education Committee. Plans seen, and specifications and quantities from the City Architect, Mr. F. B. Lewis, Guildhall, on deposit of 10s.

July 15. — **Nottingham.** — **PAINTING.** — Etc. — For cleaning and painting at the Council schools. Specifications, quantities, and forms of tender from Mr. F. B. Lewis, City Architect, Guildhall, on deposit of 10s.

July 17. — **Norwich.** — **PAINTING.** — For colouring, painting, whitewashing, etc. various schools. Specifications and quantities, on deposit of 5s., from Mr. Chas. J. Brown, Architect and Surveyor, Cathedral Offices, The Close, Norwich.

July 18. — **Derby.** — **PAINTING.** — For cleaning, painting, and decorating at the Public Offices, Heanor. Specifications with Mr. J. Holbrook, Surveyor, Public Offices, Heanor, Derby.

July 18. — **London.** — **PAINTING.** — Etc. — For painting, colouring, etc. interior and exterior of the Chapel End Schools, Walthamstow. Specification with Mr. H. Prosser, Architect to the Committee, Education Committee Offices, High-street, Walthamstow.

July 18. — **Portsmouth.** — **DECORATING.** — Re-decorating interior of blocks B and D at the Infectious Diseases Hospital, Milton. Specification seen, and form of tender from the Borough Engineer, Town Hall, Portsmouth.

July 18. — **Rochdale.** — **PAINTING.** — For painting at the Chamber-street conveniences. Particulars from the Borough Surveyor.

July 19. — **Lancs.** — **PAINTING.** — Etc. — Internal decoration and outside painting of the Great Harwood Western Council Schools. Specifications with Mr. W. Sagar, White House, Rishton.

July 20. — **Kirkburton.** — **PAINTING.** — Painting the isolation hospital. Particulars from Mr. G. W. Smith, Clerk to the Committee, 23, John William-street, Huddersfield.

July 21. — **Ashford.** — **PAINTING FLOORS.** — The Managers of the W. London District School invite tenders for planing floors of the dormitories and infirmaries wards. See advertisement in this issue for further particulars.

July 21. — **Poots Gray.** — **PAINTING.** — Etc. — The Kent Education Committee invite tenders for painting and repairs to Longlands Council School. Poots Gray. See advertisement in this issue for further particulars.

July 21. — **Great Yarmouth.** — **PAINTING.** — Etc. — For painting and alterations at the Council schools. Specifications from the Borough Surveyor, Town Hall, Great Yarmouth.

July 21. — **Lowestoft.** — **PAINTING.** — Etc. — For painting and repairs in various Council Schools. Specifications seen, and particulars from Mr. G. T. Knights, 44, Milton-road, Lowestoft.

July 22. — **Twickenham.** — **PAINTING.** — For cleaning, distemper, and painting at the Trafalgar Public Elementary Schools. Particulars from Mr. F. W. Pearce, Surveyor to the Council, Town Hall, Twickenham.

July 25. — **London, N.W.** — **PAINTING.** — Etc. — The Willesden D.C. invite tenders for cleaning and painting works at Public Offices and Education Offices, Dyne-road, Kilburn, N.W. See advertisement in this issue for further particulars.

July 25. — **London, W.C.** — **PAINTING.** — The Guardians of St. Giles-in-the-Fields and St. George, Bloomsbury, invite tenders for painting external ironwork of Workhouse in Endell-street, W.C.; also Guardians' Offices and Receiving Home for Children and Nurses' Home in Broad-street, W.C. See advertisement in this issue for further particulars.

July 28. — **Blackpool.** — **FURNITURE.** — The Blackpool B.C. invite tenders for furnishing the new Central Library and Art Gallery. See advertisement in this issue for further particulars.

July 28. — **Merton.** — **PAINTING.** — Etc. — The Merton U.D.C. invite tenders for painting and decorating offices. See advertisement in this issue for further particulars.

July 28. — **Wimborne.** — **FENCING.** — For the supply and erection of iron fencing and gates at the extension to Wimborne Cemetery. Specification and forms of tender from Mr. V. O. A. Munckton, A.M.I.C.E., Borough Offices, Wimborne.

July 29. — **London, S.E.** — **WIRE GUARDS.** — Etc. — The Metropolitan Asylums Board invite tenders for supplying and fixing wrought-iron tubings, wire and other guards, at Park Hospital for Children, Hither Green, Lewisham, S.E. See advertisement in this issue for further particulars.

August 1. — **Epsom Union.** — **PAINTING.** — VARNISHING, ETC. — The Epsom Guardians invite tenders for whitewashing, painting, varnishing, etc., at the Workhouse infirmary. See advertisement in this issue for further particulars.

* August 1. — **Isleworth.** — **PAINTING.** — Etc. — The Guardians of the Brentford Union invite tenders for repairs, cleaning, painting, etc., to infirmary, workhouse, offices, and schools at Isleworth, Middlesex. See advertisement in this issue for further particulars.

* August 2. — **London, N.E.** — **PAINTING.** — Etc. — The Guardians of St. Leonard, Shoreditch, invite tenders for painting, cleaning, and repairs to their branch school, Lower Clapton-road, N.E. See advertisement in this issue for further particulars.

* No Date. — **Wickford.** — **STREET LAMPS.** — The Wickford P.C. invite particulars of lamps for use in exposed country district. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

July 17. — **Blackburn.** — **STREETS.** — For making up streets. Plans and specifications seen and information from Mr. W. Stubbs, Borough Engineer, Municipal Offices, Blackburn.

July 17. — **Bristol.** — **SEWERS.** — Construction of brick and pipe sewers at Easton. Drawings seen and quantities on deposit of 2s., from Mr. T. H. Yabbicom, City Engineer, 63, Queen-square, Bristol.

July 17. — **Dundee.** — **PIPES.** — Supply of 500 6-in. cast-iron pipes. Specification from Mr. George Baxter, Engineer and Manager, Water Engineer's Office, 35, Commercial-street, Dundee.

July 17. — **Kendal.** — **WATER MAIN.** — Laying of a 6-in. water main along Low Fellside. Particulars at the Gas Office, Parkside-road. W. R. Wilson, engineer and manager.

July 17. — **Ladybank.** — **ROADS.** — For repair of roads. Specification at Hallie Sims's, Royal Hotel, Ladybank.

July 17. — **London.** — **PAVING.** — For paving works in Bishop's-road, Westbourne-grove, Shirland-road, and Edgware-road. Specification from the Borough Surveyor, Town Hall, Paddington, W.

July 17. — **London.** — **PAVING.** — Etc. — Making-up and paving part of Edgely-road, Clapham North. Specification and drawings seen and forms of tender from the Borough Engineer at the Office of the New Streets Department, No. 56, Easthill, Wandsworth, S.W. Deposit of 5s. 6d.

July 17. — **Spennymoor.** — **STREETS.** — For making-up streets. Plans, specifications, etc. seen and forms of tender from Mr. C. R. Spencer, Surveyor to the Council, Silver-street, Spennymoor.

July 17. — **Wedsbury.** — **STREETS.** — For street works, plan and specification seen, and forms of tender from Mr. E. Martin Scott, Borough Engineer and Surveyor, Town Hall, Wednesbury.

July 18. — **Brentford.** — **PLINTS.** — Supply of Kentish pit flints. Specification from Mr. J. W. Croxford, surveyor, at his office, Children House, Boston road, Brentford.

July 18. — **Brislington.** — **ROADS.** — For making-up roads. Plans, specifications, etc. from Mr. H. M. Bennett, Surveyor to the Council, 35, Corn-street, Bristol.

July 18. — **Crews.** — **SEWERAGE.** — Construction of sewage disposal works, etc. Plans, sections, and specifications seen, and information from Mr. E. Eaton Shore, Borough Surveyor, Earle-street, Crews.

July 18. — **Holmes, Yorks.** — **SEWER.** — Construction of a storm-water sewer and a sewer-pumping machinery and water main. Plans and specifications with Mr. E. B. Martin, Borough Engineer, Town Hall, Rotham.

July 19. — **Bonymaen.** — **PAVING.** — For paving a portion of the playground at the industrial school. Particulars from the Borough Estate Office, 3, Prospect-place, Swansea.

July 21. — **Brighton.** — **WOOD PAVING.** — For re-laying wood paving. Specification from the Borough Surveyor, Town Hall, Brighton.

July 22. — **Denny and Dalpaise.** — **SEWERAGE.** — Construction of sewers. Plans and drawings with the Burgh Surveyor. Deposit of 10s.

July 22. — **Glamorgan.** — **ROAD.** — For construction of a new road at Holly Bush. Plans and specification seen, and form of tender from the Council's Surveyor, Mr. J. H. Jones, Blackwood, Mon. Deposit of 10s. 10s.

July 24. — **Feltham.** — **GRANITE.** — Supply of granite. Forms of tender from the Surveyor, Mr. G. Stevens, Town Hall-chambers, Feltham.

July 24. — **Keith.** — **SEWERAGE.** — Sewage carrier extension. Messrs. Jenkins & Marr, engineers, 16, Bridge-street, Aberdeen.

July 24. — **London.** — **SEWERAGE.** — Construction of sewers and surface-water sewers, with manholes, etc., and storm-water culvert, at North-hall, Highgate. Particulars from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, Highgate.

July 25. — **Braintree.** — **GRANITE.** — Supply and delivery of broken granite. Forms of tender from Mr. H. H. Nankivell, Surveyor, Vestry Hall, Braintree.

July 25. — **Baling.** — **ROADS.** — For the making-up of roads. Drawings and specifications seen, and quantities from Mr. Charles Jones, M.Inst.C.E., Borough Engineer, Town Hall, Baling, W., on deposit of 10s. 6d.

July 25. — **Woodford.** — **GRANITE.** — Supply of broken granite. Particulars from Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green, Essex.

* July 26. — **Hammersmith.** — **LAVATORY AND SHELTERS.** — The Hammersmith B.C. invite tenders for erection of lavatory accommodation and shelters at Wormholt Park. See advertisement in this issue for further particulars.

July 26. — **Ludlow.** — **WATER SUPPLY.** — Laying steel gravitation main. Plans and specification with the Borough Surveyor.

July 26. — **Boydland, Yorks.** — **GRANITE.** — Supply of granite. Mr. W. Whitehead, Surveyor, Council Offices, Elland-road, Rippenden.

ROADS, &c.—continued.

The date given at the commencement of each paragraph is the latest date on the tender, or the names of those willing to submit tenders, may be sent in.

JULY 28.—**Newmarket.**—GRANITE.—Supply of broken granite and slag. Forms of tender from Mr. S. J. Ennion, Clerk, Deva-chambers, Newmarket.

JULY 29. **East Dereham.**—GRANITE.—Supply of broken granite. Forms of tender from the Surveyor, Mr. F. L. Burch, Theatre-street, East Dereham.

JULY 31.—**Penge.** STREETS.—Private street works. Plans and specification seen, and quantities, on deposit of 2l. from Mr. Herbert William Longdin, Surveyor, Town Hall, Anerley, S.E. Avenue 1.—**Marlyate, Herts.**—SEWAGE.—For sewerage and sewage disposal works. Plans and

specifications seen, and quantities, on deposit of 2l. 2s. from the engineers, Messrs. Elliott Brown, Burton-buildings, Parliament-street, Nottingham.

SEWERAGE 3.—**Surbiton.**—SEWAGE. For sewerage and sewage disposal works. Drawings and specification, quantities, and form of tender to the Surveyor to the Council, Mr. Henry Mather, Council Offices, Ewell-road. Deposit 10l. 10s.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*THE LEGGATTS' ESTATE, POTTERS BAR.—At the Mart	John D. Wood & Co.	July 18
*MACHINERY, PLANT, &c.—At Bath Buildings, Montpelier-street, Bristol	Nichols, Young, Hunt, Alder, & Co.	July 20
*FREEHOLD BUILDING PLOTS, CHISWICK.—At the Mart	Devereux, Wood, & Co.	July 20
*CORONATION ANNEXE, WESTMINSTER ABBEY	Horne & Co.	July 24
*WOOD-WORKING MACHINERY.—On the Premises	J. T. Skelding & Holland	July 28
*SURPLUS FREEHOLD LANDS, HAMMERSMITH.—At the Mart	Edwin Fox, Bonfield, Burnetts, & Puddley	July 30
*FREEHOLD GROUND AND FREEHOLD LAND, SOUTH-EAST, SEA	Emmott, Ellis, Egerton, Branch, Galsworthy, & Co.	July 27
*FREEHOLD LAND, ESSEX.—At the Institute, Southend-on-Sea	T. W. Olin, jun.	July 29
*FREEHOLD BUILDING SITE, SOUTHWARK.—At the Mart	F. W. Field.	July 31
*FREEHOLD SITE, KENSINGTON.—At the Mart	S. Walker & Son	Aug. 1

RECENT SALES.—Continued from page 53.

By WALTER PEE.	20, Mansion House-st., f., y.r. 24l.	£400
Yarkhill, Hereford.—Castle Estate, 128 a. 1 r. 21 p. f.	1 and 2, Edwin-cottages, f., w.r. 37l. 14s.	250
By E. W. FULLER, MOON, & FULLER.	5, 7, and 9, Dalings-rd., u.t. 34 yrs. g.r. 7l. 10s. w.r. 78l.	380
Epsom, Surrey.—Burgl Heath-rd., The Chalet, and 2 r. 15 p. f.	Fulham.—39 and 41, Dymock-st., u.t. 67 yrs. g.r. 8l. w.r. 68l. 18s.	330
By WAINWRIGHTS & HEARD.	Addingham, Cambrid.—Farm, 221 a. 3 r. 23 p. f. and c.	2,750
Stoke Frister, Somerset.—Stileway Farm, 99 a. 1 r. 4 p. f.	By WOODS & CO.	
Pasture land, 9 a. 0 r. 32 p. f.	Pattishall, Northants.—Freehold farm, 99 a. 0 r. 15 p.	850
Templecombe, Somerset.—Manor Farm, 118 a. 8 r. 39 p. f.	By MADDOX, MILES, & MADDOX.	
Orchard land, 1 a. 2 r. 38 p. f.	Rollsby, Norfolk.—Rollsby Hall Estate, 1,082 acres.	22,440
Pasture land, 31 a. 2 r. 15 p. f.	July 5.—By BAYNE, PAXE & LEPPE.	
Twelve building sites, f.	Islington.—320 and 322, Essex-rd. (s.), f. p. and y.r. 50l.	1,410
Pasture land, 55 a. 0 r. 27 p. f.	By MAPLE & CO.	
By HEMBERT & PLANT.	Hamstead.—32, Parliament-hill, u.t. 66 yrs. g.r. 8l. y.r. 75l.	510
Brigwater, Somerset.—Agricultural estate, 454 acres, f.	By RETHOLDS & EASON.	
June 15.—By JOHN D. WOOD & CO.	Hoxton.—Fulton-st., f.g. rents 11l. reversion in 6 yrs.	235
Leamaster, Hereford.—Outlying portions of Hampton Court Estate, 1,833 acres, f.	Stoke Newington.—155, Southgate-rd., u.t. 20 yrs. g.r. 3s. 4d. y.r. 45s.	135
By ALFRED J. BRETHERTON.	Constructions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; a.r. for annuity; s. for street; r. for road; sq. for square; pl. for place; t. for terrace; c. for crescent; g. for garden; g.d. for garden; y. for yard; g. for grove; h. for house; p. for public-house; o. for office; s. for shop; et. for court.	
Cranbrook, Kent.—Clay Hill Farm, 3 a. 1 r. 22 p. f.	By DEYON & LESTER.	
Eafield, 31 and 112, Etcbridge-rd., f., w.r. 68l. 6s.	By HART & SONS.	
June 16.—By BIDWELL & SOXS.	E'f. Cambs.—Small holdings, etc., 103 acres, f. and c.	
E'f. Cambs.—Small holdings, etc., 103 acres, f. and c.	By WINTERBOS & SONS.	
By WINTERBOS & SONS.	Curborough, Staffs.—Curborough House Farm, 135 acres, f.	4,200
Curborough, Staffs.—Curborough House Farm, 135 acres, f.	June 30.—By MADDOX, MILES, & MADDOX.	
Great Yarmouth, Norfolk.—31, Howard-st. South (s.), f.	Lee.—51 & 53, Brightfield-rd., u.t. 73 yrs. g.r. 7l. 15s. w.r. 43l. 10s.	210
June 30.—By DYER, SON, & HILTON.	By HAMPTON & SONS.	
Lee.—51 & 53, Brightfield-rd., u.t. 73 yrs. g.r. 7l. 15s. w.r. 43l. 10s.	Westbury, Wilts.—Outlying portions of the Leighton Estate, 1,932 acres, f.	50,102
By HAMPTON & SONS.	July 1.—By HART & SONS.	
Westbury, Wilts.—Outlying portions of the Leighton Estate, 1,932 acres, f.	Elastow, Beds.—Small holding, 15 a. 3 r. 34 p. f.	980
July 1.—By HART & SONS.	July 3.—By BEARD & SON.	
Elastow, Beds.—Small holding, 15 a. 3 r. 34 p. f.	Fulham.—20, Mulgrave-rd., u.t. 65 yrs. g.r. 6l. w.r. 50l. 14s.	140
July 3.—By BEARD & SON.	Paddington.—5, Porteus rd. u.t. 27 yrs. g.r. 9l. e.r. 50l.	295
Fulham.—20, Mulgrave-rd., u.t. 65 yrs. g.r. 6l. w.r. 50l. 14s.	60, Tavistock-rd., u.t. 52 yrs. g.r. 10l. e.r. 50l.	375
Paddington.—5, Porteus rd. u.t. 27 yrs. g.r. 9l. e.r. 50l.	By R. W. FULLER, MOON, & FULLER.	
60, Tavistock-rd., u.t. 52 yrs. g.r. 10l. e.r. 50l.	Thornton Heath.—1 to 11 (odd), 15, 17, 19, 26 to 32 (even), Windsor-rd., 145 to 167 (odd), Parkmore-rd., 62 to 68 (even), Totton-rd., 1, w.r. 638l. 12s.	4,850
By R. W. FULLER, MOON, & FULLER.	Norwood, Station rd., f.g. 12l. reversion in 71 yrs.	300
Thornton Heath.—1 to 11 (odd), 15, 17, 19, 26 to 32 (even), Windsor-rd., 145 to 167 (odd), Parkmore-rd., 62 to 68 (even), Totton-rd., 1, w.r. 638l. 12s.	Gusmore-rd., f.g. 12l. reversion in 92 yrs.	280
Norwood, Station rd., f.g. 12l. reversion in 71 yrs.	Thornton Heath.—Langdale-rd., f.g. rents 13s. reversion in 94 yrs.	345
Gusmore-rd., f.g. 12l. reversion in 92 yrs.	Croydon, Darnley-rd., f.g. rents 56l. 3s. 6d. reversion in 70 yrs.	1,300
Thornton Heath.—Langdale-rd., f.g. rents 13s. reversion in 94 yrs.	Streton-rd., f.g. 9l. reversion in 83 yrs.	135
Croydon, Darnley-rd., f.g. rents 56l. 3s. 6d. reversion in 70 yrs.	By JONES, LANG, & CO.	
Streton-rd., f.g. 9l. reversion in 83 yrs.	Houndsditch.—No. 76 (s.), Corporation lease, g.r. 6l. 11s. 3d., y.r. 24l.	4,000
By JONES, LANG, & CO.	City.—188, Upper Thames-st., profit rental of 68l. for 71 yrs.	200
Houndsditch.—No. 76 (s.), Corporation lease, g.r. 6l. 11s. 3d., y.r. 24l.	35, Knightbridge-rd., u.t. 33 yrs. g.r. 180l. y.r. 255l.	3,500
City.—188, Upper Thames-st., profit rental of 68l. for 71 yrs.	By KEMBLEY.	
35, Knightbridge-rd., u.t. 33 yrs. g.r. 180l. y.r. 255l.	West Grinstead, Sussex.—Enclosure of land, 27 acres, f.	185
By KEMBLEY.	Thornton Heath.—1 to 11 (odd), 15, 17, 19, 26 to 32 (even), Windsor-rd., 145 to 167 (odd), Parkmore-rd., 62 to 68 (even), Totton-rd., 1, w.r. 638l. 12s.	4,850
West Grinstead, Sussex.—Enclosure of land, 27 acres, f.	Woodford, 1 and 2, Ashford-villas, f., w.r. 49l. 8s.	320
Thornton Heath.—1 to 11 (odd), 15, 17, 19, 26 to 32 (even), Windsor-rd., 145 to 167 (odd), Parkmore-rd., 62 to 68 (even), Totton-rd., 1, w.r. 638l. 12s.	By ALEX. MOSSMAN.	
Woodford, 1 and 2, Ashford-villas, f., w.r. 49l. 8s.	Baywater, 104, Tibbott-rd., 155, Burlington-news, n. 45 yrs. g.r. 14l. 18s. y.r. 120l.	250
By ALEX. MOSSMAN.	July 4.—By HAWKINS & SON.	
Baywater, 104, Tibbott-rd., 155, Burlington-news, n. 45 yrs. g.r. 14l. 18s. y.r. 120l.	Marylebone.—37 to 40, Benda-st. (s.), u.t. 81 yrs. g.r. 10l. 18s. y.r. 185l.	400
July 4.—By HAWKINS & SON.	By ORRILL, MARKS, & BALEY.	
Marylebone.—37 to 40, Benda-st. (s.), u.t. 81 yrs. g.r. 10l. 18s. y.r. 185l.	Kensington.—High-st., Civet Cat, p.h. c.y.r. 150l.	3,120
By ORRILL, MARKS, & BALEY.	By J. C. PLATE.	
Kensington.—High-st., Civet Cat, p.h. c.y.r. 150l.	Hammer-smith, 5, Mull-rd., u.t. 54 yrs. g.r. 7l. e.r. 40l.	355
By J. C. PLATE.	30, Overstone-rd., u.t. 54 yrs. g.r. 6l. p. 32l.	200
Hammer-smith, 5, Mull-rd., u.t. 54 yrs. g.r. 7l. e.r. 40l.	32, Bridge-rd., u.t. 25 yrs. g.r. 5l. 18s. 4d. e.r. 38l.	170

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied direct from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by Parcel Post in London and the suburbs.

To Canada, post-free, 21s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Japan, etc., 25s. per annum.

Remittances payable to J. MORGAN should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

Our aim in this list is to give, as far as possible, the correct prices of materials, not necessarily the lowest prices. Quality and quantity obviously affect prices—each of which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIAL.

*Our aim in this list is to give, as far as possible, the correct prices of materials, not necessarily the lowest prices. Quality and quantity obviously affect prices—each of which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.

Best Stocks. Ends 1 1/2

Picked Stocks for Facings 2 1/2

Per 1000, Delivered at Railway Depot.

Flettons 1 1/2 Double Headers 13 1/2

Best Fareham Ends One Side and two Ends 17 1/2

Best Red Pressed Reunion Facing 5 0 One End 18 1/2

Best Blue Pressed Staffordshire 3 15 0 Best Dipped Salt 10 1/2

Do. Bullnose 4 0 Glaz. Str. tchrs 15 17 1/2

Best Stourbridge Fire Bricks 3 14 0 Quoins, Bullnose, and Glazed Bricks 14 1/2

Best White and Glazed Bricks 14 1/2 D'ble Stretchers 16 1/2

Stretchers 10 17 6 One Side and two Ends 17 1/2

Quoins, Bullnose, and Glazed Bricks 14 1/2 D'ble Stretchers 16 1/2

Second Quality White and Dipped Salt Glazed, per 1000 less than best.

Thames and Pit Sand 6 9 per yard, delivered

Thames Ballast 5 3 "

Best Portland Cement 29 per ton, delivered

Best Ground Blue Lime 19 0 "

NOTE.—The cement or lime is exclusive of ordinary charges for sacks.

Grey Stone Lime 11s. 6d. per yard, delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway

STONE.

Per Ft. Cube.

Bath Stone—delivered on road wagons, 1

Paddington Depot 1

Do. do. delivered on road wagons, Nine Elms Depot 1

Portland Stone (30 ft. average)—

Brown Whitbed, delivered on road wagons, 2

Paddington Depot, Nine Elms Depot, or Pimlico Wharf 2

White Bashed, delivered on road wagons 2

Paddington Depot, Nine Elms Depot, or Pimlico Wharf 2

Per Ft. Cube, delivered at Railway Depot.

Ancestor in blocks, 1 10 Closeburn Red

Beer in blocks 1 6 Freestone 2

Greenishall in blocks 1 10 Bed Mansfield Free- 2

Darley Dale in Stone 2

blocks 2 4 Talcott & Greeney 1

Red Corehill in Stone 1

blocks 2 3

York Stone—Robin Hood Quality.

Per Ft. Cube, Delivered at Railway Depot.

Scrapped random blocks 3

Per Ft. Super, Delivered at Railway Depot.

6 in. sawn two sides landing to sizes (under 40 ft. super) 2

6 in. rubbed two sides ditto, ditto 2

3 in. sawn two sides slabs (random sizes) 2

2 in. to 2 1/2 in. sawn one side slabs (random sizes) 1

1 1/2 in. to 2 in. ditto, ditto 0

HARD YORK.

Per Ft. Cube, Delivered at Railway Depot.

Scrapped random blocks 3

Per Ft. Super, Delivered at Railway Depot.

6 in. sawn two sides landing to sizes (under 40 ft. super) 2

6 in. rubbed two sides ditto, ditto 2

3 in. sawn two sides slabs (random sizes) 2

2 in. to 2 1/2 in. sawn one side slabs (random sizes) 1

1 1/2 in. to 2 in. self-faced random flags 0

PUBLISHER'S NOTICES.

Met. Tel., 812 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME C (January to June, 1911) is given as a supplement with July 14, 1911, week's issue.

CLOTH CASES for Binding: the Numbers are now ready, price 2s. 6d. each.

READING CASES (with, with Strips, 9d. each).

THE HUNDRED VOLUMES of "THE BUILDER" (bound), price Twelve Shillings and Sixpence, will be ready in the autumn.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROCEEDINGS OF PUBLIC COMPANIES, SALES BY TENDER, LEASES AND AGREEMENTS, &c., &c.

Six lines or under 10s. 6d.

Each additional line 1s. 6d.

SITUATIONS VACANT, PARTNERSHIPS, APPOINTMENTS, SHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under 4s. 6d.

Each additional line about ten words 1s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (single landed Labour only).

Four lines (about thirty words) or under 2s. 6d.

Each additional line about ten words 1s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*Stamps must not be sent; but all sums should be remitted by Postal Order to J. MORGAN, Ltd., addressed to the Publisher of "THE BUILDER," 4, Catherine-street, W.C.

Advertisements for the current week's issue are received up to ONE P.M. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be sent by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS OR ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have Replies addressed to the Office, 4, Catherine-street, Strand, W.C., free of charge.

Letters sent together with sufficient stamps to cover the postage. Unsent stamps are returned to advertisers the week after publication.

*If The Reply Boxes are not intended for trade lists, circulars, and the like, should these be received, they cannot (if intended) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN AND COLONIAL CIRCULATION, is issued every week.

READING CASES { By post (carefully packed), 1s.

SLATES.

Per 1000 of 1200 at Railway Depôt.			
£ s. d.	In. In.	£ s. d.	
Best blue	20x10 best	15	7 6
1st quality	20x12 ditto	15	7 6
2nd quality	18x10 ditto	13	5 0
3rd quality	18x8 ditto	10	5 0
4th quality	18x6 ditto	11	2 6
5th quality	18x4 ditto	12	6
6th quality	18x3 ditto	6	12 6

TILES.

At Railway Depôt.			
£ s. d.	Do.	£ s. d.	
Plain red roof	1000	32	8
1st quality	1000	32	8
2nd quality	1000	32	8
3rd quality	1000	32	8
4th quality	1000	32	8
5th quality	1000	32	8
6th quality	1000	32	8

WOOD.

BUILDING WOOD.		At per standard.	
£ s. d.	At per standard.	£ s. d.	
Best 3 in. by 11 in. and 4 in.	14 0 0	14 0 0	
Best 3 in. by 9 in. and 4 in.	14 0 0	14 0 0	
Best 3 in. by 7 in. and 4 in.	11 0 0	14 0 0	
Best 3 in. by 5 in. and 4 in.	11 0 0	14 0 0	
Best 3 in. by 3 in. and 4 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 4 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 3 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 2 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/16 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/32 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/64 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/128 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/256 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/512 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1024 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2048 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4096 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8192 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/16384 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/32768 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/65536 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/131072 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/262144 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/524288 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1048576 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2097152 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4194304 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8388608 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/16777216 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/33554432 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/67108864 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/134217728 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/268435456 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/536870912 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1073741824 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2147483648 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4294967296 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8589934592 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/17179869184 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/34359738368 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/68719476736 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/137438953472 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/274877906944 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/549755813888 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1099511627776 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2199023255552 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4398046511104 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8796093022208 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/17592186044416 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/35184372088832 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/70368744177664 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/140737488355328 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/281474976710656 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/562949953421312 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1125899906842624 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2251799813685248 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4503599627370496 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9007199254740992 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/18014398509481984 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/36028797018963968 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/72057594037927936 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/144115188075855872 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/288230376151711744 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/576460752303423488 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1152921504606847936 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2305843009213695872 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4611686018427391744 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9223372036854783488 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/18446744073709566976 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/36893488147419133952 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/73786976294838267904 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/147573952589676535808 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/295147905179353071616 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/590295810358706143232 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1180591620717412286464 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2361183241434824572928 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4722366482869649145856 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9444732965739298291712 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/18889465931478596583424 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/37778931862957193166848 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/75557863725914386333696 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/151115727451828772667392 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/302231454903657545334784 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/604462909807315090669568 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1208925819614630181339136 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2417851639229260362678272 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4835703278458520725356544 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9671406556917041450713088 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/19342813113834082901426176 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/38685626227668165802852352 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/77371252455336331605704704 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/154742504910672663111409408 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/309485009821345326222818816 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/618970019642690652445637312 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1237940039285381304891274624 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2475880078570762609782549248 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4951760157141525219565098496 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9903520314283050439130197992 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/19807040628566100782660395984 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/39614081257132201565332791968 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/79228162514264403130665583936 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/158456325028528806261331678784 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/316912650057057612522663357568 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/633825300114115225045326715136 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1267650600228230450090653430272 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2535301200456460900181306860544 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/50706024009129218003626137301088 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/101412048018258436007252266021776 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/202824096036516872014504532043552 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/405648192073033744029009064087104 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/811296384146067488058018128174208 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1622592768292134960116036256348416 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/3245185536584269920232072512696832 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/6490371073168539840464145253393664 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1298074214337077968092829050687328 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2596148428674155936185658101374656 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/5192296857348311872371316202749312 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/103845937149662237440761218716131328896 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2076918742993244748948486491099728 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4153837485986489497897972982199456 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8307674971972978995795945964398912 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/16615349943945957991591191187977824 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/33230699887891915983182373575955648 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/66461399775783831966364747151911296 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/13292279955156766393272948430222592 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/26584559910313532786545896860445184 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/53169119820627065573091793720890368 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/106338239641254131146183587441787376 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/212676479282508262292367168883574752 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/425352958565016524584734337767149504 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/850705917130033049168948675534299008 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1701411834260066083377973510685988016 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/3402823668520132166755947021371976032 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/6805647337040264333511894042743952064 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/13611294674080528667023788084879104128 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/27222589348161057334047576169758208256 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/54445178696322114668095152339516416512 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/108890357392644229360190304679032832224 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/217780714785288458720380609358065664448 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/435561429570576917440761218716131328896 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/871122859141153834881522437432262657792 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1742245718282277697763044874864525315584 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/3484491436564555395526089749729050711168 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/696898287312911079105217949945800142336 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/139379657462582215821043999991600284672 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/27875931492516443164208799998200569344 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/55751862985032886328417599996401138688 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1115037259700657726568351999928022773776 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2230074519401315453136703999856045547552 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4460149038802630906273407999712091111104 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/8920298077605261812546815999424182222208 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1784059615521052362509371999848244444448 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/356811923104210472501874399969648888896 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/713623846208420945003748799939297777792 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1427247692416841890007497599785955555552 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2854495384833683780014995199571911111104 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/5708990769667367560029990399142222222208 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1141798153933473512005998078224444444448 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2283596307866947024001197616448888888896 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/4567192615733894048002395232897777777792 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/9134385231467788096004790465795555555552 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/1826877036295577619200958091422222222208 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/365375407259115523840191618284444444448 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/730750814518231047680383236568888888896 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/146150162903646209536076647313777777792 in.	11 0 0	14 0 0	
Best 3 in. by 1 in. and 1/2923003258072924190721532946275555555552 in.	11 0 0	14 0 0	

HEREFORD—For restoration of the tower of Ross Church. Messrs. Nicholson & Hartree, architects, Old-street, Hereford—
Blackburn, Star-
ring, & Co., Ltd. £817 12 6
G. & W. Edwards 585 0 0
W. P. Lewis &
Co. 643 0 0

V. O. Morris £586 0 0
C. C. Gold & Co.,
39, The Broadway,
Stratford,
London 528 0 0

KINGSTOWN—For erection of the Carnegie Library. Messrs. O'Callaghan & Webb, architects, 31, South Frederick street, Dublin. Quantities by Mr. Samuel H. Bolton—
J. Plunkett £4,817 2 6
J. Beckett 4,800 0 0
H. & J. Martin Ltd. 4,289 0 0
G. Squire & Co. 4,255 18 11
Collen Bros. 4,270 0 0
Crampton 4,019 0 0
J. & W. Stewart 3,985 0 0

Alex. Hull & Co. £3,949 0 0
J. & R. Thompson 3,892 0 0
D. J. Davling 3,879 0 0
H. Pemberton & Sons 3,793 0 0
Wesfer 3,737 5 8
J. & P. Good, Ltd., Dublin 3,690 0 0

LLANDRINDOD. For pair of semi-detached villas, for Mr. Edwin Holt. Messrs. Alfred Swash & Son, architects and surveyors, Newport, Mon., and Llandrindod. Quantities by the architects—
J. G. Lloyd, Llandrindod* £1,550

LIANWYTYD WELLS. For semi-detached houses, for Mr. Daniel Jones. Messrs. Alfred Swash & Son, architects, Llandrindod.—
N. Evans, Llanwtydy Wells* £1,017

LONDON. For the supply of four car trawlers for use at Streatham, Camberwell, and Hammersmith carsheds, for the London County Council—

Storbert & Pitt, Ltd. £3,522
Heenan & Froude, Ltd. 2,962
S. H. Heywood & Co., Ltd. 2,780
S. S. Whitley & Co. 2,768
Cowans, Sheldon, & Co., Ltd. 2,592
Hurst, Nelson, & Co., Ltd. 2,525
Dick, Kerr, & Co., Ltd. 2,452
Brush Electrical Engineering Co., Ltd., Loughborough* 2,297

[The estimate of the Chief Officer of Tramways comparable with tenders is £2,900.]

LONDON—For painting work at Westminster, Baywater, Notting Hill, South Audley street (street), Chelsea, Fulham, Fulham (sub.), Kensington, Knightsbridge, North Kensington, Shepherd's Bush, Manchester-square, Edgware-road, Hammersmith, and Brompton fire stations, for the London County Council—
F. G. Minter £490
Loke & Co., Trafalgar-square, Chelsea, S.W.* 159

[The Architect's estimate, comparable with the tenders was £228 9s.]

LONDON—For painting external wood and iron work at New-cross, Old Kent-road, Kennington, Peckham road, Tooley street, and Foxley-road fire-stations, and the chief station of the Fire Brigade, for the London County Council—

F. & H. P. Higgs £230 10
G. Parker & Sons 207 0
Higgs & Hill, Ltd., Crown Works, South Lambeth, S.W.* 203 15

[The Architect's estimate comparable with the tenders was £184 3s. 6d.]

LONDON—For painting work at Charlton, Eltham, North Woolwich, Plumstead, Lee green, East Greenwich, Rushley-green, Lewisham, and Shooter's Hill fire-stations, for the London County Council—

H. Groves £177 10 0
W. Bailey 132 10 0
J. S. Fenn 120 0 0
E. Proctor & Sons, High-street, Plumstead* 108 16 10

[The Architect's estimate comparable with the tenders was £147 6s. 11d.]

LONDON—For painting work at Battersea, Battersea (sub.), Battersea (river), Clapham, Vauxhall, Wandsworth, and Northcote road fire-stations, for the London County Council—

Maxwell Bros., Ltd. £189 0 0
J. & C. Bowyer, Ltd. 174 0 0
W. Read 164 12 0
E. Triggs, 92, The Chase, Clapham, S.W.* 140 6 2

[The Architect's estimate comparable with the tenders was £202 5s. 7d.]

LONDON—For painting work at Deptford, Greenwich, Epsom's Wharf, Cherry Garden-street, Rotherhithe, and Spa-road (street) fire-stations, for the London County Council—

E. Mills £214 12 0
H. L. Holloway 208 0 0
F. & T. Thorne 199 0 0

E. Proctor & Sons, High-street, Plumstead* 165 18 6

[The Architect's estimate comparable with the tenders was £219 15s. 9d.]

LONDON—For painting external wood and iron-work at Whitefriars, Clerkenwell, Scotland-yard, Waterloo-road, and Holborn fire-stations, for the London County Council—

Asby & Horner £242 5
J. Grover & Son, Wilton Works, New North-road, N.* 211 15

[The Architect's estimate comparable with the tenders was £226 14s. 1d.]

LONDON. For painting work at Great Marlborough-street, Kentish Town (11), Highgate-road, Holloway, Hornsey-rise, Islington, Hampstead, Hampstead (Holly-hill), Camden Town, St. John's Wood, West Hampstead, Euston, and Caledonian-road fire stations, for the London County Council—

Thompson & Beveridge £136 10 0
Marchant & Hirst 123 16 0
Stevens & Sons, 33, Crouch-hill, N.* 116 18 6

[The Architect's estimate, comparable with the tenders, was £139 2s. 9d.]

LONDON. For painting work at the Streatham, Sydenham, Tooting, West Norwood, Brixton, and Harnes-hill fire-stations, for the London County Council—

W. & C. Brown £74 0
W. Akers & Co., Ltd. 71 17
J. Garrett & Son 70 0

W. Johnson & Co., Ltd., Wandsworth-common, S.W.* 58 2

[The Architect's estimate, comparable with the tenders, was £75 11s. 10d.]

LONDON. For painting the wood and iron-work at the following fire stations for the London County Council: Hackney, Poplar, Shoreditch, Wapping, Whitechapel, Homerton, Stoke Newington, Bishopsgate, Millwall, Shadwell, Burdett-road, and Bethnal-green fire-stations—

Vigor & Co. £36 7 6
T. Bevevor, Savoy-mansions, Savoy-street, Strand, W.C.* 32 4 2

[The Architect's estimate comparable with the tenders was £39 2s. 10d. In each case the lowest tender has been accepted. The total amount of accepted tenders is £1,326 16s. 2d., or £226 18s. less than the total of the Architect's estimates (£1,453 12s. 3d.).]

LONDON. For the erection of a new police station at Plaxton. Mr. J. Dixon Butler, F.R.I.B.A., Architect, Surveyor to the Metropolitan Police District, New Scotland yard, S.W. Quantities by Messrs. Tinsford, Son, & Chidey, 8, Adelphi-terrace, Strand, W.C.—

J. W. Jeram £11,850
J. Jarvis & Sons, Ltd. £10,775
J. Willmott & Sons 11,410
Kilby & Gayford, Ltd. 11,245
A. E. Symes 10,982
Saby & Sons, Ltd. 10,873
J. Mowlem & Co., Ltd. 10,860
J. S. Hammond & Son 10,785

MALTBURY. For construction of sewers and sewage disposal works, for the Rotherham Rural District Council. Mr. B. Hey, Surveyor to the Council, Imperial-buildings, Rotherham. Quantities by the Surveyor—
T. Gray & Sons, Tinsley, Sheffield* £7,650

NORFOLK. For erection of cottages at Terrington St. Clement. Messrs. Walker & Walker, architects 44, Market-place, Wisbech. Quantities by the architects—

H. W. Reeder £263
H. Rilett 240
Hall & Lawson 230
Johnson & Son 220

P. Bone £13
R. Eggleston, Terrington St. Clement, King's Lynn* 18

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Limited (Incorporating the Ham Hill Stone Co. and O. Trask & Son, The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lav. Asphalte Company (Mr. H. Glenn), Office, 45, Poultry, E.C.4.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

PHOTOLITHOGRAPHERS,

4 & 5, East Harding-street,

Fetter-lane, E.C.

PILKINGTON & CO.

(ESTABLISHED 1838),

DEPTFORD WHARF,

190 & 192, CREEK ROAD, DEPTFORD, S.E.

Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.

Polonceau Asphalte.

PATENT ASPHALTE AND FELT ROOFING.

ACID-RESISTING ASPHALTE,

WHITE SILICA PAVING

SEYSSSEL ASPHALTE (Direct from the Mines).

SLATEWORK

of every description manufactured by

JOHN WILLIAMS & CO.

High-class ENAMELLED

Slate for BATHS, DADOES,

MANTELPieces, etc.

TABLETS, incised and gilded.

DINORWIC WORKS, ROTHERHITHE, S.E.

"Drop Dry" Glazing

ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.

Copper & Zinc Roofing.

The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address:
"COURTEOUS, LONDON."

F. BRABY & CO., LTD.

Telephone:
North 3032 (4 lines).

Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.

Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

THE BUILDER

VOL. CI.—No. 3572.

JULY 21, 1911.

CONTENTS.

	PAGE
THE EDWARD VII. MEMORIAL: THE NEW SITE.....	59
ST. PAUL'S BRIDGE BILL.....	60
NOTES.....	60
THE LONDON SALON.....	61
THE NEW CHAPEL OF THE KNIGHTS OF THE ORDER OF THE THISTLE (WITH ILLUSTRATIONS).....	62
LIVERPOOL UNIVERSITY (WITH ILLUSTRATIONS).....	64
BRONZES METAL-WORK (WITH ILLUSTRATIONS).....	66
GENERAL NEWS.....	67
"FELDENBURST," BOXMOOR, HANTS (WITH ILLUS- TRATIONS).....	67
BOOKS (WITH ILLUSTRATIONS).....	68
CORRESPONDENCE.....	70
INTERCOMMUNICATION COLUMN.....	71
CHURCH OF ST. LEONARDS, BEDFORD (WITH ILLUS- TRATIONS).....	71
EDITORIAL SUMMARY.....	72
REVIEWS.....	72
EXPOSITION NEWS.....	72
MAGAZINES AND REVIEWS.....	72
NOTES TO ILLUSTRATIONS.....	72
SEVENTY YEARS AGO.....	72

	PAGE
MONTHLY HISTORICAL REVIEW:—	
A FORGOTTEN ARCHITECTURE OF THE FAR EAST (WITH ILLUSTRATIONS).....	73
THE EXHIBITIONS AT ROME IN 1911.—III.....	76
ANCIENT MONUMENTS AND HISTORIC BUILDINGS.....	77
WALL PAINTINGS IN SURREY CHURCHES.....	77
NOTES (WITH ILLUSTRATION).....	78
THE BUILDING TRADE:—	
THE CLERK OF WORKS.....	79
A LONDON CARPENTER 400 YEARS AGO.....	80
UNITED BUILDERS' ALLIANCE.....	80
GOVERNMENT CONTRACTS.....	80
GENERAL BUILDING NEWS.....	80
APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.....	81
PROJECTED NEW BUILDINGS IN THE PROVINCES.....	82
METROPOLITAN WATER BOARD.....	83
METROPOLITAN ASYLUMS BOARD.....	83

	PAGE
THE LONDON COUNTY COUNCIL.....	83
LONDON COUNCILS.....	83
LEGAL COLUMN.....	83
LAW REPORTS.....	84
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN.....	85
OBITUARY.....	87
FOREIGN AND COLONIAL.....	87
TRADE CATALOGUES.....	87
PATENTS.....	87
SOME RECENT SALES.....	87
PRICES CURRENT.....	88
TENDERS.....	89

Illustrations.

- CHAPEL OF THE THISTLE, EDINBURGH. MR. R. S. LORIMER, A.R.S.A., ARCHITECT.
- SOUTH FRONT AND EAST END.
- THE KING'S STALL AND THE EAST END AND CHAIR OF STATE.
- KNIGHTS' STALLS AND DETAIL OF THE KING'S STALL.



A Monumental Approach. By Hubert Robert (1733-1808). (See page 68.)
(From *Architektonische Handzeichnungen Alter Meister*.)

THE EDWARD VII. MEMORIAL: THE NEW SITE.

IF the Memorial Committee imagine that they are at the end of their difficulties in having adopted the north end of the Green Park "Broad Walk" as the site of a memorial statue to our late King, they are, we venture to think, seriously out in their calculations. If we are to assume that a portrait statue is to be embodied in the memorial, and the Committee's report certainly appears to suggest this, the site chosen is a most difficult one to deal with. The difficulties may not prove insurmountable, but the first essential

in taking any steps towards a satisfactory solution is the recognition of their existence. To begin with, the Broad Walk is obviously designed to afford a view of the Victoria Memorial from Piccadilly, and it is obvious that for one person who views the memorial from any other point there are a dozen who see it from this. The first necessity, therefore, is that this axis of this vista should be free, and how is it possible to place a portrait statue in any other position than the central axis of the monument? Suppose, however, that we sacrifice this vista and

substitute for the more distant Victoria monument a nearer one to King Edward. If the statue of the King is to face towards Buckingham Palace he turns his back on Piccadilly, from which road most people will view the monument, while, if he faces Piccadilly, his back is turned on Queen Victoria. The difficulty is the same whether the portrait statue crowns the monument or not, and we can hardly conceive it to be within the power of even our ablest sculptor to design a statue facing both ways—the only solution that would meet the case.

Clearly the proper site for such a monument in this location would be the north side and not the south side of Piccadilly; a statue here, with a fine architectural background, would be impressive both from Piccadilly and the Park, but this would involve the purchase of valuable properties beyond the means the Committee have at present at their disposal.

The difficulties we have cited are but a few of those that would present themselves to the artist called on to prepare a design for this site, and we can only reiterate our previously-expressed opinion that the only course likely to secure a satisfactory solution is an open competition. The suggestion that such a competition would exclude the best men is absurd; they could be retained by more than one method if necessary. But we confess that our faith in the so-called "best" men has been at times seriously shaken. It argues a very pessimistic view of the future of our country to assume that men of the coming generation are not at least as able as the preceding one, and if we were asked to say whether we would hope for a better result from a competition between, say, a dozen men who have achieved public recognition or from one between all those who have yet to achieve it, we should be inclined to put our faith in the latter. The British attitude of caution renders the path to recognition a long and arduous one, and before achievement is widely acknowledged a new generation has sprung up capable of effectively challenging the ideals of its predecessors. For this reason we maintain that every opportunity should be afforded for the younger man to show what mettle he is made of. Moreover, we doubt if the artist, however eminent he may be, who is not sufficiently interested or public-spirited to engage on a design for such a memorial unless his commission is assured, is the man that should be employed under any circumstances for a work of this character. We should have thought the Advisory Committee would have been cured of their blind faith in the system of commissioning a sculptor to control the form of the memorial. Their last scheme was wrecked by the mistaken idea of their nominee as to the type of monument the site demanded no less than by the insidious attempt to eliminate architectural control, and it might have been imagined that the lesson would have been taken to heart. As it is this unfortunate experience seems to have taught them nothing.

We should naturally claim that the matter of this memorial is primarily an architectural one, but the advantage of a properly-conducted competition is that by this method the question settles itself. With the jury formed for the purpose of appreciating the question from all the aspects involved, the selected design may be the work of a sculptor, or an architect, or of both, the sole reason for its adoption being that it is absolutely the most artistic solution of the problem. We are more than ever convinced that unless such a course is adopted it can only be a lucky fluke if the memorial escapes being counted as another of our too numerous failures in this direction.

ST. PAUL'S BRIDGE BILL.

DESPITE the fact that this Bill is now passed by the House of Commons and that the City has triumphed over the almost unanimous view of artists throughout the country, it still remains to us to draw attention to the happenings of the last week and to the means by which the Royal Institute of British Architects and others opposing the Bill have been outmanœuvred.

If we may judge by a leading article in the *Times*, public opinion has not grasped the meaning and significance of the evidence given by the three architects who appeared before the Select Committee on behalf of the Corporation. There is a danger that the public may think their evidence is entirely in favour of the scheme. This we feel bound to point out is not a correct description of the position. It is most essential to realise, in justice to these architects themselves, that we are not entitled to infer from their report that they were asked to give their independent advice on the whole situation or on the underlying traffic ideas which prompted the scheme. It is only fair to them to assume that they were simply retained by the Corporation to make suggestions and to give their opinion within certain definite limits which involved the acceptance of the underlying idea—upon which their report expresses no opinion. Had these gentlemen been asked to put this scheme out of their minds, to consider the whole problem afresh from the beginning, and to produce the best scheme they could, there is no doubt a better one would have resulted, and it is this better scheme that the situation called for. It is not to be supposed that they would wish the public to think that they considered this scheme a complete and satisfactory solution of every aspect of the problem or that they themselves are not capable of producing a better one.

There is also a danger that the attitude of the Institute may not appear quite clear. We understand the Institute expressed its approval of the action of the Corporation in consulting three of its members on the assumption that they were to be consulted as independent experts on the whole situation and that their advice was to be sought as to the means of proceeding to obtain the best possible results, and not that they were to be simply retained to report within the limits of a reference which granted certain premises entirely destroying the value of the report as an expression of independent opinion on the root idea of the scheme. This fact, we think, should be thoroughly grasped in justice to all concerned. If we read the report in the light of the fact that it is all based on the assumption of the necessity for a through traffic route at this spot, many opinions and conclusions it contains appear reasonable which otherwise most people would be disposed to question.

We must not forget that the architects do not seem to have been asked whether it was necessary to create this through traffic route at all, or whether the traffic could not have been relieved by developing Blackfriars as a main through traffic artery and creating a

local traffic bridge from St. Paul's to Southwark to relieve the other bridge of local traffic and make it possible to get rid of the danger of the tram tunnel at the Cathedral and approach it in an architectural manner. This and other such ideas seem to have been outside the terms of reference, but they are just the questions which lie at the root of the whole problem and upon which town-planning advice was so necessary.

Once take the need for a new through traffic route in this position for granted and start off with the preconceived idea that this is the dominant factor in the scheme, and it becomes easy to accept the bridge over Queen Victoria-street as an essential condition of a satisfactory scheme and to look upon the approach to St. Paul's as "at the best a secondary aim," but these are just the points which an independent report on the whole situation would not have taken for granted.

It cannot be assumed that the Institute in accepting the appointment of its three members thereby shows an approval of the scheme or that general professional or artistic opinion has been appreciably altered by the late events.

We can now only accept the accomplished fact and turn our energies in the direction of endeavouring to secure that the bridge and its approaches, however wrong it may be in conception as a scheme, shall as far as possible save itself from the worst by assuming decent architectural form and proportions. The larger question as to the methods at present employed for the initiation and critical investigation of schemes of such far-reaching public interest as this remains to be dealt with, but its importance justifies us in reserving it for consideration in a future issue.

NOTES.

East London Memorial to King Edward.

WE most heartily sympathise with the Bishop of Stepney's suggestion that the derelict Stepney Fish Market and adjacent land should be converted into a public park and river-side terrace as a memorial to King Edward in East London. The size of London justifies this course, and the site, while it would afford as suitable a position for a monument as any other in the East End, has the additional advantage of providing a park where it is badly needed, and one that, fronting the river, is of greater value than its actual area of eight acres would suggest. Besides this there is the gain of opening up the view of the Thames with its picturesque incidents of passing traffic.

The Natural History and the New Science Museums.

THE increased demands of the Scientific Collections at South Kensington is apparently necessitating the curtailment of the ground at present occupied by the Natural History Museum. At the time this museum was built it was evidently not anticipated that the land between the Albert Hall and Cromwell-road would be built on to the extent that subsequent requirements have rendered necessary, and a liberal space was left on all sides to the great advantage of the effect of the

outh end of this area. Now it is intended to form a road close to the back of the Natural History Museum, thus preventing the possibility of that building extending northward at any future time. As the building is planned this could have been the natural direction for any enlargement, but it is possible to substitute extensions on the east and west, and though these would modify the architectural effect of the building we do not think they would be seriously detrimental to it. Sir Norman Lockyer, in a contribution to *Nature*, suggests various ways in which the proposed scheme could be improved from the point of view of the requirements of the existing and the proposed museums. These suggestions do not, however, materially affect the architectural aspect of the question except that his amendments would tend to preserve intact the open spaces east and west of the Natural History Museum; from this aspect they are certainly deserving of consideration quite apart from the practical contentions.

The South Kensington Site.

THE official proposal referred to in our previous "Note" involves cutting another 60-ft. road between Exhibition Road and Queen's Gate. Now, we are not disposed to say that under the present conditions some such road may not be desirable, but most assuredly it does not add in any way to the architectural impression created by the site as a whole. From the very first the entire area, which might have been made one of the most striking features of the Metropolis, has been treated in an unintelligent manner that emphatically condemns the system of saving artistic problems in the control of the official. Instead of preparing a comprehensive scheme by which the various buildings could have been brought into architectural relationship with each other the site has been parcelled out piecemeal as demands for it came along, and the only consideration that appears to have dictated the positions of the roads was the necessity of giving access to the buildings for which sites were allotted. Given a large oblong with a building of the mass and importance of the Albert Hall at one end, anything more inept than its intersection by a series of cross roads with the principal buildings all strung along the central axis can hardly be imagined.

The New Rooms at the National Gallery.

THE rearrangement of the National Collection, which promises to make it one of the most perfect galleries in Europe, proceeds apace. Within the last few weeks four galleries and a cabinet gallery (which you enter directly from the right) have been opened to the public. The masterpieces of Dutch and Spanish art are now on view—the works of Velasquez, Rembrandt, Murillo, Franz Hals, and others—seen to excellent advantage. The colour of two of the galleries is olive green, while those in which the works of Rembrandt and Velasquez are hung, is of old gold. The green, we consider, on the whole, to form the better background, more especially perhaps in the

case of Rembrandt, the effect of whose colour schemes is somewhat diminished by a mass of wall colour of something like approximate tone. The pictures are admirably spaced: the effect of each work is considered; there is no antagonism between those placed in juxtaposition, either in colour or in pictorial idea. The light, however, in the cabinet gallery is quite inadequate, and reduces to an absurdity the hanging of pictures on the wall at each side of the window, as they cannot be seen. And in Gallery No. XIV. it is surely a little disrespectful to the memory of a considerable painter to place the works of Goya in an almost inaccessible corner, from a spectator's point of view, behind a door!

Ozone Water Sterilisation.

CONTINUED progress is being made in the adaptation of ozone to the purification of drinking water for the supply of towns and cities. Apart from examples in America, the ozone plants at Chartres, Florence, Hermannstadt, Nice, Paderborn, Paris, Villefranche, and Wiesbaden are sufficient to demonstrate the scientific and commercial success of the system, whose claims have been further recognised by the decision of the Paris Municipal Council to install two additional plants each of 9,900,000 gallons output daily, and by the 11,000,000 gallon plant recently completed at St. Petersburg. The latter has been installed at the Penkowaja Waterworks, drawing supplies directly from the Neva. Before treatment by ozone the water is clarified and rapidly filtered to remove impurities in suspension. The clarifying process is conducted on the American system involving the use of alum as a coagulant, and filtration by a series of Howatson mechanical filters, where crushed flint takes the place of sand. The ozone plant was constructed by the Russian Siemens and Halske Company and has fulfilled all expectations. It is stated that the water now supplied is clear, pure, and healthy in every way, the bacteriological records being particularly satisfactory.

Gidea Park.

In another column will be found a letter dealing with the methods adopted in regard to the competition for small houses at Gidea Park. Many of the criticisms it contains amply justify the demand for an investigation as to whether these methods are not likely to divert architects from their legitimate aims by entangling them in the complications of speculative commerce. We think this point of view may not have struck the promoters at the time the competition was organised, and certainly it did not come within the purview of the assessors, whose duties were limited to the means to be adopted to secure a fair adjudication, so that they should not, as our correspondent seems to think, be regarded as in any way responsible for the commercial relationship between the promoters and the competitors.

ST. ANDREW'S PARISH CHURCH.

Two memorial windows have been fixed in the Hunter aisle of this church. They depict the Baptism and the Agony, and form two of a set of four representing scenes in the life of Christ, and were designed by Mr. Louis Davis.

THE LONDON SALON.

THE Allied Artists' Association, Ltd., whose fourth exhibition is now being held at the Albert Hall, have chosen in the London Salon a somewhat ambitious title for their show. The Independents in Paris, or the Secessionists in Vienna, have been much more modest in this respect, while their aim has been higher. When we get a Salon representative of London art it will, we expect, be a very different affair from this. So far, indeed, as British art is concerned it is largely an exhibition of the "great rejected," the work of painters whose ideal is perfectly in harmony with the tradition known as academic, but with no new impulse, no new note, and, generally speaking, with a vastly inferior execution. The exhibitions of the foreign painters to which we have referred are, perhaps, in part composed of works which have been refused at the official galleries, but, in so far as the Secessionists at Vienna are concerned, the works have not been thrown out in consequence of any inadequacy in fulfilling the academic standard, but because the aim is essentially different from the academic aim. It is, in a way, an exhibition of protest. And so it is with the much larger, much wilder collection of the Independents in Paris. The spirit of protest there shrieks from every wall. At Vienna the small group of artists are held together, broadly speaking, by their antagonism to a formula which places limits on individual expression, on research, and on experiment. The training and capability of the artists are not in dispute. It is all a question of point of view. The wish of the Independents is altogether on another plane. This show is the largest in the world, and its democratic, or rather anarchical, character is established by the freedom of its rules, if anarchy admits of any. Outside Paris, and not always there, the pictures are not taken seriously. But journals of the standing of the *Gazette des Beaux-Arts*, for instance, open their pages to an elaborate and thoughtful consideration of the work. Wildly extravagant, farcically puerile, indeed, as many of the pictures may be, we are not out of sympathy with the point of view which hesitates to dismiss the exhibition as of no concern. What country is there but France, what city but Paris, that could provide such a boundless expression of artistic extravagance, of *naïveté*, of at once incompetence and ability? If the Quartier Latin of Murger's time no longer exists, its spirit is still abundant, and this is, after all, a spirit which, in the course of time produces the great painters and sculptors of France. If the show of the Independents is a nursery in which the din and tumult are a little deafening, a little beyond the decencies of a well-ordered establishment, there emerges now and again out of the racket a voice which commands attention. The *raison d'être* of such an exhibition is plain; its useful purpose in the republic of art obvious. It is not, on the face of it, a training ground for future Academicians, but it often proves to be so in effect. The work of many of the older Independents, for instance, is esteemed at the Salons. Although the London Salon is established on sufficiently broad lines, it possesses little, if anything, of the character of the Paris group. Apart from one or two foreign artists of distinction, and a very small body of English artists (most of them women), the free and independent spirit of the youth of Paris is lacking. A complacent adherence to the academic ideal is the dominating note of the vast majority of the works. And complacent mediocrity is more disturbing than fantastic incompetence. The protest, if protest there be, is against the selection of a hanging committee, not against an artistic method or point of view. The exhibition may be of some advantage to the artists who have not had the opportunity of seeing their work hung in a large gallery with other pictures. The sort of detachment which this view engenders may enable them to

discover certain very obvious limitations. But we have no wish to throw cold water on the exhibition as a whole. As yet, perhaps, the society is too young to have discovered in itself the elements which make for genuine interest and vitality. These will, no doubt, gradually assert themselves. And, as we have indicated, there are pictures at the Albert Hall which are well worth a visit. M. André Chapuy, M. Machkoff, Miss Keimann-Meltzer, and Mme. René Finch are among the foreign artists who show work of more than ordinary attraction, while Miss Lilian Lancaster, Miss Nesta Wells, Miss Leggett, Mr. A. H. Hudson, and Mr. E. H. R. Collings provide the most important work by English artists.

THE NEW CHAPEL OF THE KNIGHTS OF THE ORDER OF THE THISTLE.

This chapel, by Mr. R. S. Lorimer, A.R.S.A., F.R.I.B.A., which we illustrate this week in a manner in accord with its architectural quality and importance, was opened by his Majesty the King on Wednesday, 19th. In its lay origin the chapel is an instance of the good results of the diversion, under competent judgment, of the word of a bequest, if its spirit be followed by a generous heir.

The late Lord Leven and Melville left a sum of 40,000*l.* to be applied by his trustees, should the King be pleased to accord his necessary permission, to the purpose of "putting into repair and restoring the Chapel at Holyrood Palace so that it can be used as a Chapel for the Order of the Thistle." He made the bequest conditional on the consent and ability of Sir John Stirling Maxwell and

Lord Balcarres to act as executors of this part of his will. He also named an architect for the work. By the terms of the will, if the architect could not act, or if any impediment came in the way of the terms of his will being carried out precisely as specified, it was provided that the 40,000*l.* was to revert to the estate. Lord Leven and Melville died in 1906. The trustees, after considering the project, reported most strongly against any attempt being made to restore Holyrood Chapel, as "restoration" would have involved almost entire reconstruction. Prof. Lethaby was asked to give his opinion, and found himself in accord with the trustees. The scheme being opposed by those entrusted with its execution was, therefore, abandoned, and the money reverted to the Leven family, and on all hands it was assumed that no more would be heard of it. It is known that this turn of affairs occasioned disappointment to King Edward, who had long cherished the idea that the Knights of the Order of the Thistle should have a chapel of their own. In a manner as unexpected as it is certainly unusual, the young Lord Leven and Melville, making himself heir to his father's intent, came forward and placed his portion of the diverted 40,000*l.* (an amount of about 24,000*l.*) at the disposal of King Edward, for the purpose of building a chapel for the Order. His two younger brothers afterwards associated themselves with this generous action. The King thereupon called together a Chapter of the Knights of the Thistle, and from among their number appointed trustees to carry the project into effect. In March, 1909, the Dean of the Order of the Thistle, the Very Rev. Sir James Cameron Lees, D.D., submitted to the Kirk Session of St. Giles (where he was then the minister) a letter from Lord Knollys, written on behalf of the King, suggesting that stalls or a chapel

should be constructed in connexion with the Cathedral. The Kirk Session replied that it was honoured by the proposal, and the Cathedral Board of Management and the Ecclesiastical Commissioners were equally well disposed, and in April Mr. Lorimer was appointed architect.

The opening ceremony on Wednesday and the meeting of the Order, at which, it is reported, the members sat in solemn conclave, are occasions of some historical interest. "The Most Ancient and Most Noble Order of the Thistle," though analogous in character to the Order of the Garter, is not its equal in point of antiquity.

According to "Burke," the Order of the Thistle was "revived" by James II. of England (VII. of Scotland) in 1687, but it is doubtful if the Order existed as any very definite body before that date. After the Revolution nothing more was heard of the Order until it was restored by Queen Anne at the end of 1703. Since then it has maintained an honourable and continuous existence, though the Knights have never until now had a chapel in which to hang their banners. It is also said that never in its history has the Monarch presided at the investiture of any of its Knights.

In connexion with the opening of the chapel King George invested two new Knights, and for this purpose the sword of State which Pope Julian presented to James IV. was used. And a great concourse of Peers and Lieutenants and Officers and Sheriffs assembled in St. Giles's. For the chapel itself is not of any great size. It was found that no adequate scheme could have been carried out within the existing walls of St. Giles's without interfering with the congregational uses of the church. Also, owing to the disposition of the lighting of St. Giles's and the plan of the church generally, the chapel could only have been placed where it is—that is to say, on the south side, beside the choir. As the size of the chapel in width and length was necessarily limited in order that it should not block up Parliament-square, a dignified and stately effect was aimed at by giving the chapel great height in proportion to its other dimensions, the internal dimensions being: Length, 38 ft.; breadth, 18 ft.; and height, 42 ft. to the apex of the vaulting.

Even as we saw it, lacking the ceremonial concourse, the aspect of the interior is sufficiently gorgeous and complete. Our illustration (the photographs are by Mr. Francis C. Inglis, of Edinburgh) gives a fair idea of the east end, with the chair of investiture in the centre. The linen-fold panelling, which lines the apsidal end, is peculiarly successful in point of design, execution, and the quality and colour of the wood. Throughout the woodwork the clear-cut but by no means inhuman precision of the workmanship upholds the freshness of the design. The chair of investiture is placed on a granite step, and the lion and the unicorn on the octagonal uprights on either hand can be distinguished, and on either side of the chair the hanging lamps of wrought steel in the form of an angel holding a torch, with pendants of the "Pelican in her Piety" (a device which recurs frequently, being symbolical of knightly virtues) in spherical form, below. On the right hand is seen the Dean's chair, with its plain *prie dieu*; on the left the lectern, with four "buttresses" terminating in the emblems of the Evangelists. The underside of the canopy of the chair is richly panelled and carved, and in a niche is placed an allegorical winged figure, with a spear, treading on and overcoming the dragon, Evil. The canopy is octagonal in form. This view is the one in which the floor is seen to best advantage. It is of Ailsa Craig granite, varied in colour, set in a simple pattern, with squares at regular intervals of Iona marble. It forms an admirable complement to the brown woodwork and light-coloured stone. The quality of the woodwork is perhaps best seen in our detail view of the King's stall at the west end, and it is



The Chapel of the Thistle, Edinburgh: Entrance from the Ante-Chapel.
Mr. R. S. Lorimer, A.R.S.A., Architect.

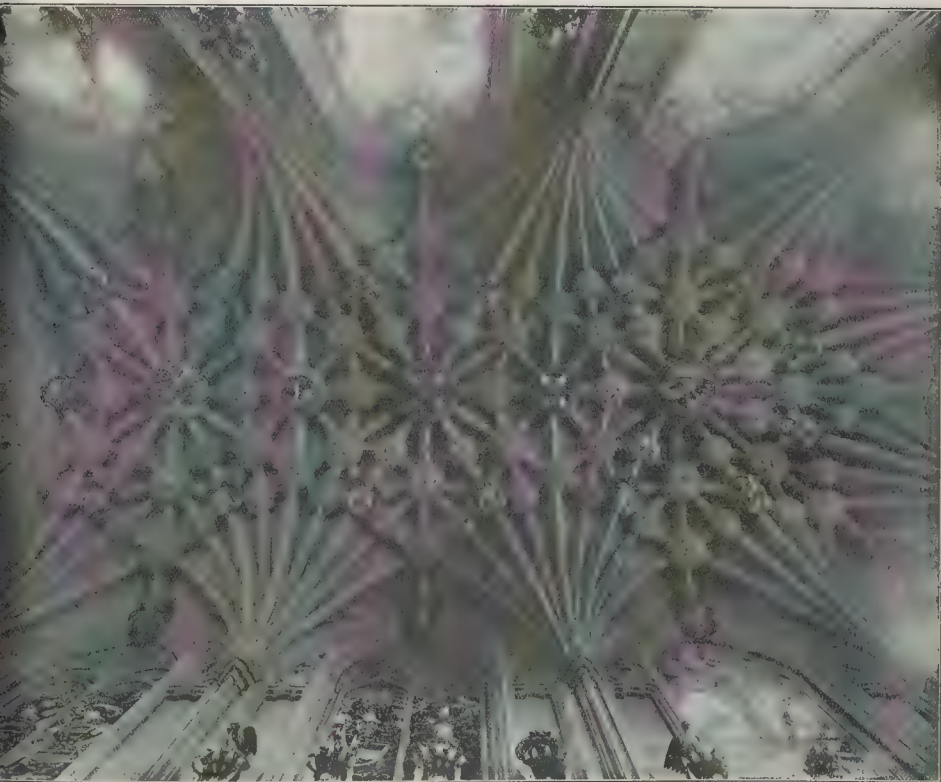
necessary for us here to expatiate on it, as upon the merit of the design. Suffice it that in the actuality there is the pleasure of colour and of a satisfaction of the sense of closeness and worth of work and material which a photograph can hardly convey. The only existing examples of ecclesiastical stonework in Scotland of any importance are the few stalls at Dunblane Cathedral and the woodwork in King's College, Aberdeen. Consequently, the architect, though inheriting tradition, was left almost unaided and free, and the design, as eventually worked out, was evolved partly from drawings, partly from models, a large shed being erected in the building-yard, where models were prepared—the design growing and changing as possibilities and limitations became apparent to the architect and the carvers, with whom he has worked continuously for the last fifteen years. The decorative motives employed, where they are not heraldic or appertaining to ecclesiastical allegory, are drawn from themes in nature—the thistle, the vine, the rose, the corn, and so forth, so treated as to make a coherent scheme of natural symbolism throughout.

The stalls on which the Royal stalls at the west end are set is about 1 ft. 4 in. in height, His Majesty's seat in the centre being a little higher than the Prince of Wales' the Duke of Connaught's on either hand. Above, the "stepped" arrangement of canopies, seen best in the view showing the whole chapel, is happy in the effect of its additional dignity to the Monarch's seat. In this canopy may be seen St. Margaret of Scotland leading children, hidden in the

photograph, are St. Kentigern, with the model of his cathedral, and St. Columba in full canonicals, and with the robin perching on his wrist. The height from the floor to the top of the King's canopy is 33 ft., whereas that of the side stalls is only 25 ft. Each is surmounted by the "achievement" of the Knight for whom it is destined, consisting of the sword and helmet, the coronet and crest, and the mantling peculiar to the knight concerned. These achievements, in combination with the stall-plates in Champagné enamel by Mrs. Traquair, give colour and an ordered variety of inestimable value. The windows, necessarily at a great height from the floor, to clear the stalls, also give colour, but of a more accustomed sort. Each, with the exception of the small west window and the central one of the eastern apse, are double-light windows, heavily traciced at the top. The square west end has one small window, with very deep embrasures obtained by setting it in an exceedingly fine oriel, just to be seen in our view of the exterior. The hexagonal apse has three windows, and the south side three and the north only one—by a happy inspiration which chose to fill the two western bays with coloured panels in relief, and so avoid a disreputable conflict of cross light, and induce a sense of attachment to the larger structure of St. Giles on that side. Each double window carries in clear coloured glass (or the decorative relief mentioned above) the names and arms of two of the knights. The list, reading round the chapel from the north-west bay, showing: Argyll and Montrose, Crawford and Tweeddale, Zetland and Errol; in the apse, Aberdeen and Hamilton of Dalzell, Roxburgh, and Haddington; on

the south side, Balfour of Burleigh and Home Rosebery and Fife, Buccleuch and Atholl. The badge of the thistle is emblazoned on each window, and across it, on a scroll, is the name of the knight. The one-light eastern window is dedicated to St. Andrew. The west window, in a colour scheme of gold and brown, carries the Royal arms, according to the Scottish quartering, and underneath those of the Prince of Wales and the Duke of Connaught.

The roof is founded on late XVth century examples, which time is by many people considered to be the zenith of the Gothic style, as the roofs of that period read as real constructive builder's stonework, which cannot be said of the fan tracery type of vault which came later. The aim has been to keep the stonework strong and vigorous, partly because the Scottish Gothic never attained the exquisite refinement seen in some English examples, and also because modern work is often too timid in scale as compared with old. As regards the bosses, the main bosses at the apex of the chapel roof represent, reading from west to east (that is to say, from left to right on our photograph), the Royal Arms, St. Giles, St. Andrew, the Jewel of the Order of the Thistle, and the large boss at the intersection of the apsidal end of the chapel, the "Pelican in her Piety." The bosses that are not heraldic are treated with some definite motive from Nature in the manner noted above concerning the canopies. The ante-chapel is 25 ft. in length by 14 ft. It is vaulted in two bays, and, like that of the chapel proper, its vault may be described as groined vaults, richly ribbed, having main ribs, transverse, tierceron, and lierne ribs,



The Chapel of the Thistle, Edinburgh. The Vault.
Mr. R. S. Torimer, A.R.S.A., Architect.

with carved bosses at all the intersections. As the ante-chapel vault had to be kept low (affording striking contrast with the chapel proper beyond), it is a four-centred vault founded on examples of a slightly later period than the vaults of the chapel itself. The bosses are coloured in the same way as those in the chapel. In the archways opening into the cathedral are some beautiful wrought-iron screens. The bays of the ante-chapel have cusped arches with carved terminals to the cusps, and in the soffit of the arch electric bulbs are concealed, showing the work most excellently, but with slightly theatrical effect. On the right side of the chapel door is a stone panel containing the arms of the donor and the following inscription: "This chapel was gifted by John David Earl of Leven and Melville and his brothers in fulfilment of the wishes of their father, St. Andrew's Day, 1910."

LIVERPOOL UNIVERSITY.

THE annual exhibition of students' work of the Liverpool School of Architecture was held at Liberty-buildings on July 6, 7, and 8. As before, the exhibition consisted chiefly of the work of those students who have completed the normal course at the School, each of whom has a bay allotted to him, in which he can arrange his own drawings as he pleases; besides this main body of work there are some selections of first-year work by students who will take the examination next summer, and also some examples of the work of past students. These latter contain several drawings made by Mr. Prestwich, a former student, who is now studying at the British School at Rome; there is a charming sepia drawing of the Porta Palio at Verona, a detail interior of the Pantheon in colour,

and a vivid water-colour sketch of the Temple of Neptune at Paestum. We understand that Mr. Prestwich is engaged upon, as his chief undertaking at Rome, the restoration of a palace at Palestrina, and as the ruins leave a good deal to conjecture we may hope for some imaginative piece of restoration such as the French students of the Villa Medici have frequently given us. We look forward to the day when, in place of this exceptional

case of Mr. Prestwich, this Roman sojourn will be the normal conclusion of the studies of our most brilliant young architects.

To return to this exhibition, the work this year appears to be well up to the high standard which we expect from the Liverpool School; the number of students turned on is actually small—six certificate students and one student for the degree course of Bachelor of Architecture, the second examination for



Interior of Hill Hall, near Epping.

Visited by the Architectural Association on July 8 (see last issue, page 38).



The Chapel of the Thistle, Edinburgh: The Vault from above, showing Construction.

Mr. R. S. Lorimer, A.R.S.A., Architect.

which he takes before leaving the school studio for two years in an architect's office. Numbers, however, in architectural, as in every other training, are not the first importance, and we had far sooner see the high standard of this little company of seven join the profession than a round score of rough recruits, who could bring brute force but no fine strategy to the cause.

The Holt Travelling Scholarship of 50l. has been awarded this year to Mr. H. C. Mason. The prize is given on two counts—measured drawings and design—and we feel that it has been well bestowed. In design, perhaps, Mr. Mason does not shine much brighter than several others, but his set of measured drawings of Blenheim Palace are considerably the most striking thing in the exhibition. Four huge drawings, beautifully rendered in tone, give a fitting representation of this colossal mass of sheer monumental architecture; so far as we are aware, there is not in existence an accurate set of drawings of Blenheim, and these drawings therefore constitute a valuable contribution to the study of English Renaissance architecture. The other measured drawings which were of particular interest were shown by Mr. Chambers, the student who is taking his degree of B.Arch.; Gabriel's Ecole Militaire and Duc's interesting and refined façade to the Palais du Justice at Paris were both admirably rendered. Otherwise, the measured work at this exhibition was hardly equal to the usual standard in point of interest. We noticed two sets of the small but striking front of the Liverpool Apothecaries' Hall; Trinity College, Dublin, we feel, was dealt with rather more fully than merits.

The series of "classical compositions" or studies in the grouping and arrangement of classical architecture—generally taken from some well-known example—are continued this year, and we should much like to see these reproduced in colour. The greatest possible amount of variety is shown, from a severe treatment of the north portico of the Erechneum framed within the enriched doorway to quite imaginary scenes covered with a wealth of Greek and Roman detail, like the work of a refined and Grecianised Piranesi. We noted studies of the Propylæa, the heroic monument of Lysicrates, the Erechneum, the Parthenon, the Temple of Vesta at Tivoli, and the Nike Apteros.

Turning to the designs, we feel that, though perhaps there is not any single student as brilliant as was Mr. Prestwich last year, the general average is higher. The subjects of several of the designs are evidently suggested by Liverpool's locality; the new skyscraper on the Mersey front has given the idea for a vast office block, and the amazing vitality of the present pier-head erections has led to an attempt to design something

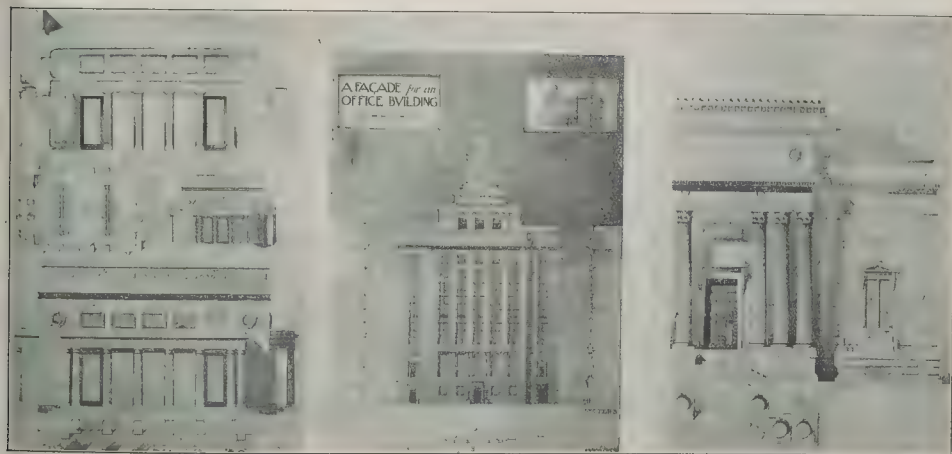


St. John's Church, Epping. The late Mr. G. F. Bodley, R.A., Architect.

Visited by the Architectural Association on July 8 (see last issue, page 36).

more worthy the second town in the kingdom, at the same time including a monument. We illustrate Mr. Mason's version of the latter, and Mr. Davies' skyscraper. Mr. Thompson's tram shelter for a public place is a simple, strong design which suggests possibilities of treatment undreamt of by our corporations.

Mr. Chambers's examination design (for which he was allowed one month) was a cotton exchange, and we illustrate a portion of the plan in detail. Other designs were for a mausoleum and for a monument to a naval hero in a similar position to the Wellington Monument under the arcade of St. Paul's. Three or



Tram Shelter.
By Mr. W. H. Thompson.

An Office Building.
By Mr. W. E. Davies.

A Cotton Exchange.
By Mr. G. E. Chambers.

Liverpool University: School of Architecture.

four, at any rate, of these latter designs were of great merit, and lead one to hope that the future of our public monuments may not be so disastrous as the past has been.

Domestic architecture is represented in a very practical way by a design for a row of seven cottages to be erected at Port Sunlight. Mr. Lever offered three prizes of 25*l.*, 10*l.*, and 5*l.*, for the best designs submitted, which were awarded to Mr. R. F. Dodd, Mr. W. E. Davies, and Mr. A. R. Sykes. We consider the School is exceedingly lucky in having such practical and stimulating prizes offered to them. Mr. Lever also gave an additional prize of 25*l.*, which was awarded to Mr. Davies for the purposes of travelling study.

We understand that the Liverpool School of Architecture sketchbook will be published again this year, which will contain the drawings shown at this exhibition reproduced to a large scale.

PRECIOUS METAL-WORK.

It is a fact worth noting that artistic work in the precious metals is at a lower ebb to-day than it ever reached in any past period of British craftsmanship. The big manufacturers have not been influenced at all by that revival of handicraft and design which Pugin began and William Morris developed, with help from many men of distinction; and it is a very small public that encourages the beautiful skill of Alexander Fisher, of Nelson Dawson, of Harold Stabler, and of other metal-workers who are genuine artists. We cannot justly complain of the flaunting trade products, because manufacturers have to appeal to the ruling tastes of the hour; and we know that our British public will accept anything if it be shown in a splendid shop and advertised profusely in newspapers. Common-sense appears to grow less with each advance in free education. When the training of the English people meant an apprenticeship in many handicrafts, the difference between good work and bad was a matter of taste that most people could be trusted to see for themselves; while the general aim to-day is to buy something that is showy and "cheap." Its cost of production must be very low, for those who purchase it like to see it advertised in the most expensive newspapers, at the rate of 350*l.* for a full-page announcement. This expense is added to the other costs of production, yet the eager faith of the million believes in "cheapness" as a

blessing. How long this sort of trickery will last no one knows; but it is high time that our free schools made efforts to infuse a little common sense into their teaching.

Some years ago the *Studio Magazine* tried to awaken public interest in metal-work, issuing a series of articles that appealed to sportsmen. The usual sporting cup is a thing of horror, bad in form, and with a surface as smooth as ice. There is never a trace of a tool-mark; and if you tell the manufacturer that beauty is skin deep, and that precious metal-work owes its charm to a living surface treatment, he shrugs his shoulders and says that people buy his goods. The man is right. Sportsmen do not care a row of pins for any quality except the negative one of size. Their cups must be cheap and big. On that point they are all agreed; and for this reason, among others, the articles in the *Studio* had little influence, though they gave new designs by excellent artists.

It is pretty much the same in another phase of national metal-work, the plate and the table-centres used by Army officers at their mess. These are usually supplied by some large shop; it is not often that a commission is given to a craftsman. But we illustrate herewith an exception to this rule, showing a table-centre in silver and enamel designed and executed by Mr. Harold Stabler for the Welsh Regiment. The height is rather more than 2 ft. 10 in. The lower part is a silver bowl for fruit, surrounded by pillars; these are ornamented with a chevron design in green and white cloisonné, and their capitals of rich open-work have tops of green enamel, surmounted by the heraldic Welsh dragon. The knob is embellished with alternating panels, some with Prince of Wales's Feathers, others with openwork vine ornament. Above, supported by brackets, is a graceful dish for flowers, with goats rampant standing on the rim, for the Welsh Regiment has long been famous for its white goat. From the centre of this flower-dish rises an enamelled shaft decorated with chevron pattern. It leads up to a ball of silver, on which stands a female figure playing a harp, an emblem of Wales.

In addition to this table-centre, other recent examples of Mr. Stabler's craftsmanship include an altar cross in brass, a silver chalice 6½ in. high, and another silver chalice enriched with Ceylon stones. There is no need for us to praise their handling, because their beauty is quite evident; but why should not a chalice be made with a cover? A communion-cup is a sacred thing, and ought to be protected from the



Silver Bowl: "The Seasons."

By Miss Florence H. Steele.

desecration of dust. In the old days it was customary to cover the chalice with the paten, but there is reason to believe that prelates were not always satisfied with this usage, for in Bishop Montagu's "Articles of Inquiry," dated 1638, we find the following question:—"Have you a chalice or communion-cup, with a cover of silver, and a flagon of silver or pewter (but rather of silver) to put the wine in?" Had the cover in this case been the paten, or communion plate, surely the Bishop would have said so.

Miss Florence Steele's work is always a feature of the Arts and Crafts Exhibition held triennially; the silver bowl above is a representative example of her craftsmanship.



Table Centre for the Welsh Regiment.

By Mr. Harold Stabler.



Altar Cross in Brass.

By Mr. Harold Stabler.

GENERAL NEWS.

Professional Announcement.

The staff of Sir Aston Webb, R.A., and Maurice E. Webb, M.A., will be on holiday from July 22 to August 7, and during that period the firm will be obliged if urgent matters only are brought forward.

Reading Abbey.

Dr. Jamieson B. Hurry has presented to the borough two memorials of Hugh de Boves and Hugh Cook de Faringdon—first and last abbots of the Abbey. Each memorial is carved out of a slab of blue Forest of Dean stone, 6 ft. by 5½ ft., with scenes, in bas-relief, from the abbots' lives. The stones have been deposited by the site of the abbot's chair in the Chapter House.

London University Holiday Course.

During the second week, beginning July 24, Mr. Allen Walker will lecture upon "Historic London," and Professor Walter Rippmann upon "The School of John Lyon at Harrow-on-the-Hill." The programme includes an excursion to St. Albans on July 27, and on July 29 visit to Hampton Court Palace under the guidance of Mr. Allen Walker, who will there deliver a first lecture upon "Tudor London." The course will conclude on August 11; seven-teen nationalities are represented.

University of London School of Architecture: Course in Academic Design.

A day course in academic design will begin in October, 1911, at University College. The course will be conducted mainly on the lines of the course in the Ecole des Beaux-Arts, Paris. Dr. J. J. Burnet, A.R.S.A., F.R.I.B.A., has consented to act as architect-visitor, and criticise the designs submitted from time to time as may be necessary. The course is not intended for beginners, but for those who have already attended a course of recognised training at a university (or other institution), or have otherwise obtained their preliminary education. The need for such an advanced course has long been manifest. A large number of students, after their pupillage stage is passed and after they have spent some time in an architect's office, are often at a loss to know what to do next. Few are able to start practice on their own account with sufficient work to keep them fully employed, and yet have enough to do to make it difficult for them to continue as assistants. Many also have had no opportunity of working out problems for themselves on a large scale, or seeing such problems solved in offices in which they have worked. There will be no definite entrance examinations. All students will be eligible who can produce drawings to show that (1) they have a thorough acquaintance with the "Orders," perspective, and topography; (2) that they can express this in good drawing; (3) that they have passed through a course on construction; (4) that they have a fair knowledge of design. This course of academic design is additional to the two day courses which are arranged to lead up to the academic course. Further information can be obtained from Professor F. M. Simpson, F.R.I.B.A., University College, London, Gower-street, W.C.

Royal Visit to Edinburgh: Holyrood Palace and St. Giles's Cathedral, Edinburgh.

For the residence of the King and Queen at Edinburgh during the current week a rearrangement has been made of the state-rooms in Holyrood Palace. Under the directions and superintendence of Sir Schomberg McDonnell, Secretary to the Office of Works, and Mr. W. T. Oldrieve, F.R.I.B.A., the suite of rooms, known as "Queen Victoria's apartments," in the east block have been fitted for occupation, and on their walls have been rehung the old pieces of Flemish tapestry which were removed about sixty years ago. In the State drawing-room the floor is raised, and new panelling is fixed, of oak from a single tree grown at Yester, Lord Tweeddale's seat; the walls of the grand staircase are restored to their former state by the stripping off of disfiguring paint. The chapel of the Order of the Thistle, St. Giles's Cathedral, dedicated by the King, has been erected at the south-east corner of the Cathedral, after the plans and designs of Mr. R. S. Lorimer, A.R.S.A., F.R.I.B.A., Mr. Thomas

Ross, F.S.A. (Scotland), acting as honorary consulting architect to the trustees. The building measures 33 ft. by 19 ft., and is 35 ft. high to the apex of the vaulting. There are special stalls for the Sovereign, the Prince of Wales, and the Duke of Connaught, and, round the side walls, sixteen for the Knights of the Order. The fabric is of Cullaloe stone; of the stained-glass windows, that in the apse is by Mr. Douglas Strachan, the others are by Mr. Louis Davis; Mr. Hayes executed the stone carving, and Messrs. Clow the carved oak panels and stalls; the stall plates, of enamel, are by Mrs. Traquair, the wrought-iron gates by Mr. J. Hadden.

University of London, University College: Heating and Ventilating Engineering.

The course of heating and ventilating engineering at University College is intended for students having a sound elementary knowledge of mathematical science, and intending to specialise in the practice of heating and ventilation. The course includes:—Z 1. Preliminary public course of lectures on "The Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer." Z 2. Course of lectures on the detail of the subject. This course comprises discussion of the application to the problems of heating and ventilation of the principles of science, and includes such subjects as the following:—Properties of air, water, and steam; theory of heat, conduction, radiation, convection; theory of flow of fluids, air, water, steam; transmission of heat through walls, windows, doors, roofs, etc.; emission of heat by radiators and pipes under different conditions; combustion of fuels, quantities of air, and temperatures attained under different conditions; boilers and chimneys—the principles of design, construction, and economy; distribution of heat, principles of water circulation, high pressure hot water, principles of steam circulation; application of the theory of the flow of water and steam in pipes to the determination of pipe sizes, (a) natural circulation, (b) forced circulation; descriptions of the various systems of forced circulation and the calculations for them; heating by warm air, stoves, fireplaces, gas, and electricity. Z 3. A course of laboratory instruction, illustrative of the above subjects (Z 2). Experimental research for those students competent to undertake original work under the direction of the lecturer will continue throughout the session. At the end of the second term, a tour in Germany will be arranged to inspect important installations there. The tour will be under the guidance of the lecturer, Mr. Arthur H. Barker, B.A., B.Sc., to whom application for further particulars should be made.

Commercial Failures.

According to *Kemp's Mercantile Gazette*, the total number of commercial failures recorded in England and Wales during the week ending Friday, July 14, was 133. The failures recorded during the past week included the following trades, and for comparison we give the number in each in the corresponding weeks in 1910 and 1909:—

	1911.	1910.	1909.
Building and timber trades	21	23	12
Hardware and metal trades	2	7	5
Iron and steel trades	4	3	—

National Town Planning and Housing Association.

Mr. H. R. Aldridge, Secretary of the Association, has organised the arrangements of a visit to England of sixty representatives of municipalities of nine European countries—Austria, Belgium, Denmark, France, Germany, Holland, Italy, Norway, and Sweden. The party arrived in the course of this week, and will visit the Hampstead Garden Suburb, the Housing Exhibition at Gidea Park, Romford; Bourneville, the Rowntree model village at Earswick, Woodlands Village near Doncaster, the garden suburb at Hull, and other places.

William Penn Memorial.

The memorial tablet which the Pennsylvania Society of New York have just erected in the Church of All Hallows Barking, by-the-Tower, is executed in bronze after a design by Messrs. McKim, Mead, & White, of New York. Penn, who was born in his father's house on Tower hill, was baptised in the church on October 23, 1644.

"FELDENHURST," BOXMOOR, HERTS.

The residence of Mr. Herbert Smith, B.A., is erected upon a 2-acre site, sloping towards the west and facing the nine-hole golf links of Shothanger Common. The site is 500 ft. above sea level, with extensive views in the direction of Ashridge Park, preference being given to view rather than aspect; the principal rooms face west. The drawing-room has also a south and east view. A feature in the planning of the kitchen quarters is a baker's brick oven, adapted to modern use from the old mediæval type.

Both the house and stable were originally contracted for, circumstances, however, necessitating the completion by day-work under the architect's supervision. The principal sub-contractors were Messrs. Martyn & Co., of Cheltenham, oak chimney pieces; Messrs. J. P. White & Co., of Bedford,



"Feldenhurst," Boxmoor, Herts.
Mr. A. F. Bullock, A.R.S.A., Architect.

entrance gates; Mr. G. Jaggard, of Bushey, for joinery and staircases; Mr. Woodley, Hemel Hempstead, for sundial, stone, and marble work, and Messrs. Martin Van Straaten for tiles. The Standard Range Company, Ltd., provided the Burkone fires and specially cast the interior grate to dining-room, together with the patent casement fasteners, both latter designed by the architect.

The walls are 2-in. Ellistown red facing-bricks, with hollow filled with Hygienic rock composition, exposure to continuous north-east and south-west driving rains requiring careful construction. The oriel window on first floor is the owner's study, and from the flat above an extensive view is obtainable and fine sunsets are to be seen. Both hanging and roof tiles are local Bedfordshire.

The architect is Mr. Albert E. Bullock, A.R.I.B.A.

BOOKS.

The County Churches of Cambridgeshire and the Isle of Ely. By C. H. EVELYN-WHITE, F.S.A. (London: G. Allen & Co. 2s. 6d.)

We have already reviewed the earlier of the volumes of this series, and feel sure that this one will reach a still larger public, since it will appeal not only to the ordinary resident and visitor to this district, but also to Cambridge 'Varsity men, past and present. The illustrations (24 in number) are good and well chosen. The arrangement of the churches in alphabetical order is convenient, and the amount of information crowded into the limited space is extraordinary. The author seems to have noticed everything of interest in the different churches he has visited. Nevertheless, his anxiety to do this has caused his style to resemble notes rather than a narrative. This has a rather unpleasing effect. We think it was a mistake to include references to modern churches except when these simply replaced old ones. The view of the Allington Monument (Jacobean) at Horeheath is very pleasing, and in this, as in several other cases, the author has given us a happy variation from the usual type of selection. These are often merely exteriors taken from some distance, and therefore of little value archaeologically.

We regret that there are no brasses illustrated. The brass-rubbing fraternity is very strong at Cambridge, and Conybeare's Guide is largely purchased simply because of the useful list of Cambridgeshire brasses with illustrations, which it has as an appendix. Since in none of the volumes has a single illustration of these occurred, we cannot help wondering whether the publishers think them

not desirable. If so, we consider it a pity, as they are of the greatest value for showing the dress of the period. The author's severe condemnation of ruthless restoration, supporting, as it does, the opinions of the previous writers in this series, cannot fail in time to affect a great alteration in the minds of those who have charge of our ancient parish churches.

Is it too much to ask that every vicar should purchase the volume in which his

church is described. If this were done, we should soon cease to hear of old churches destroyed or "restored" out of existence.

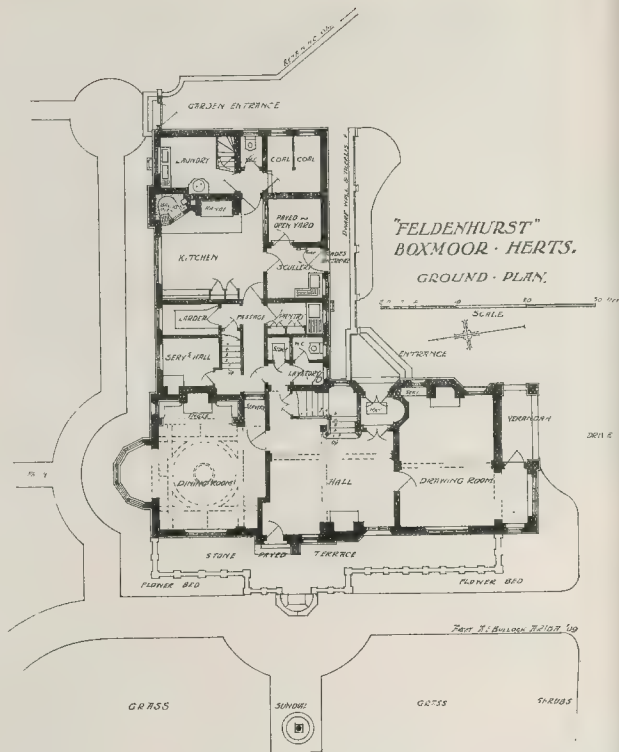
The Architectural History of Glasgow Cathedral. By T. L. WATSON, F.R.I.B.A. (J. Hedderwick & Sons, Glasgow.)

In a slim pamphlet of thirty-one pages Mr. Watson gives the "Autobiography of a Cathedral," or, in other words, he makes the building itself yield the history of its growth, which is unrecorded in any written documents. There may be some room for differences of opinion in regard to the very detailed conclusions, which he reaches from an examination of the existing building, but there can be little doubt as to the soundness of his general results.

Only a portion of "St. Mungo's work" forms the subject of this monograph, namely, the choir erected during the episcopates of Walter, Bondington, and Wishart, and the prosperous reigns of Alexander II. and III., for though the nave was carried on "somehow during the XIVth century—then the towers and adjuncts"—amid bloodshed and strife, "the autobiography is clear and legible only so long as the workers kept line and step with their English brethren; so long, that is, as we have the firm and broad basis of English and European archaeology to found upon. From the end of the XIIIth century the regular and consistent development of the architecture of the Cathedral ceases."

In the period defined the author, taking the mouldings of the vaulting ribs as a clue, a method which he makes very clear by means of admirable coloured diagrams, distinguishes five stages of building, which he sums up thus:—

"Begun by Bishop Walter, just 700 years ago, we have seen his temporary chapel completed about 1220. Continued by Bondington, the walls and pillars of the lower church, with the aisle vaulting and, as we believe, one bay of the middle vault, were finished about 1240. Ten years later the upper aisles were reached, the north aisle first, the eastern vault next, and the south aisle last. By 1260



"Feldenhurst," Boxmoor, Herts.

Mr. A. E. Bullock, A.R.I.B.A., Architect.

the whole main structure of the choir was completed, and the builders returned to the unfinished lower vault. By 1270, or soon after, the lower east vault and the transept stair vaults were finished, and the wide openings left at each end of the eastern aisle and in the east wall became graceful lancet windows. By 1280 the choir was unfinished."

In the course of his searching analysis Mr. Watson throws interesting side lights on the methods of the mediæval builders. He explains the order of the construction by the exigencies of the building works. For instance, the vaulting of the middle compartment of the choir crypt was, he believes, delayed till the upper aisle vaults and the clearstory were finished in order to permit of the hoisting of the building material direct from the floor. Other points in the curious changes introduced into the design at various stages as it proceeded are explained by the progress in the science of vaulting between the time certain piers were built with their springers and the moment when their vaults were added; others, again, by variations in ritual. For fuller detail the reader is referred to Mr. Watson's most suggestive study.

Highways and Byways in Cambridge and Ely. By the Rev. EDWARD CONYEBARE. With Illustrations by FREDERICK I. GRIGGS. (London: Macmillan & Co. Ltd. 6s.)

THE chief object of the author of this admirable little book has been to introduce his readers "to the unique interest" of Cambridge and Ely, "with special regard to the points most closely passed over in guide-books," and a perusal of the work affords ample evidence of the successful attainment of this object. A considerable part of the volume is devoted to Cambridge and its colleges, the author writing pleasantly and with discriminating enthusiasm of the architectural and other features of the town. In the same spirit he writes of Ely, as well as the villages, hamlets, and "byways" mentioned in the volume, the work forming an excellent, handy, and reliable guide of special, though not exclusive, interest to architectural and archaeological readers. It is sufficient to say of the drawings by Mr. Griggs that they charmingly illustrate some of the buildings and places described, and materially assist in enhancing the value of an admirable work.

Architektonische Handzeichnungen alter Meister. Herausgegeben von Architekt Dr. Hermann Egger. (Verlag für Architektur und Kunstgewerbe Friedr. Wörlum & Co. Vienna and Leipzig. 100 marks.)

EVERYONE who has gone through this portfolio of drawings must confess himself greatly indebted to Professor Egger and to his publisher. For, various as the selection may be, there is not a single drawing which fails to interest, and they are all most excellently reproduced to a large scale and appropriately mounted on a blue-grey paper. As reproductions of old drawings we know of none in which it has been sought more carefully to preserve the spirit and tone of the originals. The majority of the drawings are preserved in the Royal Library at Vienna, and the others are taken from other collections, public and private, of the same city. In the provisional portfolio before us (the first volume will consist of sixty plates) there is no attempt at chronological classification or arrangement of subjects. The artists are of all countries, the period covers any date from the beginning of the XVth century to the beginning of the XIXth, and the examples comprise anything from the apse of a Gothic church to the lay-out of the park at Schönbrunn. But the unity of the collection is preserved by the merit which distinguishes every plate, as well as by the fact they all in some sort express an architectural idea. The draughtsmanship, as a whole, is remarkable; it is, nearly always, sufficiently precise for an architectural drawing, while possessing a freedom and individuality which give each plate an independent artistic character. How many of these designs have been carried into effect we have not the time to investigate; the editor will no doubt clear up this point in the text which is to follow. The authorship of the designs is in some cases unknown, and the drawings are attributed to various Continental schools. Among those which are definitely attributed are Bernardino Poccetti's (1542-1612) design for a window decoration;

Martino Lugini's (second half of the XVth century) for the façade of a church; a sketch for the ceiling of a church by Alberti; a series of sketches on one plate by Bernini of the upper portion of his well-known Baldachino at St Peter's; two interesting drawings of churches at Rome, by Girolamo Rainaldi (1570-1655) of a more complete architectural interest than many of the other drawings; two examples of Bibiena's brilliant rococo designs for stage scenery; a fountain at St. Cloud, by Le Blond; a perspective view of a ballroom designed by Jean François Chalgrin on the occasion of Louis XVth's marriage with Marie Antoinette; a fine imaginative conception, in monumental classic, by Hubert Robert (1733-1808) (which we illustrate); and finally we have two examples of the work of the Viennese architect, Hetzendorf von Hohenberg, both of which have been carried into execution.

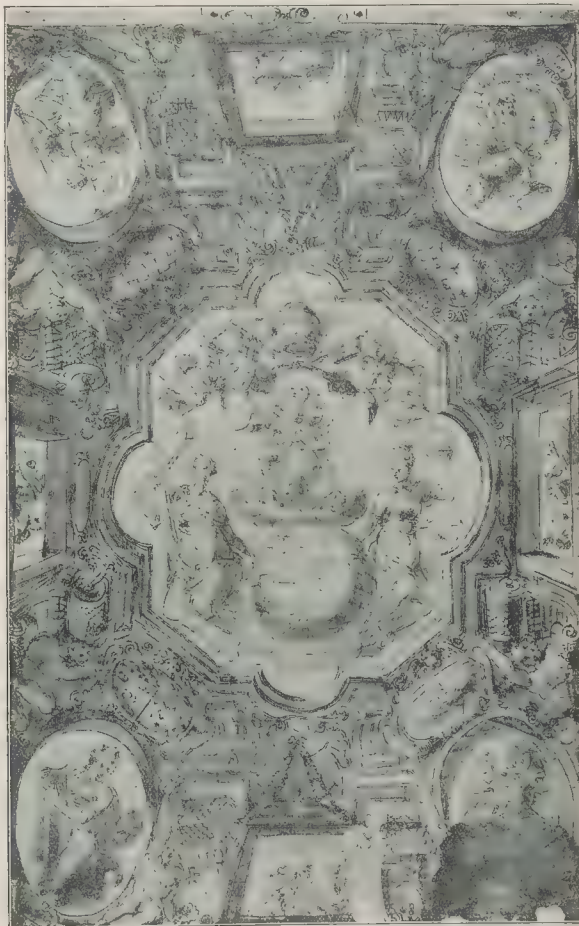
There is no need, therefore, to dwell upon the historic interest of this collection: so far as architecture and architectural decoration is concerned, it covers many styles, and in some instances it touches perhaps rather style in the making than in the more complete expression which our architectural writers and guides have taught us to accept. But we may believe that the value of the collection is not merely antiquarian. It is, indeed, living and present. These great designers of the past exist before us again in these drawings; they are articulate, and their voices

bridge time, and whether we approve altogether of their work or not, from the point of view of individual taste or prejudice, is a small matter compared with this communication of spirit with the choice assemblage which Professor Egger has brought together, and which speak to us, not in the terms of history, but of living men, who sought to express themselves in the artistic vocabulary which we call design.

Stories of the Spanish Artists until Goya

By SIR WILLIAM SPURLING-MAXWELL. Selected and arranged by LUIS CARREÑO. With introduction by EDWARD HUTTON. Pp. 309. Thirty-two illustrations (eight in colour). (London: Chatto & Windus. 1910. 7s. 6d. net.)

"ARTISTS," in this case, as too often, means painters only, or those artists who, though they may have done work in other directions in the spacious fashion of the Renaissance, were yet known chiefly for their pictures. Which is a pity, especially in dealing with the art of Spain. Spain is, or was, not a land of great painting. It is in her sculpture, which, though never fine, is plentiful and powerful, romantic and yet realistic, even in decline grandiose and "large," and in her architecture that old Spain is chiefly glorious. There should have been no great difficulty for the purposes of a book such as this, which seeks only to present the main incident in each life, in noticing the others. Spain has



Sketch for a Ceiling Decoration. By Giovanni Alberti (1558-1601).
(From *Architektonische Handzeichnungen alter Meister*.)

not lacked her Vasari, whether you consider him to be best represented by the diligent Pacheco, a contemporary of the Italian's later years, or by the equally diligent and more advantageously timed Ceán Benúndez (an account of whose life is included in this book), who died in 1829. But perhaps we find fault with the authors (to what extent each was author is not made clear) because their book is not what it was never intended to be. It is because we feel bound to deplore wherever we meet it the limitation of the meaning of "artist" to those who are concerned only with graphic delineation and the painter's craft.

These short biographies give the principal facts and a fair sprinkling of anecdote of the lives of some fifteen painters, beginning with Morales, somewhat in the manner of Vasari, though lacking the charm of Vasari's more intimate narrative, even as given in the "Stories from Vasari," a companion volume to the present one, issued a year or two ago. Critical pronouncements are interspersed, which are not of such quality as to warrant Mr. Hutton's assertion in an otherwise first-rate preface that "this little volume makes a first-rate introduction to the Spanish school of painting." Besides, as we will point out later, it does not begin at the beginning and continues one step further than the end. A much better introduction really and of much greater interest also to those who know anything of Spanish work and of Spain, and of much greater value, is Mr. Hutton's own critical preface to this book. His case against the Church—that Church which made Spain, without which Spain would not have been in existence at all, in its own image, and then bound her rigorously lest she should depart from that way—is clear, and has the large historical sweep.

The regard in which Spanish art has for a long time—from perhaps before the influx of spoil from the Peninsular War—been held in this country has given rise to a conception of Spain as a land of art, analogous, though secondary, to Italy. This is a misconception. With the exception of a few outstanding personalities the race has betrayed, or, according to Mr. Hutton, has not been permitted to display, much of the gentler sympathy and desire of beauty for itself which are the chief ingredients in what we call artistic sensibility. In the classification "northern" and "southern," into which anything almost, and certainly any country can be put, the greater part of Spain comes under that of the north. In the Spanish character there is a hardness, a preoccupation with actuality, and the material aspect of things, even of spiritual things (again, according to Mr. Hutton, due to the coercion of the Church), which consents explicitly with the distinct outlines and often even garish colouring of the land itself. The phrase of the tourist advertisement, "Sunny Spain," though literally accurate and attractively alliterative, is yet wrong if it conveys an idea of a people careless and lightly emotional. Emotional, certainly, but with a seriousness, a moral intent, and dramatic intensity which the term southern is not easily made to fit. And so we find to begin with—although there was a great Iberian art it has little to do with this story—before Morales it is a cutting from the Flemish plant, rendered accessible by political circumstance, with its flower of serious feeling in leaves of meticulous veracity, which grows so vigorously as the art of Spain. Flemish art was widely appreciated, and widely practised by many whose names are not preserved, and it reached some height in the hands of Dalmau, for instance, and Alejo Fernandez, of Cordova—both serious omissions from the volume before us.

Then comes the wave from Italy, a little "late," swamping the Flemish growth which was altering Spanish nationality, and by its premature liberation of brushes which could not use without licentiousness the freedom conferred, did infinite harm. Gradually the serious uncompromising spirit of Spain again asserted itself. In Morales, the monk who seems to have been destined first to uphold it, under the patronage of Sta Teresa herself, so devoid of adventitious circumstance to persuade him, does his environment seem to have been. We find it in Il Greco, errant Venetian, and, always excepting Velasquez, the nearest approach to an artist *sans arrière pensée* which Spain can boast. In Ribera

also, *il Spagnoletto* of Naples, as powerful an invader of Southern Italy as the Spanish King himself, and better remembered; a scoundrel, artistically quick from Hades *vid* the Garden of Gethsemane, and the greatest painter which Spanish culture of Spain produced. We say this advisedly, because Velasquez, although his earlier work—one or two examples of which were to be seen at the Grafton Gallery a year or two ago—shows the influence of Ribera, cannot be said in any way to have been produced. He was a miracle, which might more properly have happened some years ago in France, or in England to-day. Of Zurbaran, Lord Leighton said that he was the "completest representative in art of the genius of his race," and with him, despite Mr. Hutton's disparagement, we hold. With his judgment on Murillo, which is the current one of distaste and contempt, introduced by a disarming avowal of complete lack of sympathy, we need not disagree. It is an artist who, when the present reaction against the facile admiration of the multi-centuries has spent itself, will be given his "place in art" and there let lie. Concerning Goya, whose life is, not very logically, included in this book, Mr. Hutton says nothing at all. And rightly, for Goya initiates modern art; initiates, too, the freedom of art in Spain—that freedom which has enabled Zuloaga, Corredora, and de Zubiaurre to give earnest of the persistence of Iberia in the race.

CORRESPONDENCE.

St. Paul's Bridge.

SIR.—The three strong points alleged against the bridge being in axis with St. Paul's Cathedral and in favour of the City's proposals are—First, the traffic; second, the danger to the Cathedral by making the tramway subway; and third, that a skew bridge will necessarily have to be in steel.

Regarding the first, you, sir, have proved that the true traffic line is not as provided for in the official scheme. So far as the second is concerned, we venture to express the opinion that modern architectural skill could overcome the difficulty, and we base such opinion on our own experience in connexion with the old Admiralty building. When the proposals were before Parliament to erect Blocks 1 and 2 of the extensions, certain critics sent a round robin to the Members of the House of Commons stating that the stability of the old building would be endangered, but the then First Commissioner, by the advice of Sir John Taylor, K.C.B., and ourselves, traversed such statement, with the result that we not only underpinned the walls next Block 2, but subsequently took down the walls adjoining Block 3 to over 30 ft. below the surface and into the London clay with perfect success. Perhaps the third objection requires little comment in these days of reinforced construction.

LEEMING & LEEMING.

Gidea Park.

SIR.—The extremely unsatisfactory nature of this competition is daily becoming more obvious, and it is surely time that the Institute made some pronouncement upon the desirability or otherwise of architects entering into competitions which involve actual building as well as paper designs.

In this case competitive houses to the value of 60,000*l.* (approximately) were erected by architects on "spec," and in many cases have been financed by them on ground rented or bought from the company who instituted the competition.

The capitalised value of the ground rents created amounts to about 20,000*l.*

When the buildings were erected they were thrown open to the public as an exhibition, the company charging the architect competitors 5*s.* per house per week for opening them in the morning and shutting them at night, and 4*s.* per week for watering the gardens, the cost of the water excluded. This means that the competitors are paying the company at the rate of over 3,000*l.* per annum for these trifling services.

On February 22 the company wrote to each competitor offering to act as agents for the

sale of the houses, and to place at their disposal an expert staff for this purpose, and, needless to say, for a handsome consideration.

The climax was, however, reached when the following letter was received by the competitors:—

"July 12, 1911.
DEAR SIR,—At a meeting of the Directors of Gidea Park, Ltd., at this office to-day, I was instructed to write and draw your attention to the opportunities now afforded by the hundreds of visitors to the estate, of which many builders are not at present availing themselves. It is impossible for the staff of the estate office to act as guides to more than a very small percentage of the visitors, and those builders who have no representatives to show their own houses (especially on Saturdays) are, in our judgment, missing a great opportunity of doing business.

One exhibitor alone on the estate has, by keeping a representative in his exhibition house, already obtained orders for twenty-nine repeats of the house on this estate and elsewhere.

We therefore urge upon you the desirability in your own interests of arranging for some personal attendance at your exhibition house.

Yours faithfully,

(Signed) R. DE JERSEY,

'Sales Manager.'

The exhibitor who has already sold twenty-nine houses is to be congratulated on the results of his speculation. Personally, I hope he will sell another twenty-nine, but is it really advisable for architects to become speculating builders in addition to their already multifarious activities? The use of the word "builder" in place of "architect" in the foregoing letter is significant.

The company have, no doubt, done extremely well, and must be laughing up their sleeves at the 140 odd architects who bought their land and built up their estate for the paltry consideration of 1,050*l.* in prize money, and the promise to buy a few of the houses. Could not the assessors get better terms than these? There are various other curious and novel points in the conduct of this competition which ought to be investigated, but which it would take too long to set out here.

I am not a competitor or interested financially or otherwise, except by the extraordinary apathy of the powers that be in not inquiring more closely into the conditions and probable effects of such a revolutionary competition.

MATRICES E. WEBB.

Questions for Builders.

SIR.—With reference to the letter in the *Builder* of July 7, over the signature of "Builder's Manager," one cannot help admitting that building employers have much to contend with in their dealings with various bodies and individuals, though the London Master Builders' Association is constantly and earnestly endeavouring to remedy such evils as are brought to its notice, whether those evils result from thoughtless or tyrannical action on the part of the legislature, public bodies, building owners or workmen.

The Council of the Association meets frequently and deals with questions of difficulty or moment as they arise, but it cannot be denied that, in the face of all its strenuous efforts, many of the burdens the trade is called upon to sustain are thrust upon it not so much by the action of others as by the action of some builders who are not members, and who are ever ready to grasp at what may appear to be to their own personal advantage, utterly ignoring what is being done by the Association, and thus bringing severe penalties upon the trade generally by their want of unity.

Such firms are a standing danger to themselves and to their fellows. They open doors for the unscrupulous, encourage unreasonable requirements from architects, and breed disquietude among workmen. They take no part in bearing the cost of making such reasonable arrangements which are for the general good of all parties, nor do they attach to working rule agreements the importance they deserve. They exercise a free hand in all their dealings, and would be the first to cry out against the enforcement of such discipline as that to which workmen have to submit from their unions. When all employers adopt "unity" as their guide, an immediate remedy for many of the existing crying evils will be found.

The "Builder's Manager" refers to the practice of the City of Westminster with regard to its unreasonable demands for hoardings and retention money. These facts are well known and generally condemned. A

reputation from the Association waited upon the Committee of the Westminster City Council, and spoke very strongly against the practice, but without avail.

Let builders take the present condition of things to heart, and adopt the only step I can suggest that will lighten their burdens, viz., the strengthening of their Association and confidence in those at its head.

I may say in conclusion that the London Master Builders' Association includes practically all the prominent building firms in the Metropolis, and I would like to point out that the assistance of the firm of the "Builder's Manager" would be more appreciated if it would put its shoulder to the wheel and help to bring about that unity which the "Builder's Manager" evidently has in his mind, and which I think to be most desirable.

EXPERTO CREDE.

Shrinkage of Joinery in Hot Weather.

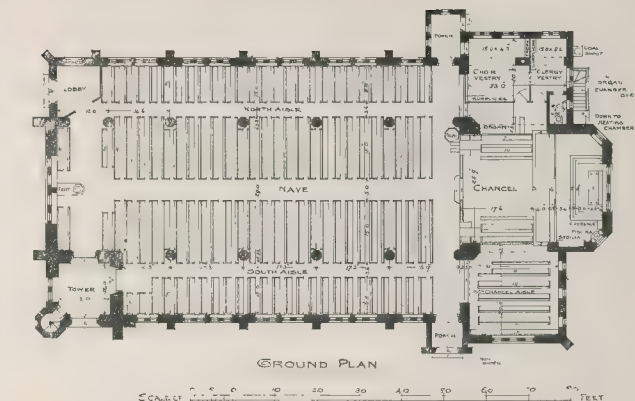
SIR,—I have no doubt most builders are being called upon to accomplish the impossible and manufacture joinery that will not shrink during this hot weather. A little experience of my own may therefore be of interest. Five years ago I built a motor shed, the doors of which were of ordinary yellow deal, framed and braced, and filled in with $\frac{3}{4}$ in. matchboards in narrow widths. These have stood airily well, there being no shrinkage to excite comment. They were repainted last Easter, and, of course, properly stopped. To my astonishment, just lately these boards have shrunk and the joints opened in one or two places sufficiently to expose the unpainted surface of the tongues. If this can happen after five years of seasoning, what possible chance is there, under modern rapid conditions of building, of being able to produce the unshrinkable joinery architects so keenly insist upon? I may mention that the doors face north-east, so that they do not experience the full strength of the sun's rays.

W. F. WALLIS.

INTERCOMMUNICATION COLUMN.

Artificial Drying of Timber.

SIR,—We shall be glad if any of your readers can give us any information with



New Church of St. Leonards, Bedford.

Mr. George P. Allen, Architect.

regard to the advantages or disadvantages of artificial drying timber, etc., also the best system.

Drainage of Premises.

SIR,—I should be glad of advice on the following matter. In connexion with the drainage of some premises in Poplar I am being called upon to connect with one of the main outfall sewers laid down by the old Metropolitan Board of Works. As this main outfall sewer is down a depth of 33 ft., the expense of such a connexion is very great, and I should be obliged if you will inform me what are my legal rights in such a case. A local authority having failed to provide an efficient and convenient drainage scheme for their area, can they compel a ratepayer to connect his drain with a main outfall sewer of a bigger authority?

J. E. BEAUMONT.

CHURCH OF ST. LEONARDS, BEDFORD.

THIS new church is to be erected in a newly built part of Bedford; the materials to be used are: The exterior of Crowborough blue bricks, with Weldon stone and red-brick dressings, and local tile roofs. The interior of bricks plastered, nave arcades of Weldon stone, floors of wood block, leaded-light windows. The church is to be heated with radiators, and lit with electric light. The plan shows a tower at the west end, nave, aisles, south chancel aisle, chancel, organ chamber, and vestries. The completed church to hold over 800 sittings, and to cost 7,000*l*. It is proposed to build half the nave, aisles, chancel, etc., for 3,800*l*, and to accommodate 500 sittings. Mr. George P. Allen, of Arundel-street, Strand, London, is the architect.

NEW CHURCH OF ST. LEONARDS
BEDFORD



EDITORIAL SUMMARY.

Our leading article deals with the Edward VII. Memorial, and points out the difficulties involved in the site now proposed.

Our second article is on the St. Paul's Bridge Bill, some points in regard to the evidence of the architects who appeared before the Select Committee being considered (p. 60).

Notes (p. 60) contain: "Ozone Water Sterilisation"; "The New Rooms at the National Gallery"; "The South Kensington Site"; "East London Memorial to King Edward"; "The Natural History and the New Science Museums."

"The London Salon" is the title of an article given on p. 61.

An illustrated article on "The Chapel of the Order of the Thistle, Edinburgh," will be found on p. 62.

An article on the annual exhibition of students' work of the Liverpool School of Architecture is given on p. 64.

An illustrated article on "Precious Metal-Work" will be found on p. 66.

Book Reviews (p. 68) include: "The County Churches of Cambridgeshire and the Isle of Ely"; "The Architectural History of Glasgow Cathedral"; "Highways and Byways in Cambridge and Ely"; "Stories of the Spanish Artists until Goya."

Correspondence (p. 70) includes: "Questions for Builders"; "Shrinkage of Joinery in Hot Weather"; "Gidea Park"; "St. Paul's Bridge."

The Monthly Historical Review (p. 73) includes: "Forgotten Architecture of the Far East" (illustrated); "Exhibitions at Rome"; "Ancient Monuments and Historic Buildings"; "Wallpaintings in Surrey Churches"; and Notes.

The Building Trade Section (p. 79) consists of: "The Clerk of Works"; "A London Carpenter Four Hundred Years Ago"; "United Builders' Alliance"; "Government Contracts"; "Projected New Buildings in the Provinces"; "Applications under the London Building Acts," etc.

In Legal Column (p. 83) will be found notes on: "The London Building Act: Party Walls."

Law Reports (p. 84) include: "Damage by Sewage Flooding"; "Action by Contractor against Building Owner."

MEETINGS.

FRIDAY, JULY 21.

Architectural Association.—Annual exhibition of students' work. 3 p.m. to 6 p.m.

SATURDAY, JULY 22.

Institution of Municipal Engineers (Eastern District). Annual meeting at Goode's Hotel, Marine-parade, Yarmouth. 2 p.m. A paper, "Construction, Maintenance, and Repair of Highways," by Mr. W. Astley Norris, Surveyor to the Swaffham Urban District Council, will be presented for discussion.

Edinburgh Architectural Association.—The annual excursion will take place to St. Andrews.

MONDAY, JULY 24.

Builders' Beneficial Institution.—Annual general meeting of the subscribers and donors. 4 p.m.

MONDAY, JULY 24, TO SATURDAY, JULY 29.

The Royal Sanitary Institute.—Congress at Belfast.

TUESDAY, JULY 25, TO WEDNESDAY, AUGUST 2.

Royal Archaeological Institute. Summer meeting at Cardiff and Tenby.

WEDNESDAY, JULY 26.

United Builders' Alliance. General meeting at the Athenaeum, Muswell Hill, N. 8 p.m.

THURSDAY, JULY 27.

Nottingham Architectural Society. Annual excursion to Windsor.

Guild of Architects' Assistants.—Visit to the Royal Academy of Music, Marylebone-road, N.W.

SATURDAY, JULY 29.

The Institution of Municipal Engineers.—Meeting at Edinburgh.

Midland district and special meetings to be held at Handsworth, near Birmingham.

BOOK RECEIVED.

REINFORCED CONCRETE BEAMS AND COLUMNS. By W. N. Twelvetrees. (London: Whittaker & Co. 6s. net.)

COMPETITION NEWS.

Deptford Central Library.

The Public Libraries Committee of Deptford Borough Council report having been in negotiation with the President of the Royal Institute of British Architects (Mr. Leonard Stokes) with regard to the appointment of an assessor to judge the designs which have now been received for the erection of a central library. Mr. Stokes informed the Committee that he would be prepared to judge the designs himself, and the Committee has appointed Mr. Stokes to carry out the adjudication.

Rochdale Infirmary.

Mr. Alexander Graham has been appointed assessor for the limited competition which will shortly be instituted in connexion with the King Edward extensions to the Rochdale Infirmary. Provision will be made for forty-eight beds, and the cost is estimated between 15,000*l.* and 17,000*l.*

Seale-Hayne College (Agricultural and Technical), Newton Abbot, Devon.

The assessor's award in the competition for the Seale-Hayne College buildings is as follows:—First prize, Design No. 17 (Messrs. W. H. Mitchell, Son, & Gutteridge, 9, Portland-street, Southampton); second prize, Design No. 8 (Mr. Josias Beare, A.R.I.B.A., 42, Devon-square, Newton Abbot); third prize, Design No. 31 (Messrs. Crouch, Butler, & Savage, 39, Newhall-street, Birmingham).

MAGAZINES AND REVIEWS.

The *Art Journal* this month is mainly devoted to decoration and furniture and the articles on the "Chinese Taste" in English decoration, Holkham, tapestry weaving in England, Chinese porcelain, and silver candlesticks are all illustrated from examples of exceptional interest. The designer and the collector will regard this issue as one of notable value.

The *Burlington Magazine* has an article by Mr. Aymer Vallance on the Flemish glass panels taken from Kilburn Grange when demolished in 1910. Other articles on a family of Flemish painters, the French mission to Chinese Turkestan, and Bartolomeo Vivarini deserve attention.

In the *Connoisseur*, the illustrated article on "Antique Mirrors," by Mr. Egan Wren, dealing mainly with designs of the XVIIIth and XVIIIth centuries, is of special interest to the architect, while that on "Anders Zorn" gives an outline of the work of that artist. We cannot congratulate this magazine on the increased use made of three-colour illustrations. These are rarely so successful in reproducing the quality of a picture as a good monochrome print.

In the *Nineteenth Century* will be found an article on "The Railways of India," by Mr. Murray Robertson, in which the question of railway developments in the past and the future is reviewed from the points of view of commercial and military requirement, policy and finance. Mr. Herbert G. Jenkins in another article shows how he has been enabled to trace the position of the grave of William Blake in Bunhill Fields. This grave was used for no less than eight burials, one above the other, and is at present immediately under one of the footpaths.

The *National Review* contains a brief note on the building of Prior Park, Bath, in the introductory paragraphs of an article by Mr. Austin Dobson on Ralph Allen and the more distinguished guests he entertained at his great mansion. The contribution entitled "The Rejected of the Academy" is a scathing criticism on the methods in vogue at Burlington House, which, it is claimed, justify the deposition of the Royal Academy from its official position. With regard to the Exhibition, it is suggested that the sixteen galleries should be apportioned among the chief art societies of the kingdom, and each society should enjoy absolute independence in the selection and arrangement of works in its own section.

ILLUSTRATIONS.

The Chapel of the Order of the Thistle, Edinburgh.



HIS chapel is designed by Mr. R. S. Lorimer, A.R.S.A., F.R.I.B.A., whose work, chiefly domestic, cannot be unknown to our readers. In the execution of his design he has enjoyed the loyal and intelligent co-operation of the craftsmen engaged, many of whom have been associated with him for a considerable time. The builder was Mr. John Kennedy (Colville & Co.). The structural oak work of the stalls, etc., was done by Mr. Nathaniel Grieve, the carving by Messrs. W. & A. Clow. The stone-carving was carried out by Mr. Joseph Hayes, Edinburgh. Mr. James Grieve acted throughout as clerk of works. The St. Andrew's window was designed and executed by Mr. Douglas Strachan, of Edinburgh. The other heraldic windows were made from cartoons supplied by Mr. Louis Davis, of Pinner, N.W. The enamel of the stall plates was designed and executed by Mrs. Traquair; their copper plates were prepared by Mr. Kirkwood, St. James-square, Edinburgh. The wrought-iron screens were executed by Mr. Thomas Hadden; all the mantlings were made and embroidered by Mrs. Drew, Comely Park, Edinburgh. Our photographs are by Mr. F. C. Inglis, Calton Hill.

FIFTY YEARS AGO.

From the *Builder* of July 20, 1861.

The Parthenon, Proposed, in Paris.

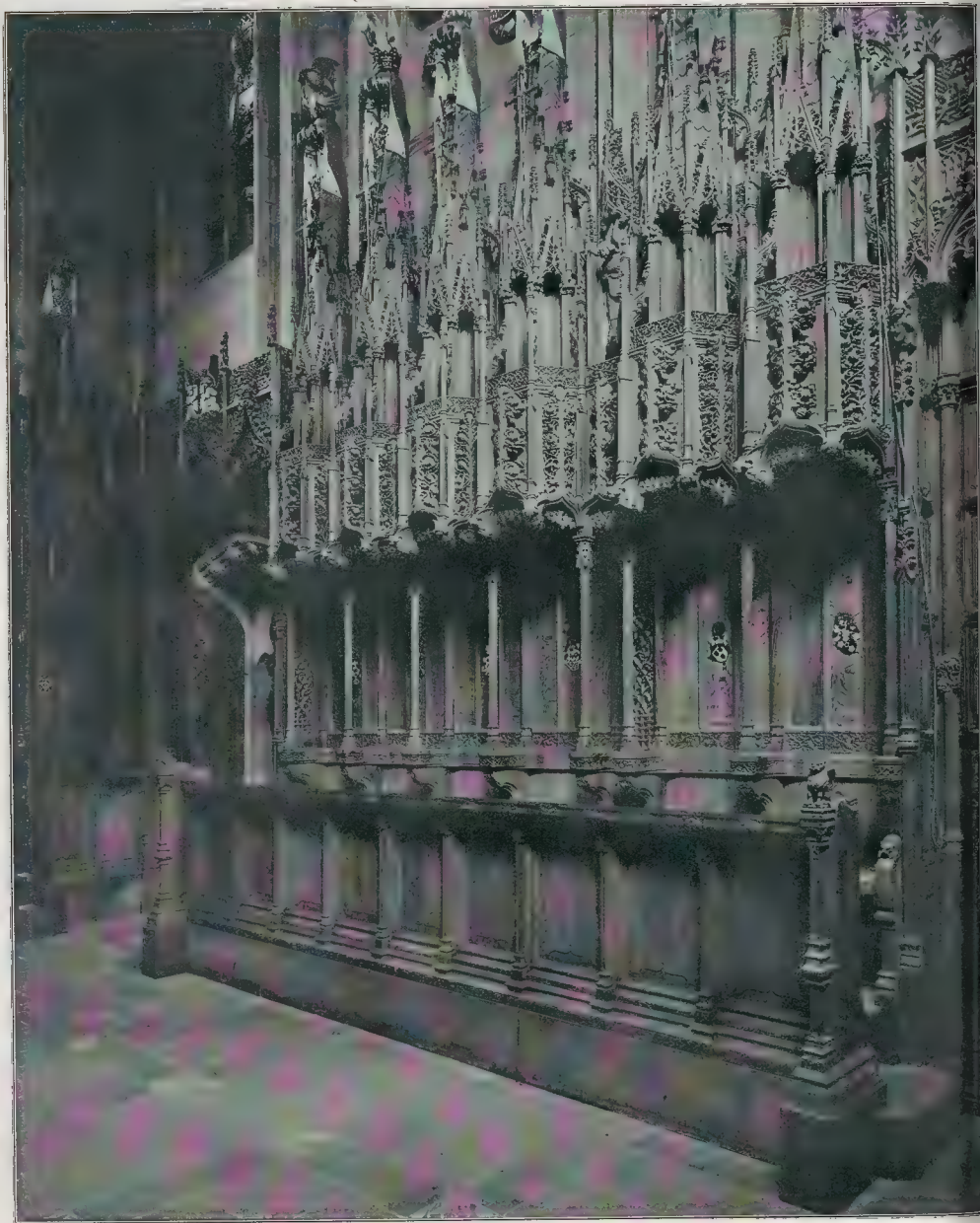
In one of our recent articles on matters in the French metropolis we intimated our disbelief of a report of an intention to clear away the hill of Montmartre, and expressed the hope that a passion for making things even and straight, which comprises what is one of the deductions to be made from the general merit of the improvements in Paris, would not extend to the deprivation of what affords one of the finest features of the capital. If a statement which has since appeared in *Le Siècle* be correct, and if a project which is mentioned be likely to be carried into effect, we need, on the matter first in question, have no further apprehension.

The asserted project is no less than one of a reconstruction of the Parthenon of Athens—that is, if we understand rightly, as the original was built, or in what is called a restored state.

If the report be correct we cannot but think the intention is not consistent with the position of the French in art. A noble work of architecture on the hill of Montmartre might add, like the Parthenon to Athens, a crowning glory to what is now almost as grand a city; but we do not see that this addition need be a copy of any ancient building; and for the credit of French art we hope it may not. The architects, M. Hittorf not the least, ought to disclaim connexion with the project. If there be any truth in the theory that competitions have for their aim the bringing forth of new talent, the notion of such a mode of selection of the architect of a "reconstruction" of the Parthenon has absurdity on the face of it.

BESTOWAL OF HONOURS.

Upon the occasion of his visit to Wales last week, the King conferred Knighthood upon Mr. William Goscombe John, R.A. (a native of Cardiff), who designed the insignia, executed by Messrs. Garrard, for the Investiture of the Prince of Wales. At Dublin Castle on July 12 the King invested Sir George Holmes, C.V.O., Chairman of Public Works, Ireland, as K.C.B.; Mr. F. W. Moore, Curator of the Royal Botanic Gardens, Glasnevin, as Knight; and Mr. C. A. Stevenson, Commissioner for Public Works; Mr. A. Robinson, Principal Surveyor of Buildings; and Mr. Henry Williams, Secretary to the Board of Works, were invested as Commander and Members respectively of the Royal Victorian Order.



KNIGHTS' STALLS.

Sprague & Co., Ltd. Printers, 4 & 5 West Harting St. E.C.

CHAPEL OF THE THISTLE, EDINBURGH.—MR. R. S. LORIMER, A.R.S.A., ARCHITECT.

THE BUILDER, JULY 21, 1911.

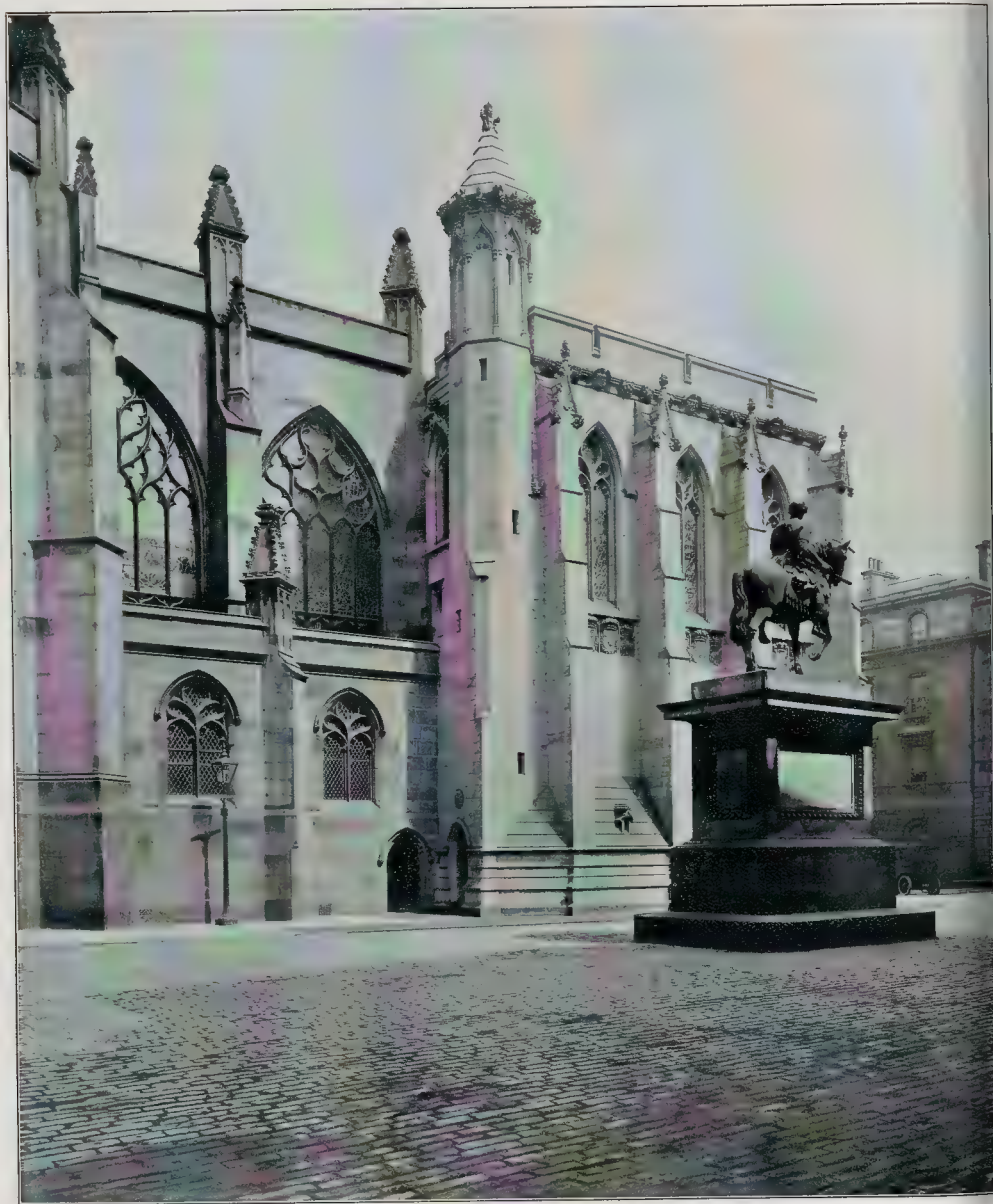


THE KING'S STALL.

Spence & Co., Ltd., Printers, 4 & 5 East Harrow St., E.C.

CHAPEL OF THE THISTLE, EDINBURGH MR. R. S. LORIMER, A.R.S.A., ARCHITECT

THE BUILDER, JULY 21, 1911.



SOUTH FRONT.

Spence & Co., Ltd., Printers, 4 & 5 West Harding St., E.C.

CHAPEL OF THE THISTLE, EDINBURGH.—MR. R. S. LORIMER, A.R.S.A., ARCHITECT.



EAST END.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

CHAPEL OF THE THISTLE, EDINBURGH. MR. R. S. LORIMER, A.R.S.A., ARCHITECT.

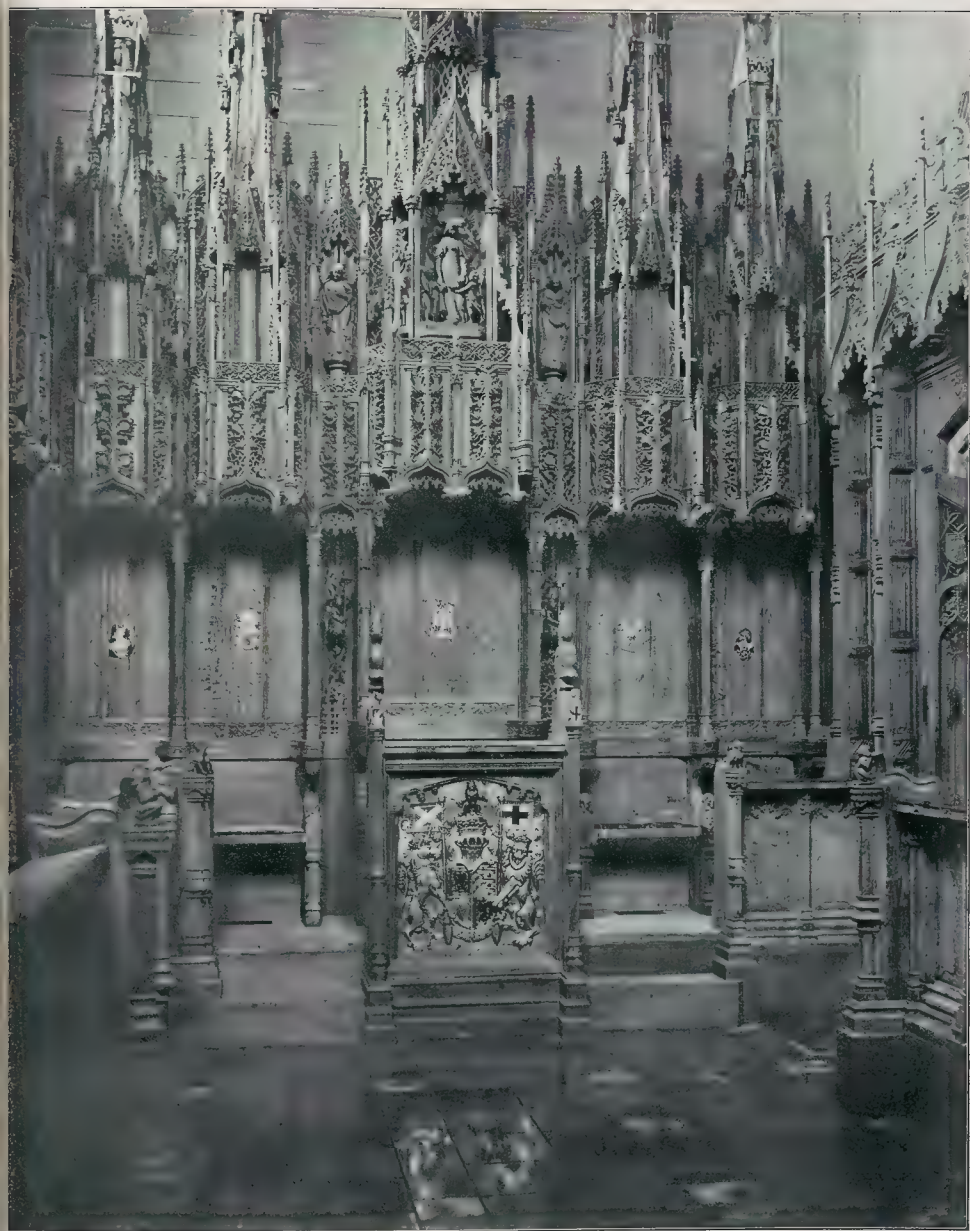
THE BUILDER, JULY 21, 1911.



THE EAST END AND CHAIR OF STATE.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

CHAPEL OF THE THISTLE, EDINBURGH.—MR R. S. LORIMER, A.R.S.A., ARCHITECT



DETAIL OF THE KING'S STALL.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

CHAPEL OF THE THISTLE, EDINBURGH—MR. R. S. LORIMER, A.R.S.A., ARCHITECT.

MONTHLY HISTORICAL REVIEW.

A FORGOTTEN ARCHITECTURE OF THE FAR EAST.

WHILE the art of the Farthest East has long been relatively well known in Europe, where on the first it aroused interest and exercised an influence, that of the less stant though still Far East, of the great peninsula which has to be circumnavigated in order to reach the coasts of China and Japan, has remained virtually a closed book all but specialists. The European Powers have been in contact with Further India at least as long as they have with China and Japan, for the relations of the Portuguese and Dutch with it date from the XVIth century, and those of France and Great Britain from the XVIIth, yet a sort of mystery has hung more or less over this vast and fertile land with its ancient history and civilisations. There is a certain ambiguity about all that concerns it which is reflected in its alternative name of Indo-China.

Owing to the constant struggle of conflicting races, their frequent and prolonged wars with each other and with neighbouring States, and the competition for supremacy between rival kingdoms, Further India never attained sufficient unity to create a distinctive and homogeneous civilisation which could make its influence felt abroad. Its lot has been rather to be influenced by its neighbours in religion, literature, and art, through repeated waves of immigration, through conquest, commerce, and missionary effort. As various peoples have not, however, merely adopted the customs and methods of others, they have adapted them and assimilated them to their own genius and their own purposes. The foreign elements grafted on to the native stock have been modified so as to assume a peculiar growth all worthy of study. The three greater territorial divisions of Further India at the present time—Burma, Siam, and Annam—are occupied by races who rose into importance in comparatively modern times—that is to say, in the second millennium of our era—at the expense of the former occupants. They are all of Mongol kinship, the Burmese deriving their origin from Tibet, the Annamese from Szechuen and Yunnan, and the Siamese from Tongkin. Among the races earlier in the field were the Mons, of uncertain origin, but probably akin to the Malays. This people was divided into two main branches, the Chams or Tyams and the Khmers, who between them ruled at one time or other a large part of the peninsula, especially its south-eastern portion. Champā, the Cham Empire, with its centre in the upper basin of the Mekong, more than once extended its sway into Siam and down to the coast of Annam, while Cambodia, the Khmer Empire, when at the height of its power, spread from its seat at the mouth of the Mekong as far as Pegu and Tongkin. These two kindred races were frequently at war. The Chams, whose greatest prosperity is reached in the first 400 years of our era, being most exposed to attack, were the first to enter into a long period of decline, till their final annihilation by the Annamese in the XVth century, when the remnants of the population took refuge in the mountains of Cambodia. The Khmers, or Cambodians, were introduced into importance in about A.D. 500, reached the climax of their power from the VIIth to the XIIth centuries, and then in their turn began to fall back before the invading Annamese and Siamese. They revived, however, as an independent State in 1863, when the declaration of the French Protectorate saved them from extinction. (All Further India received its civilisation either from China or India, Chinese influence

preponderating in the north and east, Indian in the south and west. The Chams and Khmers owed theirs almost entirely to Hindu settlers, merchants, and missionaries. Brahmanism in the form of both Vishnuism and Sivaism overlaid their primitive snake worship at an early time. Buddhism, on the other hand, took little hold upon them, but in later times Mohammedanism was introduced with greater success. From India, too, came both writing and art.

It is only of recent years that the artistic remains of these peoples have emerged from the oblivion which had overtaken them even in the land of their origin. It is principally to the labours of a series of French savants, working with the support of the French Government, that a knowledge of these interesting monuments has become available. A naturalist, Henri Mouhot, first visited the Cambodian ruins (1858-61), while M. Aymonier, a colonial official, followed up his researches (1880-5). By the creation of a French School of the Extreme East in 1898, under the control of the Académie des Inscriptions et Belles Lettres. M. Paul Dummer, Governor of French Indo-China, gave a sister institution to the older schools of Rome and Athens, whose function is to promote the study of the history, ethnology

and languages, archæology and arts of Indo-China and neighbouring lands. Under its auspices more systematic researches have been carried out, especially by Messrs. H. Parmentier and E. Lunet de Lajonquière, resulting in the publication in several instalments of a great "Inventaire Descriptif." All known existing remains of ancient art in the French possessions are catalogued, and whether portable or otherwise are protected by official decrees from destruction or alienation. In the case of monuments they are surveyed and photographed, and, while no restoration is attempted, measures are taken to arrest decay, particularly by the removal of that luxuriant vegetation, which in a tropical climate makes such rapid and unceasing inroads upon the handiwork of man.

Fergusson remarked: "Since the exhumation of the buried cities of Assyria by Mons. Botta and Mr. Layard nothing has occurred so startling, or which has thrown so much light on Eastern Art, as the discovery of the ruined cities of Cambodia." Since that day a similar though less important or sensational discovery has been made in regard to the monuments of Champā. The "Inventaire" relating to Cham art appeared in 1909. *L'Art Décoratif*, for April, 1911,



Fig. 1. Central "Kalan" of a Cham Shrine.

(From "L'Art Décoratif.")

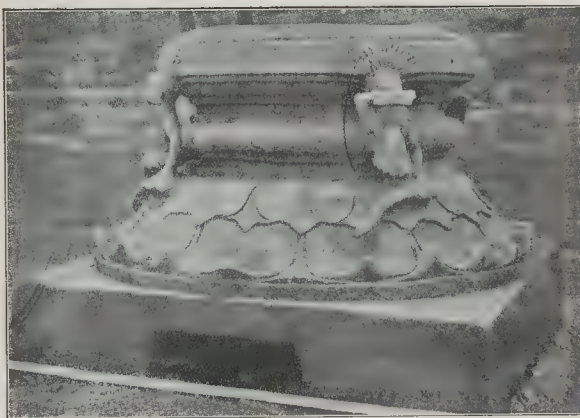


Fig. 2. Cham Capital from Mi Son.
(From "L'Art Décoratif.")

has an interesting article based upon it, from which we have borrowed some of our illustrations. While the architecture of the Khmers and the Chams are closely akin, they are distinguished by certain differences. Both are of Hindu origin, both show those strange reminiscences of classical architecture visible in India from Kashmir to Ceylon, and ultimately traceable to Greek influence. Both, too, exhibit the Hindu type of sanctuary, consisting of a vaulted shrine within a walled enclosure, entered through a gatehouse, or *gôpura*, on the east, and preceded by an assembly-hall. In both the shrine consists of a rectangular structure in several receding stories, a type probably derived from the same wooden origin—i.e., some sort of pagoda—which gave rise in India itself, in later times, to the great temples of Vijayanagar and Tanjur. Both, too, use the Hindu system of corbelled vaults, and are ignorant of the true arch and vault, which were used

structurally, if not decoratively, in Burma from a very remote period. The chief building material is red brick, stone being used where long bearings, greater strength, or important ornament is required. The Cham sanctuaries are, however, relatively simpler and less extensive, and appear not to have possessed more than one enclosure, which always consisted of a simple wall without galleries or angle towers; they also differ in minor points of architectural treatment and decoration.

The Cham remains, of which two of the most important groups are at Mi Son and Dong Duong, consist almost wholly of religious edifices; secular buildings having probably been entirely of wood and roofed with

thatch, only able to survive in that hot, moist climate if kept in constant repair. They appear to date from about the VIIIth century. The towerlike shrine, which is known to the natives as a *kâlan*, lies in the main axis of the enclosure (Fig. 1). It is entered from the east by an enriched doorway, and has similar doorways pseudo-doorways on the remaining sides. The faces and angles are treated with pilaster strips, often coupled, standing on a heavily moulded plinth, and carrying an equally heavily-moulded entablature both with frequent *ressauts*. The angles of the cornice are emphasised by a slab variously enriched and of strong projection. Between the pilasters the wall surfaces are adorned by statue-niches similar to the doorways, but on a smaller scale. The angles of the ledge above each story is occupied by a pinnacle consisting of a miniature reproduction of the entire *kâlan*. The treatment of each story of the *kâlan* is a repetition of the one below except that the finial is conjectured to have been domical, as the pinnacles occasionally are.

The shrine is sometimes preceded by porch of the same design as itself, but on smaller scale, and sometimes flanked by a pair of smaller shrines. The gatehouse is another such reduced *kâlan*, and similar small *kâlans* containing *stêla* are dotted about the site.

The assembly-halls outside the enclosure were too wide to be covered by corbel vaulting, and are consequently now roofless. They are oblong in plan, and their elevations are treated similarly to those of the *kâlan*, but the walls are pierced with square windows whose lintels are carried by balusters rather clumsy outline.

The detail and ornament throughout are based on Indian prototypes. Numerous statues occur of many-handed deities from the Hindu pantheon, together with peacock elephants, apes, cobras, and fabulous monsters. The reliefs, which adorn various portions of the structures, seldom attain



Fig. 3. Khmer Pseudo Doorway at Nil Bôn, Cambodia.
From Model in Trocadero Museum.

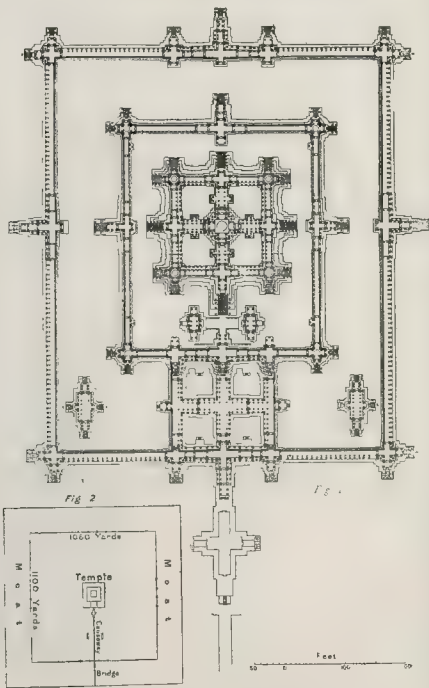


Fig. 4. Plan of the Sanctuary of Angkor Vât.
(From Fergusson's "Indian and Eastern Architecture.")

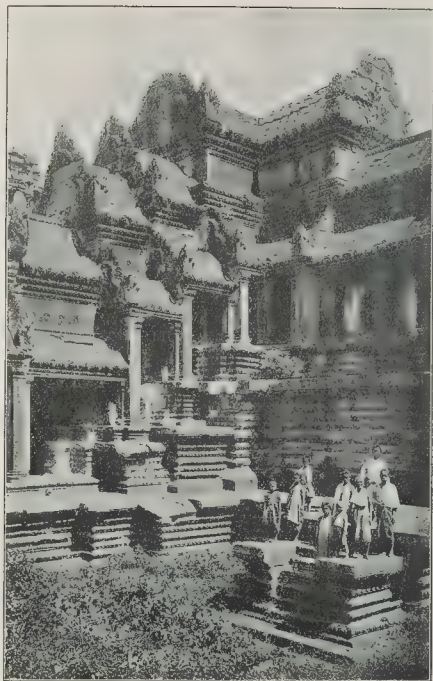


Fig. 5. Khmer Sanctuary at Angkor Vât, Cambodia.

Staircase in Angle of Court.

size or comprise more than a few figures. pilasters, tympana, acroteria, etc., often enriched with a kind of arabesque consisting of foliage bearing a far-awayness to the blunted acanthus, and not dissimilar to the curly cabbage dear to the Phœnic carvers. The pilasters, friezes, and abutments consist, as in India, of many superposed bands of enriched mouldings. Doorways and niches are flanked by groups of pilasters, and sometimes by engaged piers of octagon plan with annulets, bases and capitals (cf. Fig. 3). Fig. 2 shows a beautiful capital of Doric type, passing into the octagon to the round, and carrying a square abacus, the cyma carved with two tiers of lotus leaves. The crowning member of these features consists in a sort of horseshoe pediment of flamboyant outline, the extrados is formed of, or supported by, the *makara* or conventional-crested lion (cf. Fig. 7).

The most important parts of the sculpture decoration are cut in stone, but a good deal of the ornament is in brick; both, however, believed to have been inspired by the wood carvings which adorned the ephemeral structures of an earlier period (cf. Fig. 3). A few of the Cham monuments, such, for instance, as those at Van-Thong, are of a date nearer to the Khmer style, dating from the time when the Khmer power was in the ascendant. The principal difference lies in the treatment of the wall surfaces, which instead of being emphasised by pilasters at angles, step forward towards the centre in a series of flat breaks, thus approximating a curved form, and preparing the way for a structure of quasi-circular plan. Other distinguishing characteristics are the introduction of long sculptured friezes, the omission of the angle slabs and the greater richness and elaboration of the pediments. These architectural remains are not the relics of the Cham power. The treasure of the Cham kings are still jealously preserved in the savage Moïs of the Phanri plain. It

consists of a large variety of articles precious in substance and of rich workmanship, partly Hindu and partly Chinese in character, including diadems, mitres, robes, jewellery, armour casquets, amulets, and vessels of various kinds. All these have been photographed by order of the French Government, and catalogued with a view to prevent their destruction or dispersal.

If the far more splendid architecture of the neighbouring Khmers has been relegated to the end of the article, it is because the humble efforts of the Chams are less known. Indeed their discovery is so recent that it does not figure in the admirable chapters on the architecture of Further India, rewritten and expanded by Mr. R. Phené Spiers for the recent edition of Fergusson's "History of

Indian and Eastern Architecture." To his kindness we owe the loan of several of our illustrations.

Cambodia had a much longer period of power than Champâ, and indeed it was largely at the expense of its weaker neighbour that it acquired the wealth and the army of slaves which allowed it to carry out stupendous works of engineering and architecture so long lost sight of by the descendants of the builders but rediscovered in our day by foreigners. Cambodia consists largely of alluvial plains, exposed to yearly inundations, and the whole country is covered with a rectangular network of raised causeways. It was their points of intersection that the great sanctuaries, such as those of Angkor Vât, Bayon, and Beng Mealea, were erected by the Cambodian kings at their period of prosperity from the IXth to the XIIIth centuries. The Khmer builders developed the system found in germ in the architecture of their predecessors. They achieved greater magnificence in their sanctuaries by following the principle of reduplication or multiplication of a single motive already pointed out in the Cham monuments. Thus the porch added to each side of the square shrine has another smaller one added in front of it, and yet a smaller in front of that, till the square plan approaches a circle. The form of the shrine itself is repeated on a smaller scale at various points, and used in miniature as a pinnacle. Enclosure after enclosure is added one outside the other, till the holy place becomes a vast complex of courts and structures (Fig. 4).

These enclosures, one within the other, are surrounded by vaulted and pillared galleries with angle towers, and divided by cross galleries into courts, some of which are vast tanks, while others were spacious enough to accommodate the residences of the Sovereign and his court. The outermost enclosure at Angkor Vât measures about two-thirds of a mile in length, and was itself surrounded by a broad moat in which its walls were mirrored. The successive enclosures often rise in stages one above the other, giving the total scheme a pyramidal form and affording occasion for a series of steps, terraces, and porticoes (Figs. 5 and 6).

In the magnificence of conception and regularity of setting out these Cambodian sanctuaries can scarcely be paralleled in architectural history except by the gigantic temples of the Roman Emperors. For a general *coup d'œil* viewed from outside and at a distance they must have been more effective than the latter. But they lack the restraint which, even in Rome, usually prevented the piling up of vast masses of minute and redundant ornament. Internally, however, the ignorance of the Khmer



Fig. 6. Khmer Sanctuary at Angkor Vât, Cambodia.

Second and Third Enclosures.

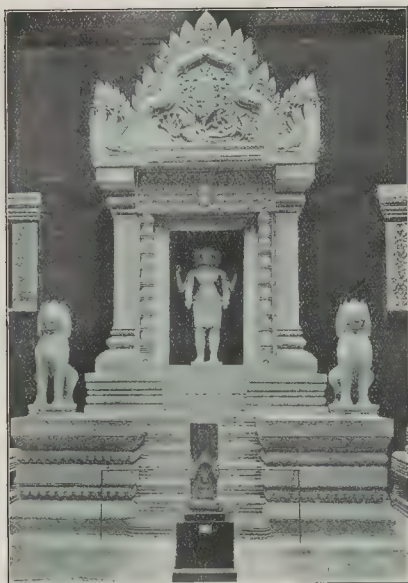


Fig. 7. Reconstruction of Entrance to Khmer Temple in Trocadero Museum.

builders of the science of vaulting, one of the greatest glories of the Roman builders, precluded them from the erection of spacious and lofty halls; for corbel vaults do not permit of greater width than about 12 ft. But what they failed to attain in width they strove to make good in length, and their sanctuaries are full of the long perspectives of pillared galleries, covered with pointed barrel vaults, and with one, or occasionally two, aisles covered with half barrel vaults. These vaults were originally concealed by flat wooden ceilings, richly carved and painted, of which some traces are still to be found.

The Khmer sanctuaries surpass those of the Chams in richness as much as they do in dimensions. They make a much larger use of stone, while still employing brick for walling and even for parts of the enrichments. Their mouldings differ from those of the Chams in section and are more elaborately carved; the sculpture is more profuse, the reliefs often running to immense compositions containing hundreds, if not thousands, of figures. The magnificence of these gigantic structures before decay overtook them and the jungle swallowed them up must have been such as can hardly be imagined, and well may the degenerate descendants of the great medieval builders, who have long forgotten their own glorious past, attributed their erection to the agency of angels.

A kindred people, another branch, perhaps, of the same Malayan family, settled in Java, produced temples of a very similar character and almost equal magnificence. The genius displayed by this race for assimilating and adapting to its own purposes an architecture of foreign importation and doubly foreign origin is most remarkable. The Malayan peoples must be reckoned among the great building peoples of the world, even if it should not be possible to establish a link between them and the wonderful Xth century ruins of Yucatan, which exhibits such startling analogies with the architecture with which we have been dealing and its Indian parallels. If this link be no mere fancy we should have to revise our views of history and recognise that European culture first reached America, by way of the east, centuries before

Columbus, and one more proof would be afforded from a very unexpected quarter of the widespread dominance of the Hellenic genius. What a fairy tale it would be, if it could ever be told, that Odysseus of the Greek column and entablature drawn across the deserts in the train of Alexander's triumphal car, spread throughout India by the agency of the semi-Hellenised princes who reigned in Persia and Rajputana in the succeeding centuries, ferried over the Indian Ocean to Ceylon, Indo-China, and Java by Brahmin missionaries and craftsmen, and then across the Pacific by Malay conquistadors, anticipators of Cortes, to moulder in the jungles of the Gulf of Mexico.

THE EXHIBITIONS AT ROME IN 1911.—III.

THE EXHIBITION OF RETROSPECTIVE ART AT CASTEL S. ANGELO.—II.

HAVING dealt with the foreign sections, it will be best to continue our survey of the rest of the exhibition mainly in the local order, i.e., in the sequence in which its various parts would actually be visited.

The remainder of the building which contains the sections allotted to Belgium, Hungary, and those South American Republics which are taking part in the exhibition was ready later than the rest. It also contains a series of studies of the Churches of S. Maria in Cosmedin and S. Saba, exhibited by the Società Artistica, tra i Cutlori di Architettura (which was instrumental in the removal from them of the additions of the XVIIIth and XVIIIth centuries, and their successful restoration to their former condition), and drawings of interesting buildings which have been removed in the course of modern improvements, exhibited by the same Society; a fine set of drawings of the mediæval castles of the Roman Campagna, by Signor Ferrari; and engravings and drawings dealing with the topography of the environs of Rome. At the back of the building is an interesting curiosity—the State train built for Pope Pius IX. for his journey through the Papal States, containing even a private oratory.

Below this is a barrack built by Urban VIII., the upper floor of which contains the exhibition of Roman topography, which is

illustrated by means of plans and views (pictures, drawings, engravings, rare books, and a few photographs) of Rome from the XVth century onwards, carefully selected in order to show the changes which the city has undergone in the course of successive alterations and "improvements." The objects lent are in the main the property of the State and of the Commune of Rome, though private owners have also contributed. The corridor contains a fine series of plans and panoramas of the city, much more complete than that exhibited by Dr. Thomas Ashby at the Town Planning Exhibition in London in October last, inasmuch as it was possible to draw freely on the resources of the Vittorio Emanuele Library, the chi Government Library in Rome. A copy of water-colour of Bufalini's plan of 1551, and copies of Giovanni Maggi's woodblock plan (period of Paul V.), and of Greuter's engraving plan (1618) are among the greatest rarities. The rest of the corridor is devoted to some fine large water-colours of the Tiber before the construction of the new embankments in the "eighties" and "nineties," by the late Ettore Roesler Franz, which are precious both as records of what has disappeared and as works of art. The remainder of the drawings of "Roma Sparita" ("Vanished Rome") are placed in the regions to which they belong, for the distribution of the rest of the contents of the exhibition is topographical, the city being divided up into twenty-three sections, each one of which occupies a small room; thus we have, on the right of the corridor, Castel S. Angelo itself, then S. Peter's, then the Janiculum and so on, and on the left, the Piazza del Popolo and its surroundings, then the Piazza Colonna, Fountain of Trevi, and Pantheon and so on. To describe the exhibition in detail would exceed the limits of the present article, but it may safely be said that it gives a survey, hitherto unobtainable, of the growth of the city of Rome as we now see it, and one cannot help feeling how much the picturesque and beautiful has been lost, was inevitably, it may be, in many cases (though that is a vexed question), but not the less regrettable. Among the objects of special interest may be mentioned a series of fine drawings of Rome by Vanvitelli (V. Wittel, a Dutch artist) of the early XVIIIth century; some coloured drawings of the churches of Rome, by Achille Pinelli, brother of the more famous Bartolomeo; and a large model of the mediæval Lateran made specially for the exhibition.

The lower floor of this building is devoted to offices and meeting-rooms for the many various Congresses which are to meet in Rome during 1911, and so is the lower floor of the corresponding building on the opposite side, while the upper floor of this last contains an interesting museum of military engineering, with models and plans of fortifications from the Renaissance onwards; this was opened as early as last February, and is a permanent institution.

From this point we cross a newly-made garden and enter the outer (square) port of the Castle itself by a small gate with drawbridge. There we find a section devoted to mediæval sculptures, and a room containing some specimens of the work of the Cosmates in which the place of honour is occupied by the splendid casts of the shrine of Edward the Confessor and the tomb of Henry V. in Westminster Abbey, executed under superintendence of Cav. Formigli, described by him at a meeting of the Royal Institute of British Architects early in the year. Above are sections dealing with mediæval painting in Rome and with costumes, the latter rather miscellaneous, but containing some interesting objects. A room on the opposite bastion is also devoted to costume, and another to sculptures, associated with Bernini.

Passing now to the front of the Castle we enter the building itself, the great mass that once was Hadrian's tomb. To ascend the mediæval ramp which pro-

through the sepulchral chamber and reach Cortile delle Palle, so called from the balls of stone cannon-balls which are stored there. In the rooms on the right are most artistic imitations of an XVIIIth-century jeweller's shop and of an alchemist's kitchen, a fine exhibition of old surgical instruments, mortars, documents, herbals, etc., a large collection of the beautiful maiolica used by Italian hospitals and chemists in the XVth century onwards, the hospitals of Rome having contributed freely of their treasures. A collection of maiolica in chronological order, showing the development of the fabric, is placed in the Sala Apollo, one of the rooms in the central division, between the two courtyards, which was decorated for Pope Paul III. Raphael's pupils. An adjacent room, with a ceiling of the time of Clement VII., is set up as a bedroom, containing a bed and other objects of splendid XVIth-century work; ironwork.

The other rooms contain objects connected with the history of the Castle—inscriptions related with its castellani or governors, a fine tombstone of one of them, inscriptions and architectural fragments, parts of it which have had to be demolished, XVth and XVIth century maiolica found in the course of repairs (many of them with the arms of the Borgia family, which Pope Alexander VI. belonged to), etc. The rooms surrounding the court on the other side (that which contains a beautiful well-head of white marble, covered recently by a modern building, and before well preserved, with the arms of Pope Alexander VI.) are given up to an interesting collection of musical instruments. Ending to the floor above, we find the Sala della Biblioteca, so called from its use for this purpose under Pope Paul III., now devoted to an important exhibition of sculptures by, and portraits of, Michelangelo, and pictures by him and his assistants, arranged by Professor Ernst Stein. Some of the adjacent rooms contain tapestries and brocades; and a spiral staircase, not long ago discovered to be Roman, leads to a room until recently devoted to a collection of the military museum, but now adapted, as are some of the rooms beyond, for the exhibition of Renaissance armour, which is of considerable interest and importance. Returning to the Sala della Biblioteca, pass along a corridor to the great hall, created for Paul III. by Perino del Vaga; this is the apartments of that Pope, decorated with frescoes, which have only in recent years been restored; they have been on the occasion of the exhibition been set up with furniture and pictures of the old, so as to give an image of their former splendour. Among the pictures which now decorate them are some works of considerable importance, but by private owners, notably a beautiful Annunciation by Filippino deli, belonging to Miss H. Hertz, a fine picture, lent by the Torlonia family, and others.

It will readily be understood from the foregoing description that the exhibition is of a somewhat miscellaneous character, and that neither the selection nor the arrangement of the objects exhibited is in all cases fully systematic, though this varies considerably in the different sections. To those who know the Castel S. Angelo, and its ascents and descents, its meandering passages, its rooms of all sorts, shapes and sizes, it will be clear that consistency would have been impossible, and it was well that an attempt at it was made. What has been done is to bring together a number of objects of considerable interest and beauty, illustrating associations with the life of Rome in the past, and to place them, in most cases appropriately, in the picturesque backgrounds which the rooms of the Castel S. Angelo so richly afford. And if the present exhibition leads, as it is intended it should, to a better knowledge of this remarkable place and to the establishment there of a

permanent medieval museum, like the Bargello in Florence (a thing which has hitherto been lacking in Rome) much good will have been done. In the meantime, it may safely be said that the exhibition greatly enhances the interest of what was before one of the most attractive "sights" of Rome—perhaps the one building that of all others presents us with the best epitome of its history from the days of the Empire onwards.

ANCIENT MONUMENTS AND HISTORIC BUILDINGS.

UNDER the Ancient Monuments Protection Act, 1852, Lieut-General A. Pitt-Rivers was appointed Inspector of Ancient Monuments. On his death in 1900 the office remained vacant, though informal inspections were made by Mr. J. Fitzgerald, I.S.O., Assistant Secretary to the Commissioners of Works, till his death in 1909. But in March, 1910, Mr. C. R. Peers, M.A., Secretary to the Society of Antiquaries, was appointed Inspector by the Treasury at the instance of Mr. Harcourt. His Report for the year ending March 31, 1911, has recently been issued, and is a very interesting document.

The number of monuments under the protection of the Commissioners is now 104, ranging from a single stone to an important complex of buildings, such as Dover Castle. Of these forty-five are prehistoric—dolmens, standing stones, earthworks, hut circles, etc.—and the remainder historic—castles, ecclesiastical and domestic buildings, town walls and gates, sculptured or inscribed stones. Within the year ten monuments in England and Wales and five in Scotland have been placed under the protection of the Act. Of these ten are prehistoric—eight in Anglesey and two in Orkney. Those of historic times are Nottland Castle and Eynhallow and Pierwall churches in Orkney, part of the earthworks of Skipsea Brough in Yorkshire, and the Abbott's Fish-house, Meare, Somerset.

The Report gives an account of the condition of the monuments under the protection of the Act, and of the works of upkeep and exploration carried out during the year. Only such works of repair are undertaken as are necessary to preserve the monuments from further decay, while in some cases modern disfigurements are removed. Among the most important buildings which have undergone such works are Glasgow Cathedral (the roofs), the Chapel Royal, Holyrood, and Stirling Castle, the Tower of London, Richmond Castle, Yorkshire, Old Sarum, and Tyne-mouth Priory. Mr. Peers points out that the Act of 1900, which greatly widened the scope of that of 1802, though still unfortunately but little known, has had beneficial effects. *Inter alia*, it has permitted of monuments belonging to other State Departments (such, for instance, as the War Office) being cared for by the Commissioners. Monuments, too, in private ownership may be placed under their guardianship. When such are offered, they are inspected and reported upon, and if they are in a state of disrepair resulting from the owner's neglect he is called upon to bear a portion of the cost of repair as a preliminary to acceptance.

The Report concludes by enumerating the measures which should be adopted in order to secure the most effective protection of a monument as follows:—

- (i.) Structural and superficial repairs, i.e., grouting, underpinning, pointing, treatment of decayed surfaces, removal of ivy and weeds, etc.
- (ii.) Enclosure by fencing where necessary.
- (iii.) Care of the site, i.e., grass-cutting, prevention of disfigurement by visitors, the provision of notice boards, etc.
- (iv.) The preparation of accurate and complete measured plans, elevations, and sections.
- (v.) Photographs.
- (vi.) The compiling of official guide-books to single monuments or to groups of monuments.

In an appendix, a report on Mr. J. M. Watson's proposals for the restoration of St. Magnus Cathedral, Kirkwall, is given, in which the scheme is examined under three heads:—(i.) Proposals based on the condition of the structure, (ii.) proposals involving

"restoration," (iii.) new fittings. The Inspector approves the first, but condemns, or at least severely criticises, the second and third. In view of the fuller information now given by him on the scheme than we had before us when we referred to it in our issue of August 20, 1910, in terms of guarded approval, it would appear that his strictures are justified. That the Commissioners should have the power in this case to prevent unnecessary tampering with an historic building (whose object, he is remarked, is principally to spend a legacy) is in itself a proof of the utility of the Acts.

WALL PAINTINGS IN SURREY CHURCHES.

MR. PHILIP MAINWARING JOHNSTON'S paper in "Memorials of Old Surrey," which has now been reprinted separately, contains an exhaustive account of the paintings existing at the present time, or till recently, in the churches of that county, and some twenty-five illustrations, comprising both photographs and careful drawings by the author.

For the churches of the two counties of Surrey and Sussex Mr. Johnston claims the glory of containing a greater wealth of wall painting than those in any other six counties. Many of the examples of such decoration described by him are mere fragments, such as the remnants of simple Norman fret and saw-tooth patterns of about 1100 at Godalming. These are among the earliest examples in England, and only escaped the mischievous Restoration of 1840 owing to their being in the splays of blocked windows, which were not opened out till 1879. Equally fragmentary are the vine and floral patterns on the soffit of the east window at Shere of 1320, and the very beautifully-drawn lily at Horley of the same period.

Others are fortunately more extensive, and comprise figure subjects of great interest. Extremely quaint and vigorous, for instance, is the figure of a scourger at Pyrford from scenes of the Passion and other Scriptural subjects, dating from the middle of the XIIIth century, the time of the erection of the church, and found underneath another series of the XVth century in too bad condition to be saved.

The paintings in St. Mary's, Guildford, are surpassed in importance by only one example in the county. Yet even here much has been lost. So late as 1896 a portion was destroyed by "workmen let loose in the church with a general order to whitewash everything! The famous paintings in St. John's Chapel were only rescued just in time." These are, in Mr. Johnston's view, of two dates c. 1185 and c. 1210. The later portions include a number of figure subjects in medallions on the series of the vaulting, representing scenes from the lives of the Saints.

The most remarkable wall painting probably in the British Isles is that in the tiny hill church at Chaldon discovered in 1871, and preserved by the then rector. It was executed towards the end of the XIIIth century, perhaps, by a monk of Chertsey. It occupies the whole width of the west wall, viz., 17 ft. 3 in. and is 11 ft. 2 in. high, reaching almost to the floor. This space is divided horizontally by a band of ornament and vertically by the "Ladder of Salvation," on which the souls are represented attempting to make their escape from the powers of hell to Paradise. The subjects of the four compartments thus formed represent, below, the Tree of the Knowledge of Good and Evil and the Torments of the Damned, and above, "The Harrowing of Hell" by Our Lord and the Weighing of the Souls. The companion pictures representing the earthly and heavenly Paradise probably occupied the return walls to north and south, the former of which at least is known to have been painted. In an unmastered age, when faith in the church's teaching was still unshaken, the naïve realism of these paintings must have produced an unforgettable impression on the simple minds of the village folk, filling them with the horror of fear and rapture of hope at the literal fulfilment of the scenes depicted. Compared with these robust, if grotesque and childish, representations of the future life, the XVth-century painting of Charwood (P. IV.) has an unpleasantly sophisticated flavour, and betokens morbid

revelling in the "macabre." It is one of the type of which Holbein's "Dance of Death" was the culmination, and represents "The Morality of the Three Living and the Three Dead." Three half-unfleshed skeletons are grinning at three kings in the pride of life, in the midst of a hunt, and seem to say—

Loke, such as we ar, such schall ye be,
And such as we were, such be ye.

The record which Mr. Johnston has given us is an invaluable one, and the more so since it is to be feared that in many cases the paintings which have survived the Reformation, the Civil Wars, and "Restoration" will fade away under the influences of the climate unless those under whose charge they are can be induced in time to apply the spray treatment recommended by the author and successfully used by him in certain cases.

HISTORICAL NOTES.

Ancient Jerusalem.

THE *Times* of May 5 gave a brief account of the results of Capt. Parker's excavations at Jerusalem begun last summer. The most important of these are the determination of the site of the Jebusite city captured by David, which the pottery found proves to have been in existence some 2,000 years before that event. The search for the tombs of David and Solomon has proved fruitless; nor have any Hebrew inscriptions of that period come to light. The spring of the Virgin's Well, and the tunnel leading to the Pool of Siloam, which is 1,760 ft. long, were cleaned out, whereby not only was an accurate survey of these works rendered possible, but the water supply largely increased to the delight of the neighbouring villagers, who held a feast in honour of the occasion.

Roman Remains in the River Wye.

AN important letter by Mr. James G. Wood, F.S.A., recently appeared in the *Standard* on the subject which has been brought into public notice by Dr. Owen's nonsensical operations in the River Wye. The site of these is half a mile above Chepstow, at the point where the Roman road between the important centres of Caerleon and Caerwent crossed the Wye, and is as likely to have been selected for a secret cache as "the middle of Cheapside." The crossing was effected not by a ford, as has been stated, the river being quite unfordable at this point, but by means of a bridge whose remains are still visible, though partly destroyed by Dr. Owen; they were so described by the writer. The portion recently exposed is the "starling," or footing, of a lateral pier identical in form with those of Old London Bridge. The fact that undecayed oak was found in connexion with these remains is no proof of a relatively recent building, as witness the condition of the Roman ship lately found in London. This Roman bridge was abandoned when traffic was diverted by the rise of the town of Chepstow. The writer further gives reasons to show that the wall, which Dr. Owen assumes to be that pointed to by his opher of 1610, is of an older one, a point which invalidates his identification of the position of Bacon's alleged hiding hole.

Explorations in the River Wye.

WHILE the works carried out in the River Wye by Dr. Owen have so far thrown but scant light on the question of the plays attributed by a possibly too traditional, but almost unanimous world to one William Shakespeare, they have elucidated a point of local archaeology in fixing the site of the Roman ford at Chepstow. A large timber-framed pier has been unearthed on the Monmouthshire side in good preservation, which gave rise in 1840 to Ormerod's theory that a Roman bridge stood in this position. A row of much worn piles embedded in a mass of stones have also been found. When the tides permit the structure will be further investigated.

THE *Scotsman* of May 29 contains an account of the works in progress with the object of preserving the remains of Kelso, Jedburgh, and Sweetheart Abbeys from further decay. These works, which have been undertaken with the worthiest motives and on the most scientific lines, involve

no attempt at "restoration," and in so far they deserve the gratitude of posterity. It is difficult, however, to read without some twinge of regret passages like the following:—"Care has been taken to eradicate these (the roots of plants) in a thorough manner, and to this end it has been necessary to take down several courses of masonry, to clean out the joint of all vegetation and then to rebuild." Archaeology is certainly of great importance, but, after all, natural beauty has its claims. Possibly another generation which has learnt all the crumbling remains have to teach may prefer a covering of grasses and ruddy wallflower wavering in the spring breeze even to a weatherproof coating of asphalt, or to see the mouldering masonry harmonised with the natural landscape around them by tufts of fern and patches of moss, or even yielded to the embrace of ivy tendrils, rather than fortified in the arid security of neat pointing. There can be no general rule in such matters, but where the remains are very fragmentary it might be a finer reverence to allow a graceful old age to resolve them once more into their component elements. Only those on the spot can judge, and far be it from us to criticise the generosity of those at whose expense these works of preservation have been carried out—the late Marquis of Lothian, Messrs. Oswald and Newall, and the Duke of Roxburgh respectively.

The Border Abbeys.—I.

THE history of Kelso and Jedburgh is similar. Both were foundations of David I., that "sair sanct for the Crown." Both suffered severely during the Wars of Independence, and in Henry VIII's invasions. In 1522 and 1523, and again in 1545, the English generals wrought such havoc that it is a wonder there was anything left for the ardour of Protestant fanatics to destroy. In each case a portion of the Abbey church was repaired and used as a parish church for a considerable period. At Kelso, where the plan is a Greek cross, the remains consist of the two aisles, a ruined east end, and two sides of the central tower. At Jedburgh, where the church was one of the largest of its kind in Scotland, the remains are more considerable. New Abbey in Dumfriesshire, which acquired the romantic name of Sweetheart Abbey from the fact that, when its foundress, Devorgilla, who was also the foundress of Balliol College, at Oxford, and the mother of the ephemerical king, John Balliol, was buried there, her husband's heart enclosed in an ivory casket, was buried with her. This religious house being further from the border, seems to have survived with little damage till the dissolution of the monasteries—considerable remains of its large Early Decorated church form a beautiful object on the banks of the Nith.

Bardney Abbey.

A REPORT has been issued by the Vicar of Bardney of the excavations carried out under his supervision, and that of Mr. Harold Breakspear on the site of Bardney

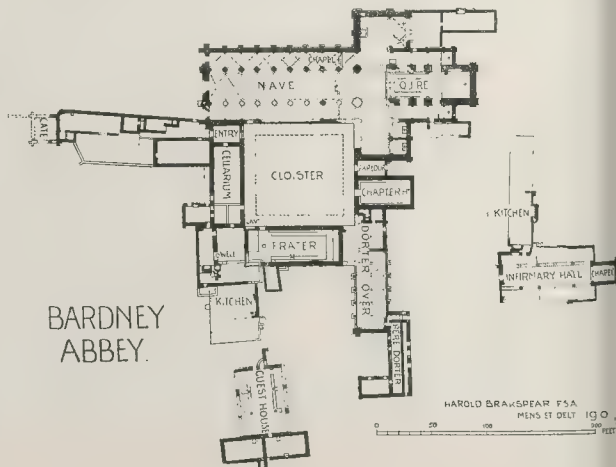
Abbey during 1909 and 1910. A great part of the site has been laid bare revealing the ground plan, which we reproduce. The church was begun at the east end in early Norman times and the west end was reached about 1240. The bases of the clustered piers of the arcade mostly of good early English work are now visible. As many as forty-four memoriae slabs have been found in the uncovered portion of the floor, those dated ranging from 1400 to the Dissolution. In the frater the stone seats and many of the stumps of the table legs are still *in situ*, and five of their carved capitals have been found. The works are still far from complete and more funds are required for the purpose. Meanwhile gifts and loans have permitted the purchase of the site, which is eventually to be made over to the National Trust or some similar body, and the formation of a local museum of architectural fragments and other objects found in the excavations.

The Protection of Ancient Churches.

WE trust that the report of the twenty-second congress of Archaeological Societies in union with the Society of Antiquaries, held last month, will bear fruit in preventing regrettable acts of vandalism too often committed through ignorance or lack of intelligent control. It stated that the Council had passed a resolution to the effect that the position of the Society of Antiquaries in advising diocesan authorities on matters of church restoration should be strengthened by the grant of additional powers through the Royal Commission on Ancient Monuments (England), and recommending the appointment of the Society as the advisory authority for England and Wales in all matters relating to the furniture, fabric, and monuments of churches.

Mr. P. M. Johnston, F.S.A. (Surrey), moved as a rider to the Council's resolution, that the Congress, recognising the importance of local knowledge and influence, approve the steps already taken by the Sussex Archaeological Society in setting up a special committee to watch over the ecclesiastical antiquities of the county, to warn the Bishop of any threatened mischief to an ancient church, and to tend advice where a faculty was applied for in the Diocese of Chichester. Further, he asked the congress to commend that arrangement to the consideration of other local archaeological societies for imitation where circumstances allowed, such local action to be supplemented to the general powers sought to be obtained for the Society of Antiquaries.

Mr. Johnston's rider was ultimately carried. It is interesting to learn that a similar movement is on foot in France. A petition signed by hundreds of names prominent in literary, learned, artistic, and ecclesiastical circles was presented to the Chamber of Deputies June demanding the safeguarding by the State of the architectural features of the churches of France, and referred to a committee for consideration.



THE BUILDING TRADE.

THE CLERK OF WORKS.

WHAT is a clerk of works? What are the qualifications necessary to justify a man in calling himself a clerk of works? Is it training, experience, knowledge of the science of building—or a combination of these and something else—anything something else? We all know what a clerk of works should be and what general qualifications are, but how to assess them? Like the Constitution, they are unwritten.

The Duties of a Clerk of Works.

What are his duties? In this we think will be found the key to the difficulty! His duties! For, under any architect, committee, or employer his duties vary, or rather the details of his duties vary. Broadly described, his work consists of supervision, the extent and nature of supervision depends upon who he is working for, or under. It may consist of the supervision of the material of the building work, begins and ends in seeing that the proper materials are used and drawings adhered to; but often, very often, it goes much farther than this, to the extent, in fact, of only half his time being devoted to this end. We may take it for granted that the clerk of works, as we now know him, was instituted at the period when free competition amongst the building contractors became general, and that he was appointed as the inspector, or policeman, of the building, and that his duties then, as sometimes now, consisted in seeing that the work was correctly executed.

We know he existed long before that period, in a different capacity; and slowly but surely in the present period he is evolving, and again he is assuming a capacity in which his duties much more responsible than those of an inspector or policeman. Many of the busy architects know what is meant, how many of them could describe or list all the duties of the men referred to? How many grasp, or appreciate, the extent of these duties?

How, but very surely, as the competitive system has increased in the building trade, and order and system have been obliterated from chaos, duty after duty has been added to the clerk of works, until to-day one asks the question—Where do his responsibilities commence, and where do they end? How much of his work now consists of building inspection and how much of it is office work? Organising, advising, checking, correcting, making notes, estimating, valuation, and correspondence.

The duties of a clerk of works consist of serving loyalty to his architect!

There is there to take from the shoulders of the architect every duty and every responsibility that can with confidence be transferred to him. He is the architect's representative, "the eyes of the architect," as has been elsewhere stated. Just to the extent that he commands his confidence will his duties extend from that of being merely the inspector.

Therefore, as the question becomes dependent upon individuals, the answer must likewise vary according to the variation of the individuals, and no set statement of the duties of a clerk of works can be given in all.

Such, we think, is a fair statement of the position of the clerk of works to-day, leaving out of account the appointment that is sometimes made, independently of the architect.

The Training of the Clerk of Works.

What is the training that is necessary to produce a clerk of works to meet the present requirements? If we trace back the

history of most of the present-day men we shall find that they were joiners; men who showed skill and intelligence above the ordinary, who won the notice of their employers and were made foreman joiners; and at a later date were entrusted with the execution of some large building in the capacity of general foreman, and so came into direct contact with the architect. They afterwards pass into the architect's service, or by his influence secure an appointment on some new public building, and so begin their careers as clerks of works.

It is a big stride from foreman to clerk of works, but as a rule they were able to take it and to successfully take up the duties of the post, which are not very dissimilar to those they have been previously exercising so long as the new position is that only of an inspector.

They had all the knowledge of materials and love for good work necessary to make an inspector, but the qualifications necessary to develop them from inspectors to clerks of works, of the type we have endeavoured to describe, have been the slow accumulations of years of experience and effort. Their first promotion to be foreman joiners showed them to be men of superior skill and intelligence and men who could show others how to do their work and were naturally looked to by them for guidance and assistance; so on the strength of their first promotion it is acknowledged that they are men superior to their fellows, and their further development is a matter of course.

So we have got our best type of the old clerk of works to-day in the promoted foreman, and the architects are able to rely on him for advice and assistance, and are in many cases glad to be able to transfer to him responsibilities, in addition to and of considerably more importance than merely inspecting the building work. But he got his first promotion to the post of foreman in past years for very different qualifications than those which now obtain.

The Future Clerk of Works.

We have endeavoured to show that it was the builder who first selected the man who became a clerk of works, and have emphasized the fact that it was due to his superior manual skill at his trade, and his general display of intelligence, that caused the builder to select him. The experienced clerk of works will agree with us that the tendency of to-day is no longer to promote a man to the post of foreman because of his superior skill. He is no longer, to the same extent, looked to by his fellow-workmen in the sense of his being a superior mechanic. It is, in fact, questionable if the display of superior workmanship does not, in some instances, militate against the selection of a workman for the post of foreman.

To-day he is more often selected for his qualifications as a dividend earner, a handler of men in the sense of getting the largest quantity of work out of them in the shortest possible time.

We carefully avoid making a sweeping statement of this and have purposely qualified it throughout, but in support of our contention we will quote the most authoritative opinion we can find in giving a description of the ideal foreman of to-day. It is found on page 91, *The Builder*, dated January 26, 1907. The President at the Annual Dinner of the Builders' Foremen's Association, quoting a former President, says: "The ideal foreman is he who, when a job is taken at 10 per cent. below cost, can bring it out at a 10 per cent. profit." Where, then, is the future clerk of works to come from?

Is the old system of promotion to foreman joiner, general foreman, clerk of works, to continue, and, if so, with what results?

The first and most important duty of either an inspector or a clerk of works is to obtain the best possible work both in materials and workmanship. Is the present-day foreman selected and trained so that he will give the architects satisfaction in these respects? Who is to fill the places of the old clerks of works, as they in the natural course of events die out? Is it to be the foreman whose sole qualifications depend on his power of "speeding up"? Because very soon there will be none other.

The trend of the times demands it. Contractors to obtain an existence, as such, must have it. The competition of to-day spells ruin to any firm of contractors who does not accept this as the main qualification, the one essential qualification, in their foreman. The more he is able to demonstrate the possession of this qualification the speedier will be his promotion, until eventually the whole of the general foremen will be of this type. These are the men who in future will meet the architects and be made into clerks of works if the present method of selection continues.

Are the architects satisfied with this prospect? Whether they discuss it now or at some future date is immaterial. It will have to be discussed or the quality of their buildings will suffer. Is it not already suffering?

What do the clerks of works themselves say about it?

Their ranks are open to every newcomer, good, bad, and indifferent. Tinker or tailor, never mind what his qualifications are, so long as he has obtained sufficient influence to be pitchforked into an appointment as clerk of works, and has as a result obtained two testimonials from the same source, he is open to enter into competition with any clerk of works for any public appointment as such. They are the least protected body of men in the country to-day.

Questions and an Appeal.

How far is contracting removed from a lottery when the efficiency of the direct supervision is so open to chance? How much do the building owners lose by "variations on contract" under similar conditions? What ratio does the salary of a good clerk of works bear in proportion to the later cost of the maintenance of a building supervised by one of this type?

What will be the ultimate effect on the skill of our artisans under the increasing "hustling" conditions, if inefficient supervision is ultimately to predominate?

Of what use are the architect's hours, spent in developing his art in detail and design, if the man supervising the execution of the building has neither love for good work nor the ability to recognise it?

What will the working life of the architect be, if the present progress is maintained in the adoption of new methods of construction and invention without the aid of efficient supervision from the practical side?

And further, what is the salary of an efficient clerk of works going to descend to, so long as the ranks are open to all-comers?

The grand old science of building was something more than the means of merely earning a livelihood. Are we to stand idly by and see its best traditions depart and its degeneration into no higher ideal than that of mere money-making?

Are our future buildings to be faithful efforts to continue the true spirit of the higher development of mankind, or are they to be monuments perpetuating the lower commercial instincts of the period? Without the aid of the architects, the position of the clerks of works appears to be abortive.

The helping hand of the professional established organisation needs to be extended

signs of Mr. J. W. Wilson, architect, of London. The contractors for the work are Messrs. T. Reynoldson & Sons, of Dupton.

BUILDING IN AUSTRALIA.

Advice recently received by the last Australian mail states that the current prices of bricks in New South Wales are regarded by builders as excessive, and in reply to numerous requests the Minister of Public Works states that unless these prices are materially reduced before the beginning of the next year bricks will be sold to the public from the State works now being erected "at prices that will astonish the trade generally." The Department of Defence proposes to build workmen's cottages at the Small Arms Factory at an estimated cost of 50,000l.

The Victoria Public Works Department is preparing plans for the erection of a new Court house in North Melbourne.

UNIVERSITY COLLEGE, BANGOR.

This building was opened last week by H.M. the King, and has been erected at a cost of over 100,000l. The architect for the work was Mr. H. T. Hare, F.R.I.B.A., whose designs for the college were published in the *Builder* on January 12, 1907.

COTTAGE HOSPITAL, HAYWARD'S HEATH.

This hospital is being erected as a memorial to King Edward VII., and the foundation-stone was laid last week. Messrs. Frederick Wheeler & Godman, of Horsham, are the architects, and the contract is being carried out by Mr. Horace Finch, of Hayward's Heath.

NEW DRILL-HALL, MOSLEY.

The foundation-stone of this building was laid last week by the Mayor, and the architect for the building is Mr. W. Cooper, F.R.I.B.A., of Huddersfield. The contractors for the various works are:—Excavating, draining, brickwork, and mason's work, Messrs. Shuttleworth Bros.; joiner, Mr. I. Hayrack; plumber, Mr. T. Boyd; plasterers, Messrs. S. Johnson & Sons; slater, Mr. E. Wild; concreters, Messrs. Luttrellworth Bros.; painter, Mr. T. Boyd; electricians, the Lancashire Electrical Engineering Company, Ltd.

NEW BANE, BALLYCONNEL.

This building has been erected by Messrs. McDowell & Co., contractors, of Belfast, on the designs of Messrs. Blackwood & Jury, architects, of Belfast, and the contractor for the office work was Mr. M. A. Mitchell.

THE NEW WHITEHALL CLUB.

The New Whitehall Club is being erected on the west side of Princes-street, Westminster, the corner of Parker-street. The club has a frontage of 63 ft. to Princes-street, and a depth of 52 ft. to Parker-street. The ground upon which it is raised is at street level, and contains a good entrance hall, a morning-room, audience-room, and the secretary's office and committee-room, and also a commodious cloakroom with lavatories attached. On the east side the dining-room extends for the full length of the building, and is served from service-rooms with lifts on the west side of the same. Library and reading-room are provided to the Parker-street front on this floor. On the second floor, over the dining-room, is the large smoking-room with cardrooms adjoining, while the third floor are a large billiard-room and lounge, and also a private billiard-room for the use of members only. The kitchen is situated in the basement, and has been carefully planned for the service of a large club. The premises are constructed in fireproof materials throughout, and are heated with low-pressure hot water and open fireplaces. An electric passenger lift serves all floors. The elevators have been kept simple in character, and are being carried out in red pressed brickwork with Portland stone dressings. The builders carrying out the works are Messrs. Ford & Walton, Ltd., and the architect is Mr. Hatfield Clarke, F.R.I.B.A., of Bishopsgate.

NEW COUNTY ASYLUM ANNEX, WHITTINGHAM.

The contract for this work has been secured by Messrs. E. Taylor & Co., builders, of Littleborough, the amount of the tender being £7,550l. The architects are Messrs. Sykes & Evans, of Manchester and Rochdale.

OPHTHALMIC HOSPITAL, LONDON.

The foundation-stone of this building, which is being erected in Judd-street, St. Pancras, was laid on July 5 by the Duchess of Albany. The contractors for the work are Messrs. Paton & Fotheringham, Ltd., of Theobald's-road, E.C., and the architect is Mr. John Ladds.

TRADE NEWS.

The Royal College of Science, Dublin, which was recently opened by H.M. the King, is warmed throughout by radiators with low-pressure steam or vapour as the heating medium, circulated at atmospheric pressure by means of special vacuum pumps. These pumps withdraw all air and condensed water from the system and promote a positive circulation at all points without any risk of "water-

hammer" or "knocking." Fresh air is introduced into the rooms by means of grates fixed in the walls behind the radiators, and each air inlet and radiator can be separately controlled by the occupant of the room. The vitiated air from the rooms is extracted by means of outlets near the ceilings, and these open into ducts over the corridors, which are connected to two chambers on the roof. In each chamber a large and powerful fan of the centrifugal type is fixed, driven by an electric motor, and these fans deliver the air to the outside atmosphere. All the fumes from the apparatus in the laboratories, etc., are collected into flues and ducts and taken separately to the fan chambers. The hot water is generated by means of large central copper storage calorifiers heated by steam fixed close to main boiler-house, from which copper circulations are taken to the whole of the laboratories, and the circulation of the water can, when desired, be accelerated by steam-driven pumps. A service of high-pressure steam piping is also run throughout the building for experimental purposes. The steam for this plant is supplied from the existing power station, which is being extended by the addition of another boiler of the locomotive type similar to the present ones. The whole of the engineering equipment has been designed and erected by the Brightside Foundry and Engineering Company, Ltd., of Sheffield, London, and Birmingham.

Messrs. Jones & Attwood, Ltd., heating specialists, engineers, and ironfounders, Stourbridge, have purchased the business carried on for the past eight years by Messrs. Birch Killon & Co., hydraulic engineers, Cooper-street, Manchester. The staff has been transferred from Manchester to Messrs. Jones & Attwood's works at Stourbridge, and all business will in future be transacted from that address. Mr. H. Birch Killon, A.M.Inst.C.E., has been appointed Manager of the Municipal Department, and consulting engineer on all questions relating to sewerage, sewage disposal, and hydraulic machinery.

In the Royal Liver Building, Liverpool, which has just been opened, there are fifteen passenger lifts arranged for a load up to 1,800 lb. Four of these travel at a speed of 300 ft. per minute, the height of travel being 148 ft., the lifts serving eleven floors. Six express lifts which run at a speed of 400 ft. per minute serve seven floors. Two express lifts, running at 400 ft. per minute, serve three floors. Two express lifts, travelling at a height of 165 ft. at a speed of 400 ft. per minute, serve three and four floors respectively, and one lift, travelling at a height of 208 ft. at a speed of 400 ft. per minute, serves six floors. These lifts are arranged in batteries similar to those in large buildings in America. There are also two goods lifts, each of which is arranged for a load of 1 ton at a speed of 150 ft. per minute, travelling 165 ft. These lifts are also operated by electric control with car switch. Special interlocking gear is fitted to all doors, both for passenger and goods lifts, to prevent any door being opened unless the cage is opposite the same, and to prevent the lift being started unless all the doors are properly closed. This installation has been executed by Messrs. R. Wiggall & Co., Ltd. In our issue of April 9, 1910, illustrations of the Royal Liver Building appeared. The architect was Mr. W. Aubrey Thomas.

The Cherry Tree Machine Company, Ltd., laundry engineers, Blackburn, have been instructed by the Guardians of Elham Union to supply one of their foul-linen washing machines to the Elham Union Workhouse, Lyminge, Folkestone.

Under the direction of Mr. W. A. H. Masters, F.R.I.B.A., Swindon, Boyle's latest patent "air-pump" ventilators have been supplied to St. Luke's Church, Swindon.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Wesleyan Church, St. John's Chapel, Durham.

Messrs. E. H. Shorland & Brother, Ltd., of Failswork, Manchester, have recently supplied some of their warm-air ventilating patent Manchester grates to the Royal Berks Hospital, Reading.

The new church schools, Workop, are being ventilated by means of Shorland's patent exhaust roof ventilators supplied by Messrs. E. H. Shorland & Brother, Ltd.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with (the names of the applicants are given in parentheses).

Lines of Frontage and Projections.

Bow and Bromley.—One-story building at the premises of Spratt's Fatens Ltd., on the eastern side of Morris-road, Poplar (Messrs. Max Clarke & Garbutt for Spratt's Patent, Ltd.).—Consent.

Kensington, South.—One-story addition in front of the main flank wall of No. 11, Queen's-gate terrace, Kensington, to abut upon Gore-street (Mr. F. E. Williams).—Consent.

Lewisham.—Porches to two houses on the eastern side of Dukethorpe-road, Lewisham (Messrs. Edmonds, Ltd.).—Consent.

Lewisham.—Erection of buildings on the southern side of Ferryvale, Lewisham (Messrs. Norfolk & Prior for Messrs. Gosling Brothers).—Consent.

Norwood.—Erection of buildings upon the site of Nos. 125, 130, and 135, Norwood-road, Norwood (Mr. A. R. Westworth).—Consent.

Paddington.—Projecting porch in front of St. Mary's Hospital, on the south-western side of Cambridge-place, Paddington (Mr. C. W. Ferrier).—Consent.

Paddington, South.—Oriol window in front of No. 124, Inverness-terrace, Paddington (Mr. A. Bird).—Consent.

Stepney.—Projecting porch at the Raines Foundation schools, on the eastern side of Arbour-square, Stepney (Mr. H. O. Ellis).—Consent. Wooden cornice in front of the Raines Foundation schools, on the eastern side of Arbour-square, Stepney (Mr. H. O. Ellis).—Refused.

Strand.—Projecting illuminated sign in front of No. 171, Strand (Income Tax Adjustment Agency, Ltd.).—Consent.

Wandsworth.—Hoarding at No. 213, Balham High-road, Wandsworth (Mr. J. A. Markillie).—Refused.

Width of Way.

Rotherhithe.—Erection of a building, to be inhabited by persons of the working class, upon the site of No. 23, Parish-street, Bermondsey (Mr. R. Page).—Consent.

Width of Way and Line of Frontage.

Greenwich.—Erection of buildings on the northern side of Tuskar-street, the northern, eastern, and western sides of Woodland-place, the eastern side of Creed-place, the southern side of Trafalgar-road, the eastern and western sides of Fenton-street, and the western side of Miles-street, Greenwich (Mr. A. Griffin).—Consent.

Width of Way, Line of Frontage, and Construction.

Woolwich.—Iron and glass shelter in front of Nos. 123 and 130, Powis-street, Woolwich (Mr. E. S. Barr for the Premier Electric Theatres, Ltd.).—Refused.

Lines of Frontage and Construction.

Dulwich.—Iron roof over a portion of the forecourt at the bank of No. 117, Lordship-lane, Dulwich, abutting upon Shawbury-road (Mr. W. Morton).—Consent.

Hackney, Central.—Coffee-stall of a temporary character in front of No. 345, Kingsland-road, Hackney (Mr. W. J. Jordan).—Consent.

Holborn.—Iron and glass shelter at the Hart-street entrance to the Kingsley Hotel, Bloomsbury (Mr. J. Truslove).—Consent.

Islington, East.—Temporary iron and glass conservatory at the rear of No. 33, Holloway-road, Islington, abutting upon Loraine-road (Messrs. Jones Brothers (Holloway), Ltd.).—Consent.

Lewisham.—Showcases and notice-boards of a temporary character in front of No. 223, Lewisham High-street (Messrs. Norfolk & Prior).—Consent.

St. George, Hanover-square.—Iron and glass shelter at the entrance to the Victoria Palace, Victoria-street, Westminster (Messrs. F. Matcham & Co.).—Consent.

St. Pancras, South.—Two wooden stalls in front of King's Cross (Metropolitan Railway) Station, Pentonville-road, St. Pancras (Mr. A. C. H. Watkin).—Consent.

Wandsworth.—Wood and glass roof at the bank of No. 135, Micham-road, Wandsworth (Mr. J. R. Bex).—Refused.

Wandsworth.—Temporary wood and iron building in front of Nos. 256 and 258, Micham-road, Tooting (Messrs. Nowell, Parr, & Kates).—Consent.

Lines of Frontage and Spaces at Rear.

Hackney, North.—Erection of a building to be used as a synagogue at the rear of Nos. 124 and 126, Green-lane, Hackney, next to Burma-road (Mr. S. Clifford Teal).—Consent.

St. Pancras, South.—Erection of buildings on the southern side of Compton-street, St. Pancras, to abut also upon the eastern side of Kenton-street (Mr. A. Davis for the London Housing Society, Ltd.).—Consent.

Line of Frontage, Spaces at Rear, and Projections.

Marylebone, East.—Additions at No. 2, Wellington-road, St. John's Wood (Mr. S. J. Wright for Mrs. E. Wright).—Consent.

Frontage and Deviation from Certified Plans.

Westminster.—Oriel window in front of a proposed building on the eastern side of Tufon-street, Westminster (Messrs. A. E. Hughes & Son for "Mr. Fegan's Homes,"—Refused.

Formation of Streets.

Battersea.—Two new streets for carriage traffic on the Battersea-rise House Estate, Clapham Common (Mr. A. Wellings).—Consent.

Hampstead.—New street for carriage traffic to lead from Ornan-road to Belsize-lane, Hampstead (Messrs. W. Woodward & Sons for Mr. A. Ridley Bax).—Consent.

Hampstead.—Erection of buildings upon a site at the rear of Cavendish-mansions, on the southern side of Mill-lane, Hampstead (Mr. J. D. Hunter).—Consent.

Holborn.—New street for foot traffic only in connexion with the erection of buildings upon the site of Fulwood's Rents, Holborn (Mr. H. J. Leaning).—Consent.

Building for the Supply of Electricity.

Strand.—Alterations at the electricity sub-station, Mason's-yard, Duke-street, St. James (Mr. C. Stanley Peach for the St. James and Pall Mall Electric Light Company, Ltd.).—Consent.

Deviation from Certified Plans and Uniting of Buildings.

St. George, Hanover-square.—Re-erection of No. 24, Conduit-street, St. George, Hanover-square, and formation of openings in the party wall between Nos. 24 and 25, Conduit-street, at the basement, ground, first, second, third, and fourth floor levels (Mr. A. Blomfield Jackson).—Consent.

Cubical Extent.

City of London.—Erection of a building upon the site of Nos. 22 to 25, Farringdon-street (Mr. H. O. Ellis for the Amalgamated Press, Ltd.).—Consent.

Uniting of Buildings.

City of London.—Uniting of No. 23, Coleman-street with the Wool Exchange, City, at the ground-floor level (Mr. E. K. Purchase).—Consent.

Fulham.—Openings in the party walls between Nos. 50, 52, and 54, Dawes-street, Fulham, at the basement and ground-floor levels (Mr. W. T. H. Woolcock for Mr. E. Speis).—Consent.

Kensington, North.—Opening in the party wall at the ground-floor level between Nos. 95 and 97, St. Mark's-road, Kensington (Mr. G. H. Solihott).—Consent.

Westminster.—Three openings in the party wall at the basement and ground-floor levels between Nos. 12 and 16, Ashley-place, Westminster (Mr. S. Newcombe for Messrs. A. J. Thompson & Co.).—Consent.

Width of Way and Projections.

City of London.—Erection of a building on the southern side of Lombard-street, City, westward of Clements-lane, at less than the prescribed distance from the centre of the roadway of Lombard-street, and with an oriel window, a hood, and balconies (Messrs. Gordon & Gunton for the Royal Insurance Company, Ltd.).—Consent.

Hackney, Central.—Erection of a building on the southern side of Clarence-place, Hackney, with a boundary wall at less than the prescribed distance from the centre of the roadway of Clarence-mews, and with projecting eaves (Mr. S. Towse for the Viking Bennett Company, Ltd.).—Consent.

Width of Way, Lines of Frontage, Projections, and Construction of Buildings.

St. George, Hanover-square.—Two showcases and a sign at No. 38, Dover-street, Piccadilly (Messrs. J. Barker & Co., Ltd.).—Refused.

Space at Rear and Projections.

Kensington, North.—No. 40, Barbly-road, Kensington, with an irregular open space at the rear, with a bay window in front and with a pent roof over the entrance (Mr. A. Haley).—Consent.

St. Pancras, South.—Erection of a block of working-class dwellings on the northern side of Compton-street, St. Pancras (Mr. A. Davis for the London Housing Society, Ltd.).—Consent.

Deviation from Certified Plans.

Marylebone, East.—Erection of No. 29, Harley-street, St. Marylebone (Mr. S. J. Tatchell for Mr. C. E. Pezzenik).—Consent.

Working-Class Dwellings.

Hampstead.—Erection of three buildings (Messrs. Farebrothers, Ellis, & Co.).—Consent.

Kensington, North.—Dwelling-house intended to be inhabited by persons of the working class at the premises of the London Parcels Delivery Company, Ltd. (Mr. W. E. Trent).—Consent.

Kensington, North.—Dwelling-house intended to be inhabited by persons of the working class at the premises of the Pall Mall Deposit Company, Ltd. (Mr. W. G. Hunt).—Consent.

*The recommendations marked * are contrary to the views of the metropolitan borough councils concerned.*

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

BANBURY.—Additions to factory for Messrs. Henry Stone & Son, Ltd.

Bangor (North Wales).—Workhouse infirmary; Mr. F. Bellis, architect, Bangor.

Barnsley.—Works for Messrs. Wood Bros., glass manufacturers.

Beddington.—School, Sandy-lane; Messrs. Jarvis & Richards, architects, 10, Queen Anne's-gate, S.W.

Birkenhead.—School, Temple-road; Mr. R. T. Jones, Secretary, Education Committee, Birkenhead Town Council.

Birmingham.—Rope factory; Messrs. R. Fenwick, Ltd., builders, William Edward-street, Birmingham.

Blackburn.—Additions to school, Shear Brow; Trustees, Four-Lane Ends School.

Extensions to Town Hall; Architect, Blackburn Town Council.

Bognor.—Twelve houses, Sheepwash-lane; Mr. O. A. Bridges, Surveyor, Bognor Urban District Council.

Bridlington.—Parish hall (2,500 l.); Churchwardens, Christ Church, Bridlington.

Bury.—Enlargement of St. Chad's School; the Managers.

Caerphilly.—School (5,000 l.); Mr. A. O. Harpur, Surveyor, Caerphilly Urban District Council.

Cambourne.—Alterations to Wesley Chapel (1,000 l.); the Pastor.

Cardonald.—House, Hillhead-road; Residential Properties, Ltd., 139, St. Vincent-street, Glasgow.

Cathcart (Glasgow).—Six tenements, Tulloch-street and Rannoch-street; Messrs. Geo. Eadie & Sons, builders, 405, Mathieson-street, Glasgow.

Catterick.—Chapel; Mr. H. Howarth, architect, Darlington.

Cefn Coed.—Asylum; Mr. G. T. Hine, 35, Parliament street, S.W.

Chadsmoor.—Primitive Methodist Church (1,500 l.); Messrs. Jeffries & Shipley, architects, Walsall; Messrs. R. Speake & Son, builders, 76, Stafford-street, Wolverhampton.

Cilfrew.—School (160 places); Architect, care of the North Group of School Managers.

Clyd (North).—School; Messrs. W. & J. R. Watson, Ltd., builders, Neath, Glam.

Coton End.—Additions to school (100 extra places); Mr. Bolton King, Secretary, Education Committee, Warwickshire County Council, Warwick.

Coventry.—Factory, Little Park-street; Messrs. G. & T. Steane, architects, Little Park-street, Coventry. School; Mr. H. Streather, builder, Four Oaks, near Birmingham.

Crossroads.—School (250 places) for the Five Catholic Education Board.

Crowle and Hoo Brooks.—Schools; Mr. A. Rowe, architect, Foregate, Worcester.

Darlington.—Proposed church and Sunday-school; Trustees, Primitive Methodist Church, Eastbourne.

Darnley (Lanes).—Nurses' Home; Mr. R. Kay, builder, Burny-road, Rochdale.

Dolgelley.—Drill-hall (1,000 l.); Mr. R. W. Davies, architect, Carmo, Mont; Mr. John W. Owen, builder, Dolgelley.

Dunstable (Beds).—Theatre (5,000 l.); Luton Dramatic Syndicate.

Edinburgh.—Hall (500 places); Trustees of Mr. John Hope. College (50,000 l.); Board of Management, Royal (Dick) Veterinary College.

Elderslie (Glasgow).—Store, Beith-road, for the Johnstone Co-operative Society, Ltd.

Farleas, N.E.—Enlargement of school; Messrs. Fryers & Penman, architects, Largo.

Gillingham.—Electricity sub-station, Barnsole-road; Mr. A. D. Chalmers, Electrical Engineer, Gillingham Town Council.

Goldenhill.—School (4,600 l.); Mr. P. Pemberton, builder, Tunstall, Staffs.

Goodrich.—Cottage hospital; Mr. A. O. Harpur, Surveyor, Caerphilly Urban District Council.

Halifax.—Conversion of Northgate Hall into cinematograph theatre for the National Electric Picture Company.

Harrington.—Improvements to Lowsea School (1,170 l.); Mr. Harrison Killip, builder, Harrington.

Hellingly (East Sussex).—School (1,640 l.); Messrs. Peckett & Co., builders, Crawley.

Hempstead (Kent).—Extensions to school (1,700 l.); Messrs. Gates & Sons, builders, Frindsbury.

* See also our list of Competitions, Contracts, etc., on another page.

Haywood.—School (800 places), Harwood Park site; Mr. W. A. Heywood, Secretary, Education Committee, Haywood Town Council.

Hull.—Additions to works, St. Paul's-street, for the Hull Forge Company, Ltd., Hull.

Kimberworth (Yorks).—Smallpox hospital (5,000 l.); Messrs. C. Green & Sons, builders, 172, Wellgate, Rochesterham.

King's Langley (Herts).—Infants' school; Mr. A. R. S. Halliday, Secretary, Education Committee, Herts County Council, Hertford.

Lambourn (Warwick).—Sanatorium; Mr. J. Bowen, Surveyor, Reading Town Council.

Landlad.—Additions to public school for the Kirkintilloch School Board.

Lapworth (Warwickshire).—Villas; Mr. Birkett J. Emery, architect, 109, Colmore-row, Birmingham.

Leamington.—Territorial headquarters; Mr. F. Trepess, architect, Warwick; Mr. T. Gathercole, builder, Clarendon-avenue, Leamington. Residence; Mr. F. Smith, builder, Milverton, Leamington.

Llanwrtyd Wells.—Four houses (1,010 l.); Messrs. A. Swash & Son, architects, Llanidrod; Mr. N. Evans, builder, Llanwrtyd Wells.

Lowestoft.—The following plans have been passed:—Motor garage, London-road South, for Mr. F. Waldron; eight houses, Barton-street and Winnipeg-road, for Mr. Geo. Ansell; motor garage, Yarmouth-road, for Mr. J. W. Brook.

Lytham.—Steam laundry, Rutland-road, for the Ansell and Fairhaven Laundry.

Maesmaroch (Glam).—School; Messrs. W. & J. R. Watson, Ltd., builders, Neath.

Milton.—School (2,000 l.); Messrs. Settle & Bantall, architects, Ulverston.

Milton.—School (5,700 l.); Messrs. J. Moss & Son, builders, Milton.

Montacute (Somerset).—Ten houses; Mr. R. W. Burnell, Surveyor, Yeovil Rural District Council.

Muirhead.—School; Messrs. Thoms & Wilkes, architects, 46, Reform-street, Dundee.

Newcastle-on-Tyne.—Sluic, Hambrug Wharf (3,800 l.); Messrs. Wright, Anderson, & Co., builders.

Norwich.—Extensions to mill for the Tenterhouse Bleaching Company.

Norwich.—New Council offices; Mr. A. Collins, engineer, Guildhall, Norwich. House at lunatic asylum (500 l.); Messrs. John Hurn & Sons, builders, Survey-street, Norwich.

Nottingham.—Cemetery chapel, etc. (8,000 l.); Mr. F. E. Lewis, architect, Guildhall, Nottingham.

Nuneaton.—Villas, Manor Park; Messrs. Mayo & Son, architects, Bridge-street, Nuneaton. Liberal club; Mr. F. Hingley, architect, The Square, Nuneaton. Mr. Harria, builder, Attleborough, Nuneaton.

Oswestry.—Almshouses; Mr. G. W. Loay, Surveyor, Oswestry Town Council.

Pixmore (Leitchworth Garden City).—School (4,500 l.); Mr. V. A. Smith, County Surveyor, Herts County Council, Hatfield.

Ratrick.—Church of St. John (5,000 l.); Sir Chas. Nicholson, architect, 2, New-square, E.C.

Slacks-hill.—Enlargement of school (160 extra places); Mr. G. Balfour, Secretary, Education Committee, Staffs County Council, Stafford.

Southam.—School (250 places); Mr. B. King, Secretary, Education Committee, Warwickshire County Council, Warwick.

Southampton.—Enlargement of Portsmouth Depot; Mr. J. A. Crowther, Borough Engineer, Southampton Town Council. The following plans have been passed:—Rebuilding, "Black Horse," Orchard-lane, for Messrs. Weston & Burnett; additions, the Sailors' Home, Oxford street, for Messrs. Mitchell, Son, & Gutteridge, seven houses, Wilton avenue, for Mr. W. Waeeler, nine houses, Newcombe-road, for Mr. W. B. Hill; three houses and stores, Hill-lane, Janson-road, and Shirley-road, for Messrs. Jurd & Sanders; additions, the Yacht Laundry, Lake-road, for Mr. S. Tobbutt; sixteen houses, Shirley avenue, for Mr. F. Lowe; twelve houses, St. James' Park-road, for Mr. F. W. Young, jun.; additions, Sunlight Laundry, Winchester-road, for Mr. G. R. Long; ten houses, Newcombe-road, for Mr. F. J. Paul; motor garage, 247, Millbrook road, for Messrs. Smith & Moore. Plans have been lodged for four houses, etc. Victor-street, for Mr. C. Moody.

Stoneyfield (Hull).—Extensions to works for the Premier Oil Extracting Company.

Swynodry.—Houses for the Summerhill Building Club.

Walsall.—School; Messrs. Hickton & Farmer, architects, Bridge-street, Walsall; Mr. W. Winstanley, builder, Sandwell-street, Walsall.

Waltham Cross (Herts).—School (4,800 l.); Mr. V. County Surveyor, Herts County Council, Hertford.

Walton-le-Dale.—Conservative club-house, Chorley-road; Mr. A. C. M. Lillie, architect, Bamber Bridge.

Whitley Bay.—Cemetery buildings; Messrs. Oliver, Leeson, & Son, architects, Milburn House, Newcastle-on-Tyne.

the London Building Act, although a wall might be a party wall for part of its length, this could never be the case for part of its height.

Sect. 58 of the London Building Act, 1894, provides that "In either of the following cases—(a) where a wall is after the commencement of this Act built as a party wall in any part; or (b) where a wall built before or after the commencement of this Act becomes after the commencement of this Act a party wall in any part; the wall shall be deemed a party wall for such part of its length as is so used." On the other hand, by sect. 5, subsect. 16, a "party wall" is defined as "(a) a wall forming part of a building and used, or constructed to be used, for separation of adjoining buildings belonging to different owners or occupied or constructed or adapted to be occupied by different persons."

The Divisional Court experienced some difficulty in interpreting these sections, but affirmed the decision of the County Court judge, and held that the effect of the two sections was to render a wall a party wall for that portion of its height or length which was used for the separation of adjoining buildings.

The second decision, in the case of *Minturn v. Barry*, we have already noted, the *Builder*, April 14, but, the case being now more fully reported, a word or two may be said upon the decision. It now appears that the party wall in question was originally a garden wall, which had subsequently by user become the party wall of a house. As such it let through the damp, and one of the owners served a party notice proposing to enter the adjoining premises and to insert a damp course. The matter was referred under the Act to arbitration, and the surveyors appear to have adopted the view that if the wall was structurally strong enough to bear the weight imposed upon it it could not be deemed defective or out of repair within sect. 38 of the Act. The County Court judge practically took the same view, holding that no degree of dampness could make the wall defective. The Divisional Court held this decision to be a sufficient degree would make a party wall "defective," and that the condition of the wall must be ascertained by the County Court judge.

LAW REPORTS.

(Before the OFFICIAL REFEREE, Mr. Muir-Mackenzie.)

Action by Contractor against Building Owner.

Minter v. Waldstein.

THE hearing of this case was continued last week, it being an action brought by Mr. F. G. Minter, a contractor, against Mr. Charles Waldstein, Professor of Art at Cambridge University, from whom he claimed 2,750*l.*, the amount payable in respect of a certificate of Mr. Frederick William Foster, an architect, and in respect of a contract made between plaintiff and defendant for the carrying out of alterations and additions at Newton Hall, near Harston. Defendant alleged that the work was defective, and counterclaimed against the plaintiff for 10,000*l.* damages.

Mr. Frederick George Minter, the plaintiff, declared that up to the middle of January, 1911, when Mr. Waldstein refused to pay under the certificate, he had never had any suggestions made to him of bad workmanship in this building. He asked for the defects to be specified. There was nothing which he would have objected to put right had he been called upon to do so.

In cross-examination by Mr. Clavell Salter, K.C., for the defendant, Mr. Minter said that, assuming he were the owner of this house and desired to put these cracks right, he would call the workmen in, and in about three weeks' time everything would be all right. He maintained that he had carried out all his instructions.

Evidence was given by Mr. Frederick Gunnell, manager of the joinery department, employed by the plaintiffs at the Ferry Works at Putney. He deposed that the joinery sent to Newton Hall was satisfactory, and of the best London make.

Cross-examined by Mr. Clavell Salter, the witness agreed that if in a building one found a floor sagging, the plaster partitions cracking, and the joinery opening, the cracks and the openings would probably be caused by the sagging of the floor. Witness was of opinion that the sagging of the floor of one of the bedrooms of Newton Hall had stopped, because he had examined the ceiling underneath the floor, and he thought that if any sagging had taken place in the floor above, the ceiling would certainly have shown serious signs of it.

Mr. Salter: I suppose you have spent a good part of your life in preparing joinery for new houses?—Yes; I have spent twenty-eight years.

I suppose the joinery that you provided is mostly, if not altogether, for Mr. Minter's houses?—For Mr. Minter's contracts.

If these floors sagged, and made your joinery open, you would have to about it quickly?—Yes, certainly. Witness added that during the last decade he had executed a quarter of a million pounds of joinery, and he thought that was a pretty fair record.

Suppose that you have built a first-class dwelling-house—everything tip-top. Would you expect the doors of that house when it is completed to require to be planed at the bottom so as to enable them to be opened?—In a new house there is bound to be swelling and shrinkage. Doors have occasionally to be cased on account of the swelling.

Take a well-built house with fifty doors. Ought I to expect to plane the outside of any of the doors?—Not one in twenty.

It would be bad work, would it not, to put your joinery on wet plastering?—It would not certainly be the right thing to do.

Could you make a good job of this without getting the floor level?—Yes.

Mr. William Woodward, F.R.I.B.A., F.S.I., examined by Mr. Lewis Thomas, said he had seen, practised at 13, South Molton-street, Strand, and was the surveyor of the Honourable Artillery Company. He was also a member of the Council of the Royal Institute and a member of the Practice Committee. He said he had made an inspection of this house on June 28. Leaving out the fissures in the plastering partition, the defects were nothing more than what one would expect in a building of this sort.

Mr. Thomas: Irrespective of who is responsible for the cost, are they of the nature that could easily be put right, as provided in the maintenance clause, in the ordinary way?

—That is my decided opinion. May I add that I believe every architect of experience always tells the client not to expend much money in the decorations until the lapse of two or three years, because there are sure to be these evidences of the result of moisture and shrinkages.

Mr. Woodward added that he advised his clients always to put on a cheap wall-paper at first.

In answer to further questions, Mr. Woodward thought that the fissures and the sagging were not due to bad construction. Regarding the plaintiff's suggestion that the house had been overheated, and that that had caused much of the trouble, Mr. Woodward mentioned that he saw two radiators and one fireplace in each comparatively small room.

Mr. Thomas: I am going to put you this hypothetical question: Assuming this building on completion was subjected to the use of these radiators and hot water pipes and fires, consecutively or jointly, what effect would that have on shrinkage?—It would tend to increase, for example, the opening of the mitres.

Continuing his evidence, Mr. Woodward stated that from what he saw he should be assisted as an architect with the spacing out of the floors. He thought the quality of the timber throughout the building very good. The whole of the timber he saw was as free from knots as any other timber he had seen. He also thought it very good timber because of the soundness of its cut, there being no roughness on the surface. He had also detected a fresh smell, which was only observable in first-class timber, whereas in inferior timber there was a mouldy smell. Regarding the shakes, he had never yet seen timber without shakes. Some were dangerous and others were not. He observed no dangerous shakes in this building. As an architect, he certainly could not complain of the quality of the timber.

In cross-examination by Mr. Clavell Salter, Mr. Woodward said that the alterations would not involve the householder leaving the house, although they would involve the temporary removal from rooms where the alterations were being done. He had not made an examination of the house to see how many floors sagged. He had looked beneath the floor for the signs of sagging.

Mr. Salter: May the Court take it that where you have found no crack in the ceiling below you have assumed the floor above has not sagged?—I have not assumed anything of the sort. I assumed that when the floor joists were put in they did, as most joists do, sag. If the floor had continued to sag, it must have cracked, and the plastering of the ceiling would have been affected.

Asked how many of these doors had to be cut at the bottom in order to enable them to be opened, Mr. Woodward replied that, judging from his inspection, he should say very few. It was his opinion that the maintenance clause was to provide against settlements and subsidences. He thought the roof sufficiently strong for its purpose. He was not mistaken in the view that the roof was made of a more acute pitch. The exact opposite was not done, and the roof was not flatter than contemplated. If one regarded it as an angle, it probably was

flatter than 45, but it had increased in height 2 ft.

In the course of further cross examination Mr. Woodward insisted that he frequently found a worse state of things than that at Newton Hall in first-class buildings, where money was no object and first-class builders were employed. With the exception of the prominent cracks in the plastered partition of the first floor, the witness unhesitatingly said this house at Cambridge was a fair average first-class building. In re-examination, he said there was not the least sign of weakness in the ground floors.

The Official Referee asked the witness assuming that the materials and workmanship were in accordance, as he said, with the drawings and specifications, it was suggested that the builder should make good certain defects.

Mr. Woodward: Because we assume that the materials and workmanship are of the best, but we know that these materials and workmanship are subject to these shrinkages and defects in consequence of the weather, dampness, heat, and other things affecting the building.

Evidence was also given on behalf of the plaintiff's case by Mr. Harley Mackenzie, a surveyor and sanitary engineer, who deposed amongst other things, as to sewerage plans, the work at Newton Hall, and by Mr. Leonard Withers Green, an architect. The latter said he was accustomed to the superintendence of building contracts. In connexion with the work at Newton Hall Mr. Foster, the architect, instructed him to act as clerk of alterations, and Mr. Minter was to take instructions. Witness was in constant communication with both Mr. Foster and Mr. Minter. Mr. Waldstein, who gave him instructions from time to time. The plaintiff carried out the alterations and additions in accordance with those instructions approved—as witness always understood—by the architect, who witness had never hesitated to consult.

Mr. Blanco White: You were present from February till November 16. What do you say as to the way the work was carried out? Well, it was carried out very efficiently. Witness added he had never heard Mr. Foster complain of workmanship and materials. Professor Waldstein knew that orders were given for variations.

The case was proceeding when we went press.

Damage by Sewage Flooding.

A CASE of importance to sanitary authorities has recently been decided in the Pontefract County Court.

The plaintiff in the action—Marchant Castleford Urban Council—sued for damages from the flooding of his premises arising from the defendants' sewage on certain specified dates, and also for an injunction restraining defendants from permitting further flooding.

Negligence was alleged under two heads (1) by the wrongful diversion of a sewer in the construction of the original system of sewerage.

For the defence, evidence was given to effect that no sewer diversion had been made by Mr. Paterson, M.Inst.C.E., Bradford engineer for the original scheme of sewerage described the provision made by him for sewage and storm water. This he considered more than ample, and ascribed the cause of flooding to "phenomenal rainfall," for which it was practically impossible to make provision on account of the enormous expense involved. In the course of his evidence Mr. Paterson mentioned the fact that in his own garden about twenty miles from the locus, on one of the specified dates of flooding he had measured a rainfall of $\frac{3}{4}$ in. in thirty minutes, and during shorter periods the intensity of fall much greater.

His Honour Judge Benson delivered judgment at the Pontefract County Court. His judgment was that plaintiff sought to succeed on grounds—(1) negligence by the divergence of sewer about 1890, and (2) negligence of construction of the original system. The onus of proof on plaintiff to prove one or other of these heads plaintiff alleged that some alterations after defendant Council had completed original system they wrongfully diverted sewer connecting Leeds-road with Saville-street, thereby causing damage to plaintiff's premises. The judge found that there had not been such diversion, and the idea that plaintiff thereon was entirely erroneous. As to second allegation of negligence—that the original scheme, carried out about 1870, had negligently constructed the system was very well for many years, and there was indication of any negligence. The growth of the district had made the present capacity

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvi.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

31. — **Lowestoft.** — **SCHOOL.** — The Education Committee invite designs for an elementary school for 500 boys at Roman-Three premiums are offered: 20, 10, and 5. See advertisement in issue of June 16 for particulars.

32. — **Wellington.** — **NEW PARLIAMENT.** — Premiums of 1,000, 500, 1,000, 10, are offered for the competitive designs from the Architect of Public Works, Wellington, New Zealand.

33. — **IDEAL COUNTRY HOUSE.** — 1000. offered Daily Mail, Carmelite House, E.C., for a country house, to cost from 9000.

34. — **Mr. E. C. P. Monson, F.R.I.B.A.,** and J. S. Sadgrove, F.R.I.B.A., and others, invite designs for a public bath.

35. — **Northwich.** — **PUBLIC BATHS.** — Northwich U.D.C. invite designs for public baths. See advertisement in this issue for further particulars.

36. — **Elmston.** — **LAYING-OUT SCHEME.** — Premiums of 400, and 100, are offered by the U.D.C. for lay-out scheme. Particulars from the Town Surveyor, Elmston.

37. — **Berne.** — **MONUMENT.** — Designs for a monument at Berne to celebrate the foundation of the International Telegraph Union. Conditions may be seen in the library of the Royal Institute of British Architects.

38. — **19-25.** — **ATHENS.** — **COURT OF JUSTICE.** — International competition is instituted by the Ministry of the Interior, for the erection of buildings, to cost 160,000. The Official programme may be seen at the Library of the Ministry.

39. — **Manchester.** — **LIBRARY AND READING ROOMS.** — Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

40. — **Holland.** — **STAINED GLASS WINDOWS.** — Designs are invited for a stained glass window to be erected in the University at Utrecht. See advertisement in issue of June 9 for particulars.

41. — **Marylebone.** — **NEW MUNICIPAL BUILDINGS.** — Premiums of 1000, 750, 500. The designs are invited (Alexander Thomson, Architect) for a bridge. See advertisement in issue of July 14 for further particulars.

42. — **City of St. Petersburg.** — **DESIGN FOR A BRIDGE.** — Particulars in our issue of August 13, 1910.

43. — **Glasgow.** — **DESIGN FOR A BRIDGE.** — Designs are invited (Alexander Thomson, Architect) for a bridge. See advertisement in issue of December 24 for further particulars.

44. — **1912.** — **ANSTRALIA.** — **DESIGNS FOR A CAPITAL CITY.** — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital. See advertisement in issue of July 7 for particulars.

45. — **Nottingham.** — **BAPTIST CHURCH PREMISES.** — Limited to Nottingham architects. Particulars from Messrs Rorke & Jack, 10, King-street, Nottingham.

46. — **Salford.** — **EXTENSION OF OFFICE BUILDING ON WORKHOUSE SITE AT ECCLES NEW.** — Premiums 200, and 100. Particulars from Ward of Guardians, Salford.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

22. — **Carlton.** — **ADDITIONS.** — Erection and alterations to the Welsh church, Carlton. Plans and specifications seen, and quantities taken. Crawshaw & Wilkinson, architects, Carlton-street, Burslem.

23. — **Kent.** — **REPAIRS.** — For repairs at the dwelling-house at East Peckham Girls' School. Specifications by the Committee. Architect, Mr. Wilfrid H. Robinson, House, Westminster.

24. — **Nottingham.** — **CHAPELS, ETC.** — Erection of a chapel, entrance lodge, etc., at Southern Cemetery, Wilford-hill. Plans and specifications and quantities from the architect, Mr. F. B. Lewis, Guildhall, on deposit of 20.

25. — **Deal.** — **ADDITION.** — Erection of an addition to the hospital hut at the Fever Hospital. Plans and specifications, etc., from

Mr. T. C. Golder, Borough Engineer and Surveyor, 23, Queen-street, Deal.

26. — **Kent.** — **REPAIRS, ETC.** — Execution of repairs, painting, and alterations to drains at the Sellindge Council School. Specifications and plans with Mr. W. H. Robinson, Caxton House, Westminster.

27. — **Westerham Hill.** — **COTTAGE.** — Erection of a cottage and other contingent works for the Metropolitan Water Board. Drawings, condition of contract, and specification at the offices of the Board (Chief Engineer's Department), Grosvenor-court, Strand. Deposit of 10.

28. — **Accrington.** — **CHURCH.** — Erection of first portion of Church of St. Paul, Barnfield. Mr. H. Ross, architect, 15, Cannon-street, Accrington.

29. — **Bierley.** — **RESTORATION, ETC.** — Restoration and enlargement of Bierley schools. Plans and quantities from Messrs T. H. & F. Healey, architects, 42, Tyndal-street, Bradford.

30. — **Bridlington.** — **ALTERATIONS.** — For alterations to the Corn Exchange. Drawings, specification, and conditions with Mr. J. Barnshaw, architect, Carlton House, Bridlington.

31. — **Cardigan.** — **IMPROVEMENTS.** — For carrying out improvements to the Council schools. Plans and specifications seen, and particulars from Mr. G. Dickens-Lewis, County Architect, Aberystwyth.

32. — **Cwmilly.** — **CHAPEL.** — Erection of a Primitive Methodist chapel. Plans and specifications with the Rev. T. Humphries, Bourne House, Somerset-street, Aberystwyth.

33. — **Ealing.** — **W. SWIMMING BATH.** — The Ealing T.C. invite tenders for new swimming bath at Longfield-avenue. See advertisement in this issue for further particulars.

34. — **Essex.** — **BUILDINGS.** — Erection of new dormitory buildings, Convalescent Home, Harold, W. Essex. Plans and specification seen, and quantities from Mr. John G. Morley, Borough Engineer, Town Hall, West Ham, E., on deposit of 10.

35. — **Pocklington, Yorks.** — **SCHOOL.** — Renovation of the Science and Manual Instruction Buildings, for the Governors of the Pocklington School. Plans and specifications at the School. Mr. Thomas Robson, Clerk to the Governors, Pocklington.

36. — **Ripon.** — **CHIMNEY.** — Taking down the chimney-stack at the old water-works. Mr. M. Kirkley, Town Clerk, Town Hall, Ripon.

37. — **Greetland.** — **TOWER.** — Erection of a sprinkler tower at Prospect Mills. Drawings and specifications for quantities from Messrs Clement Williams & Sons, architects, Post Office-buildings, Commercial-street, Halifax.

38. — **Halifax.** — **HOTEL, ETC.** — Erection of a house and open cart-shed at Stainland. Plans and specifications seen, and quantities from Mr. L. Coates, A.R.I.B.A., architect, 10, Central-street, Halifax.

39. — **Littleborough.** — **SHOP, ETC.** — Erection of a branch shop and two dwelling-houses at Centre Vale. Quantities from the architect, Mr. Herbert H. Clough, Butts-avenue, Rochdale. Deposit of 10.

40. — **Liverpool.** — **STORES.** — Erection of new stores. Drawings seen, and specifications from Mr. H. Stead, architect, Heckmondwike.

41. — **Llanrhaidar.** — **MANSE.** — Erection of a manse for the C.M. Church, near Oswestry. Plans and specifications from Mr. R. W. Davies, M.S.A., architect and surveyor, Carmo.

42. — **Manchester.** — **LIBRARY.** — Erection of a temporary library. Drawings seen, and specifications and quantities from the City Architect, Town Hall. Deposit of 10.

43. — **Oldham.** — **CHIMNEY, ETC.** — Construction of a new building and chimney for the grease disposal plant at the sewage works. Particulars from Borough Surveyor's Office. Deposit of 10.

44. — **Thorne.** — **REPAIRS, ETC.** — Repairs and improvements to Hatfield Levels Council School. Specifications from Mr. E. L. Harrop, Divisional Clerk, W.R. Education Offices, Goolse.

45. — **Belfast.** — **PAVILIONS.** — Erection of two pavilions and additions to the diphtheria pavilion at the Infectious Diseases Hospital at Purdyburn. Plans and specifications with Messrs Young & Mackenzie, architects, Scottish Provident-buildings, and quantities from Mr. Acheson Fernison, quantity surveyor, Scottish Provident-buildings, on deposit of 50.

46. — **London.** — **VARIOUS WORKS.** — Construction of sundry buildings, roofs, bins for road materials, etc., at depot, Richmond-street, Edgware-road. Drawings and specifications seen, and quantities from the Architect, Mr. T. W. Aldwinckle, 20, Denman-street, London Bridge, S.E.

47. — **Nantwich.** — **ALTERATIONS, ETC.** — For alterations and additions to the school buildings, Wistaston. Plans and specifications with Mr. H. Beswick, County Architect, Newgate-street, Chester. Deposit of 10.

48. — **Pennington.** — **ADDITIONS, ETC.** — Rebuilding of farmhouses, also alterations and additions to farm buildings, at Holebiggerah. Plans and quantities from Messrs J. W. Grundy & Son, architects and surveyors, Central-buildings, Ulverston.

49. — **Fenyddaren.** — **VILLAS.** — Erection of about twenty semi-detached villas. Plans and specifications with Messrs Johnson & Richards, architects, Merthyr Tydfil.

50. — **Southampton.** — **ADDITIONS, ETC.** — For alterations, additions, repairs, etc., at Bishop's Waltham girls' and infants' and boys' schools. Plans and specifications from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 10.

51. — **Walney Island.** — **ROOM, ETC.** — Erection and completion of a tramway waiting-room and convenience at Bigger Bank. Plans and quantities from the Borough Engineer, Town Hall, Barrow-in-Furness.

52. — **Cheshire.** — **SCHOOL.** — Erection of high school for girls at West Kirby. Plans and specifications seen, and quantities, on deposit of 20, from Mr. H. Beswick, County Architect, Newgate-street, Chester.

53. — **Merton.** — **OFFICES.** — Erection of additional offices. Plans and specification seen, and quantities, on deposit of 20, from Mr. G. Jerrard, Surveyor, Council Offices, Merton.

54. — **Pyle.** — **CHAPEL.** — Taking down old buildings and erecting a new chapel and school-room. Plans and specifications from Messrs Evans & Jones, architects, High-street, Port Talbot.

55. — **Belfast.** — **HALL.** — Erection of a village hall at Broughshane. Plans and specifications with Mr. Thomas Houston, architect, Kingscourt, Wellington-place, Belfast.

56. — **Oswestry.** — **HOUSES.** — Erection of ten almshouses. Plans and specifications seen, and quantities, on deposit of 10, from Mr. G. W. Lacey, Borough Engineer and Surveyor, Guildhall, Oswestry.

57. — **Selby.** — **COTTAGES.** — Construction of eight cottages at the depot. Plans and specifications from Mr. Bruce Gray, C.E.F.R.S. Ed., Council Offices, Selby.

58. — **Ashington.** — **WAREHOUSE.** — Erection of a warehouse, fodder house, and other alterations. Plans and specifications with Mr. O. Llythe, architect, Ashington.

59. — **Robbing Kent.** — **LAVATORY ACCOMMODATION.** — The Kent Education Committee invite tenders for lavatory accommodation at Council School, Robbing. See advertisement in this issue for further particulars.

60. — **Boston.** — **ALTERATIONS.** — Alterations to premises, Bridge-street. Plans and specifications with Messrs Killingsworth & Son, Dolphinstown, Boston.

61. — **Chesterfield.** — **COTTAGE, ETC.** — Erection of a cottage, stable, cart-shed, tripe-dressing shed, and appurtenant buildings. Plans and specification from the Borough Surveyor's Office, Salford Gate. Deposit of 10.

62. — **Eccles.** — **ALTERATIONS, ETC.** — Alteration of the Eccles and Patricot Hospital, and erection of a new wing. Plans with the architect, Mr. John Knight, Haworth-buildings, 6, Cross-street, Manchester. Quantities, on deposit of 20, from Mr. Edwin Parkes, Hon. Secretary, Town Hall, Eccles.

63. — **Sheerness.** — **ALTERATIONS.** — The Kent Education Committee invite tenders for alterations, painting, and repairs at Mile Town Council School, Sheerness. See advertisement in this issue for further particulars.

64. — **Wakefield.** — **POINTING, ETC.** — For pointing etc., to be done to the tower of the Town Hall. Specification seen, and forms of tender from Mr. J. P. Wakeford, City Surveyor, Town Hall, Wakefield.

65. — **Walsall.** — **CONVENTENCE.** — Construction of an underground convenience. Drawings and specifications seen, and quantities from Borough Surveyor, Council House, Walsall. Deposit of 20.

66. — **Southampton.** — **ALTERATIONS.** — For alterations at the Sholing Council School. Plans seen, and specification from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 10.

67. — **Brighton.** — **RECEIVING HOMES, ETC.** — The Guardians of Brighton invite tenders for four receiving homes and a separate infirmary on land adjoining Warren Farm Schools at Rottingdean. See advertisement in this issue for further particulars.

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 8.—Dublin.—SHOPS.—The Great Southern and Western Railway are prepared to receive tenders for the erection of new wagon and carriage shops at Inchicore, Dublin. Form of tender, specification, and quantities from the Company's Engineer, Inchicore, Dublin, on deposit of 2l. 2s.

AUGUST 9.—Badyr.—RESIDENCE, ETC.—Erection of a villa residence, with garage, etc. Drawings and specification with Mr. W. H. Dashwood Caple, F.R.I.B.A., 3, Church-street, Cardiff.

AUGUST 10.—Castletford.—SCHOOL.—For alterations and repairs at the Castletford Wheldonians Council School. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 1l.

AUGUST 19.—Dover.—SCHOOL.—The Dover T.C. invite tenders for infants' school at Bulwark Hill, Dover. See advertisement in this issue for further particulars.

NO DATE.—Belfast.—HOUSES.—Erection of business premises and terrace of houses at Cregagh-road. Plans, specification, and particulars from Mr. J. V. Brennan, architect, Belfast Bank-chambers.

NO DATE.—Darrington.—HUNT BUILDINGS.—Erection and completion of the Zeland Hunt new buildings, comprising kennels, stables, four cottages, cart-house, flesh-house, etc. Quantities from Messrs. J. J. Taylor & Minor, A.R.I.B.A., architects and surveyors, Post Office-chambers, Darrington.

NO DATE.—Hawarden.—RESIDENCES.—Erection of a pair of semi-detached residences at Elwice Green. Plans and specification from Mr. P. A. Roberts, M.S. architect and surveyor, East-road, Mold. Deposit of 2l. 2s.

NO DATE.—Kendal.—BATH.—For building a swimming bath, pavilion, and gymnasium at the Kendal Grammar School. Plans and quantities from Mr. John Hutton, architect, Kendal.

NO DATE.—Kendal.—HALL.—Erection of parish church hall. Plans and quantities from Mr. John Hutton, architect, Kendal.

NO DATE.—Newcastle.—COURTROOMS, ETC.—Erection of new picture-gallery and billiard hall. Mr. H. Booth, architect, Haslingden, Lancashire.

NO DATE.—Watford.—PREMISES.—Erection of a new business premises in Queen's-road. Plans and specification with Mr. Chas. P. Ayres, architect, 6, The Parade, High-street, Watford.

NO DATE.—Weymouth.—SCHOOL.—Erection of a secondary school. Drawings by Messrs. Crickmay & Sons, architects, 21, Mary-street, Weymouth. Deposit of 2l. 2s.

ENGINEERING, IRON, AND STEEL.

JULY 24.—Ilford.—CULVERT.—Constructing a reinforced concrete culvert in the South Park. Forms of tender and particulars from Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Ilford, on deposit of 2l. 2s.

JULY 27.—Cardiff.—STERILISING APPARATUS.—Provision of steam sterilising apparatus, etc., at the Workhouse. Specification by Mr. S. W. Allen, M.I.M.E. Mr. A. J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

JULY 28.—Guildford.—FRAMEWORK, ETC.—Supply and erection of steel framework for the proposed new coal store; erection of a travelling talpher and coal grab; erection of a set of water-tube condensers. Specifications and particulars from Mr. P. C. Cleasby, Gas Offices, Guildford. Deposit of 10s. 6d.

AUGUST 1.—Glamorgan.—HEATING APPARATUS.—Supply and erection of one new hot-water apparatus at Angelton Asylum, near Bridgend. Specifications from Mr. W. E. R. Allen, Clerk to the Committee of Visitors, Glamorgan C.C. Offices, Westgate-street, Cardiff. Drawings with the consulting engineer, Mr. H. T. Sully, Southfish Widows' Buildings, Bristol.

AUGUST 7.—Matlock.—MILLS, ETC.—For the laying of mains and services, for the Chapel Whaley and District Gas Company. Specification, with quantities, from Mr. Thomas Brown, engineer, Fern Bank, Matlock.

AUGUST 9.—Southampton.—HEATING.—The Southampton C.C. invite tenders for low-pressure hot-water apparatus at (1) Robin Sholing Infants' Council School; and (2) Greathead Council School. See advertisement in this issue for further particulars.

AUGUST 10.—Hemel Hempstead.—HEATING AND LIGHTING.—The Hemel Hempstead Education Authority invite tenders for low-pressure water heating and lighting. See advertisement in this issue for further particulars.

AUGUST 12.—Witchington.—BOILER.—Supply and delivery at the Withington Baths one Lancashire boiler, 28 ft. long by 8 ft. diameter; one

economiser of forty-eight pipes, and engine, etc. Specification from the City Architect, Town Hall. Deposit of 1l. 1s.

NO DATE.—Wolverhampton.—GENERATING STATION.—Erection of a complete station, including buildings and plant to generate direct current at 440 volts, with a continuous output of 1,000 k.w. for the Knowles Oxygen Company, Ltd., Wolverhampton.

FURNITURE, PAINTING, MATERIALS, ETC.

JULY 24.—Ebbw Vale.—PAINTING, ETC.—Painting and colouring the Rassan Council School and the Tylwyn Council School. Specification with the architect, Mr. Henry Waters, M.S.A., Market-chambers, Ebbw Vale.

JULY 25.—Bargoed.—PAINTING, ETC.—For painting and decorating the Cottage Hospital. Particulars from Mr. Geo. Kenshole, M.S.A., Station-road, Bargoed.

JULY 25.—Isle of Wight.—PAINTING, ETC.—For repairing and painting various schools. Mr. F. G. Flux, Secretary, County Education Offices, Newport, I.W.

JULY 25.—London, N.W.—PAINTING, ETC.—The Willenden D.C. invite tenders for cleaning and painting works at Public Offices and Education Offices, Dyne-road, Kilburn, N.W. See advertisement in this issue for further particulars.

JULY 25.—London.—PAINTING, ETC.—Painting the whole of the external ironwork of the Workhouse in Endell-street; also of the Guardians' offices and the receiving house for children and nurses' home in Broad-street, Bloomsbury. Mr. James Appleton, Clerk to the Guardians, Guardians' Offices, 57, Broad-street, Bloomsbury, W.C.

JULY 26.—Bradford.—PAINTING.—For painting at the St. James's Market, Abattoirs, and Cold Storage. Specification from City Architect, Town Hall, Bradford.

JULY 26.—Kent.—PAINTING, ETC.—For painting and repairs at the Kippie Council School. Specification by the Committee's Architect, Mr. W. H. Robinson, Caxton House, Westminster.

JULY 26.—Stourton.—PAINTING, ETC.—The Midland Railway Company are prepared to receive tenders for cleaning and painting wagon shops at Stourton, wheelwright's shop at Hunslet-lane, and carriage shops at Leeds. Specifications seen, and quantities and particulars from the Engineer's Office, Derby Station.

JULY 27.—Kent.—PAINTING, ETC.—For painting and repairs at the Rainham Council School. Specifications by the Committee's Architect, Mr. W. H. Robinson, Caxton House, Westminster.

JULY 27.—Thanet.—REDECORATION.—Interior redecoration on the first floor of the administration block of the Thanet Isolation Hospital. Haine. Specification from the Board's Architect, Mr. E. Bertram Langham, Bank-chambers, High-street, Broadstairs.

JULY 28.—Richmond.—PAINTING.—For painting the conservatory and greenhouses at the Terrace Gardens. Particulars and specification from the Borough Surveyor, Town Hall, Richmond.

JULY 29.—Frimley.—FENCING.—Supply and fixing of wrought-iron unclimbable fencing. Particulars from the Engineer and Surveyor to the Council, Mr. T. Clement Jones, Municipal Buildings, Camberley.

AUGUST 1.—Brighton.—PAINTING.—For painting external wood and iron work, etc., of the Workhouse. Specification from Messrs. Denman & Matthews, Architects for the Guardians, 27, Queen's-road, Brighton.

AUGUST 1.—Exeter.—PAINTING, ETC.—For whitewashing, painting, varnishing, etc., the Workhouse Infirmary. Specification at the Workhouse.

AUGUST 1.—Isleworth.—PAINTING, ETC.—The Guardians of the Brentford Union invite tenders for repairs, cleansing, painting, etc., to infirmary, workhouse, offices, and schools at Isleworth, Middlesex. See advertisement in this issue for further particulars.

AUGUST 2.—London, N.E.—CLEANING.—The Hackney Guardians invite tenders for cleaning various wards, etc., at Infirmary, High-street, Homerton, N.E. See advertisement in this issue for further particulars.

AUGUST 2.—London.—PAINTING, ETC.—For painting, cleansing, and repairs at branch school, 26-28, Lower Clapton-road, N.E. Specification seen, and particulars from Mr. F. J. Smith, architect, Parliament-mansions, Victoria-street, S.W.

NO DATE.—Ipswich.—PAINTING.—For painting, etc., at the Mental Hospital. Specifications from Mr. E. Buckham, Borough Surveyor, Town Hall, Ipswich.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Rhedolain Council School. Specification from the County Architects, Messrs.

Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Corwen Council School. Specification from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Bala Council School. Specification from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Tal-y-nant School. Specification from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Celyn Council School, Bala. Specification from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

NO DATE.—Merioneth.—PAINTING.—For painters' work at Tal-y-nant School. Specification from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Yn Borth, S.O.

ROADS, SANITARY AND WATERWORKS.

JULY 26.—Ireland.—SEWER.—Construction of an iron pipe sewer at Dunleary, Kingstown, Co. Dublin. Plans and specifications by Messrs. Kelly, Barry, & Ross, C.E.s, 45, Kildare-street, Dublin.

JULY 26.—Limerick.—PIPES.—Supply of S. and K. water main pipes. Specifications from Mr. J. J. Peacocke, B.A., B.E., City Surveyor, Town Hall, Limerick.

JULY 26.—London.—STREETS.—For private street improvements in Wood Green. Plans, general conditions seen, and quantities from the Engineer and Surveyor to the Council, Town Hall, Wood Green. Deposit of 1l. 1s.

JULY 26.—Neath.—STREETS, ETC.—Recreation ground and sites for workers' dwellings. Mountpleasant. Drawings and specifications seen, and quantities, on deposit of 2l. 2s. 1d. Borough Engineer, Mr. J. M. Jenkins, Assoc. M.Inst.C.E., Gwyn Hall, Neath.

JULY 27.—Sale.—ROADS.—For draining, levelling, metalling, kerbing, channelling, paving, and making good roads. Plans and specifications seen, and quantities from Mr. W. F. A.M. Inst.C.E., Engineer and Surveyor, Council Offices, Sale, on deposit of 1l. 1s.

JULY 28.—Glasgow.—ROADS.—Erection of a section of roadways and walks in connection with the new Epileptic Colony, East Muckalee. Specification and quantities from Mr. J. R. Moton, Inspector of Clerks, George-street, Glasgow. Deposit of 1l. 1s.

JULY 29.—Southwick.—FLINTS.—Supply 100 yds. of dug flints. Forms of tender from Mr. G. W. War, Surveyor, Town Hall, Southwick, Sussex.

JULY 30.—Sevenoaks.—GRANITE.—Supply 400 yds. or more of granite. Forms of tender, specifications, and conditions from Mr. J. R. Moton, Inspector of Clerks, George-street, Glasgow. Deposit of 1l. 1s.

JULY 31.—Caerphilly.—GRANITE.—Supply broken granite metalling. Specification from Mr. Alfred O. Harpur, Engineer and Surveyor, Caerphilly.

JULY 31.—Chesterfield.—SEWAGE.—Laying of sewers and water drains. Plans and specifications seen, and quantities, on deposit of 1l. from the Borough Surveyor's Office, Salter's Lane, Chesterfield.

JULY 31.—London.—STREET.—Repairs to part of Fortia Green-avenue, Muswell Hill. Forms of tender, etc., and particulars from B. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, Highgate.

AUGUST 1.—Isle of Wight.—DRAINAGE.—Sewering the hamlet of Chalkley. Plans, specifications, and conditions at the Council-chambers, Mr. John Marsh, Clerk to the Council, Council-chambers, Shanklin, I.W.

AUGUST 1.—Watford.—ROADS.—For making up roads. Plans and specifications seen, quantities from Mr. D. Waterhouse, Eng. and Surveyor to the Council, on deposit of 10s. 6d. Watford.

AUGUST 2.—Littlehampton.—MATERIALS.—Supply and delivery of road materials. Forms of tender from the Council's Surveyor, Mr. Howard, F.S.I., Town Offices.

AUGUST 3.—Cork.—DRAINAGE.—Execution of main drainage scheme for Douglas and B. rock. Bills and quantities at the Council Offices. Deposit of 2l.

AUGUST 9.—Fetchar.—SEWAGE.—Construction of sewerage and sewage disposal works, and sections seen, and specifications, and quantities from Messrs. Strachan & Wicks, engineers, 9, Victoria street, Westminster. Deposit of 2l. 2s.

AUGUST 1.—Sutton.—SEWAGE.—For new sewage disposal works. Drawings and specifications, quantities, and form of tender from the Surveyor to the Council, Mr. Henry Jones, Council Offices, Ewell-road. Deposit of 10s. 6d.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Applicants to be received.
*CLERK OF WORKS	West Ham Education Com.	3l. 3s. per week	July
*EXAMINERS (4)	San. Inspectors' Exam. Board	See advertisement in this issue	Aug.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
NATION ANNEKE, WESTMINSTER ABBEY—On the Premises	Horne & Co.	July 24
OLD BUILDING LAND, CHISWICK, W. Windmill Hotel, High-road, Chiswick	Tyser, Greenwood, & Co.	July 26
LS, BATTENS, BOARDS, TIMBER Etc.—Great Hall, Winchester House, E.C.	Churchill & Sim	July 26
OLD PROPERTY, WHITECHAPEL—At the Mart	Fanebrother, Ellis, & Co.	July 27
OLD PROPERTY, LAND, ETC., MORTLAKE, At the Mart	Fanebrother, Ellis, & Co.	July 27
INEER'S PLANT, TOOLS, AND STOCK, SOUTHWARK, S.E.—On the Premises	Henry Shirley-Price	July 31
OLD BUILDING SITE, SOUTHWARK—At the Mart	F. W. Piel	July 31
OLD SITE, KENSINGTON At the Mart	S. Walker & Son	Aug. 1

LAW REPORTS Continued from page 84.
sowers, especially in times of storm, too
l. He held that there had not been any
agency in carrying out the original scheme.
The only remedy appeared to be under
299 of the Public Health Act. He gave
leave for defendants, with qualifying fee
Mr. Paterson.

OBITUARY.

Mr. J. R. Hacking.
John R. Hacking, a young Glasgow
lect, who, in conjunction with Mr.
am Henderson, was recently awarded a
first guineas premium for his competitive
plans for the Manchester Library and Art
Building at Edinburgh on Saturday at
age of twenty-nine.

FOREIGN AND COLONIAL.

Brigade Station, Antwerp, Belgium.
M. Consul-General at Antwerp (Sir E. C.
slet) reports that tenders are invited by
municipal authorities of that city for the
erection of a first brigade station on the
boulevard quay. The estimated value of
contract is 13,350 frs. (about 534l.), and a
bit of 1,000 frs. (40l.) will be required with
tender. Tenders must be sent in sealed
envelopes to the Mayor, Hôtel-de-Ville,
Antwerp, to arrive not later than July 24. The
prix des charges may be obtained (price 1
fr.) at the Hôtel-de-Ville, Antwerp. A copy
may be seen by British firms at the Commer-
cial Intelligence Branch of the Board of Trade,
Whitehall-street, London, E.C.

Works in Portuguese East Africa.
M. Trade Commissioner for South Africa
has announced that the Mozambique Company has
announced its intention to establish a firm
with modern appliances. An additional
factory is to be built over the Chiveve, and
the works are to be taken to establish a tele-
graph and a telegraph service. A new hospital
school for European children are to be
built. The port captain of Ponta Goa is to
order the necessity for new buoys. The
company intends to do its utmost to secure the
immediate construction of the Sona railway.

University Buildings, Rome.
The Gazzetta of July 6 publishes a decree
issued in favour of the Ministry of Public
Instruction a sum of 3,000,000 lire (120,000l.)
for the construction of buildings in the Royal
University of Rome. The operations will
be completed over a period of five years.

TRADE CATALOGUES.

We have received from Mr. John P. White,
of the Pygmy Works, Bedford, and 134, New-
street, London, W., a small pamphlet
entitled, "English Oak and its Application,"
increasing use of foreign oak has only
led to show the superiority of our native
oak in durability, texture, grain, and figure,
and is not ready shown by the numerous
examples still extant of oak-framed houses
from many hundred years back.
Oak seasons slowly; some of the oak
in the Pygmy Works has been in the
yards for over sixty years. The
timber, of all sizes and ages, repre-
sents many years of careful selection, and the
timber furniture into which it is metamorpho-
sed by Mr. White is worthy of its origin.
The designs are good, and reminiscent of the
work of our own men, but our ships,
"beasts of oak." Oak panelling recently
used at Longstone Hall, Cambs, to the
admiration of Messrs. Simpson & Ayrton, is also
derived from the booklet.
The Dallet Electric Clock Company, of
Lancaster, Holborn-viaduct, London,
send us a price-list of their system of
electric clocks. In the case of a railway or
other building where a number of clocks
are required to keep uniform time the ad-
vantage of a master clock controlling any
number of secondary dials is obvious. This is

the Dallet system, which has the further
recommendation that no winding is necessary
in either master or dials, the energy being
obtained from primary batteries of the ordi-
nary type used for electric bells, or from a
direct current electric supply. In effect the
system amounts to the substitution of one
clock for many, and should be eminently suit-
able for factories, schools, hotels, hospitals,
business premises, railways, and a thousand
and one other cases where time is of value.

PATENTS.

APPLICATIONS FOR PATENTS.
14,930 of 1910.—Wilfred Andrew: Cows for
chimneys, ventilating shafts, and the like.
15,655 of 1910.—Paul Decauville.—Presses for
moulding cement bricks and the like.
15,995 of 1910.—Bertram Howard Lane:
Means for preventing the rattling of window-
sashes.
19,254 of 1910.—Max Nolden and Paul
Meyer: Ways.
23,319 of 1910.—Herbert Maiden: Skips and
the like for loading and unloading.
23,354 of 1910.—Jean Baptiste Maxime
Alfred Colletas: Method of treating plaster,
cement, and like surfaces.
25,759 of 1910.—Alexander Percy White:
Lathing for strengthening walls, ceilings, and
the like.
25,760 of 1910.—Max Clark: Process of and
apparatus for making figured or relief wood
mouldings.
170 of 1911. The Firm of Sautels Frères:
Device for securing doors against vibration
when in the closed position.
4,274 of 1911.—Magnus Jonsson: Tensioning
members for the saw blades in frame saws and
the like.
5,503 of 1911.—Gerald Otley Case: Method
of constructing beams, floors, walls, columns,
piles, and the like.
5,537 of 1911.—Francis Henry Crittall:
Joining metal shafts.
5,562 of 1911.—Pierce Dauphin: Apparatus
for applying wax to floors.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.	
June 2.—By EDWARDS & RUSSELL. Prestelton, Radnor. Agricultural estate, 2,186 acres, f.	245,785
June 2.—By J. HANNAFORD & SON. Chumleigh, Devon. Pasture land, 22 acres, f.	1,570
June 10.—By J. HANNAFORD & SON. Ashwater, Devon. Ashwater Barton Estate, 51½ acres, f.	3,585
June 13.—By BALLS & BALLS. Great Yeldham, Essex.—Jennings Farm and cottages, 14 a. 2 r. 3 p. f.	729
June 15.—By ORCHARD & JONES. Swarston, Leicesters.—Freshold farm, 292 acres, f.	10,000
By E. B. COTTON. Wootton Wawen, Warwick.—Hole Farm, 66 acres, f.	1,810
June 17.—By J. R. EVE & SON. Colworth, Beds.—Roothams Green Farm and accommodation land, 140 a. 1 r. 7 p. f.	2,122
By IRELAND. Barsham, Suffolk.—High Common Farm, 73 a. 0 r. 18 p., f.	1,020
June 20.—By ROBERT BLACKMORE. Abbotsham, Devon.—Small holding, 39 acres, f.	825
By BULMER, ADKIN, & BELCHER. Newbold-on-Stower, Worcs. Church Farm, 200 a. 1 r. 5 p. f.	2,300
Lower Tysoe, Warwick. Two farms, 106 acres, f.	2,400
June 27.—By G. TROLOPE & SONS. Rolvenden, Kent.—Strood and Hoskins farms, 172 a. f.	2,630
Marsh land, 150 acres, f.	3,010
By ROBERT BLACKMORE. West Putford, Devon. North Worden Farm, 127½ acres, f.	1,960
By POPE, SMITH, & ANTHONY. Dymock, Gloucester. Beacon Hill and The Old Rock, 183 acres, f.	7,800
June 29.—By KINGS & HARRIS. Holsworthy, Devon. The Stanhope Estate, 3,100 acres (in lots)	45,784
By BIDWELL & SONS. Ely, Cambs.—Arable land, 18 a. 2 r. 2 p., c.	510
Downham, Cambs.—Arable land, 99 a. 2 r. 27 p. f.	1,039

* All these applications are in the stage in
which opposition to the grant of Patents upon
them can be made

By HARDING & SON.	
Great Hornsea, Herts. Brick House Farm, 119 a. 1 r. 38 p. f.	21,500
Anstey, Herts.—Arable land, 9 acres, f.	232
June 30. By J. HANNAFORD & SON. Burrington, Devon.—Lower Twitchen and Aze Moors, 63 acres, f.	1,438
July 6. By MADRISON, MILLER, & MADRISON. Acle, Norfolk. Two houses and 5 acres, f.	635
By BIDWELL & SONS. Isleham, Cambs.—Beck Farm and enclosures, 91 a. 0 r. 38 p. f.	3,552
July 5.—By DOUGLAS YOUNG & CO. Fulham. 21 to 27 (odd), Letterstone-rd., u.t. 65 yrs, gr. 22½, w.t. 158½, 12a.	890
Norwood. 51, Penge-rd. (s.), u.t. 56 yrs, gr. 7½, 10s., a.r. 35.	150
Clapham. 2, Fentham-rd., u.t. 14 yrs, gr. 6½, 10s., y.r. 46.	100
Southwark.—6, Lat-st., f. w.r. 33½, 16s.	250
July 6.—By C. C. & T. MOORE. Whitechapel.—39, Old Montague-st., f. p.	900
Mill End—129, Burdett-rd., u.t. 35 yrs, gr. 6½, p.	230
By LOCKING & WALKER Stoke Newington.—2, Grange-court rd., u.t. 64 yrs, gr. 6½, 10s., p.	275
By EDWIN MARTIN & CO. Dulwich.—Barry-rd., f.g.r. 13½, reversion in 76 yrs.	320
By NEWBORN & SHEPPARDS. Islington. 14 to 19, North-rd.; 20, 22, and 24, Corinth-rd., u.t. 49 yrs, gr. 54½, y.r. 294, 14s.	765
22, Union-sq., u.t. 25 yrs, g.r. 7½, 12s., y.r. 48½ 5, Froding-st., u.t. 33 yrs, g.r. nil, w.r. 41½, 12s.	205
By ROBSON & PERKINS. Bromley-by-Bow.—125 and 127, Fairfoot-rd., u.t. 61 yrs, g.r. 7½, 10s., w.r. 70½, 6s.	300
By WHISTLER & WORRE. Eltham, Kent.—112 and 114, High-st. (s.), f. y.r. 115½.	2,045
By WILSON & GRAY. Churt, Surrey.—Old kiln and 1½ acre, f.	1,580
By CROOK. Sutton-at-Hone, Kent.—Odear lawn and 15 a. 1 r. 37 p. f.	1,880
Frogla mill and 5 a. 2 r. 15 p., f.	500
Ten-acre field, 5 a. 2 r. 39 p. f.	630
Horton Kirby, Kent.—Little Brookfield and White Piece, 136 a. 3 r. 30 p. f.	1,030
By SIMMONS & SONS. Hendon.—2 to 22 (even), Foster-st., and 3, Short-st., u.t. 49 yrs, g.r. 44½, w.r. 276½, 12s.	1,150
Victoria Park.—2, Risholme-st., f. w.r. 34½, 16s. 34, Calogant-rd., and 1 g.r. 4½, 10s., u.t. 142 yrs., g.r. 5½, 13s. 4d., w.r. 35½, 2s.	350
Northing Hill. 163 and 165, Cornwall-rd. (s.), f. y.r. 90, and p.	1,000
Cornwall-rd., f.g.r. 8½, reversion in 51 yrs Camberwell.—3, 5, 7, and 11, Southampton-st. (s.), u.t. 49 yrs, g.r. 34½, y.r. 41½, 12s. Peckham.—16, 20, 31, 65, and 79, Ryehill-rd., u.t. 15 yrs, g.r. 46½, 7s., w.r. 140l. and p.	425
Wandsworth. 24, Lavender-hd., u.t. 90 yrs, g.r. 6½, w.r. 36½, 8s.	950
Walthamstow. 157 and 159, Coppermill-lane, u.t. 88 yrs, g.r. 14½, y.r. 75½.	285
Wapping. 6, Great Hermitage-st., f., w.r. 45½, 12s.	600
Peckham. 48, 50, and 52, Carlton-gr., f., w.r. 59½, 12s.	700
Clapham.—88, Clapham-rd., u.t. 10 yrs, g.r. 10½, 10s., y.r. 55½.	115
Bermondsey.—29 and 31, Ferrand-st., f., w.r. 52.	245
Fulham.—18, Kempson-rd., u.t. 55 yrs, g.r. 10s., y.r. 42½.	385
July 7.—By H. & R. L. COBB. Hawkinge, Kent.—Approve Farm and Wood- land, 69 a. 0 r. 29 p. f.	1,080
High Halstow, Kent. Arable land, 8½ acres, f.	230
By BUCK & DIXON. Clayton.—Lee Bridge-rd., c.g.r. 20½, reversion in 42 yrs.	480
11 to 25 (odd), 37, Lea Bridge-rd., c., y., and w.r. 234½, 10s.	1,875
Hackney. 8, Banbury rd., u.t. 42 yrs, g.r. 5½, 5s., y.r. 30½.	200
By A. PREVOST & SON. Bethnal Green. 14, Peel-g. and 1 g. rents 32½, 10s., u.t. 92½ yrs, g.r. 10½, 10s., w.r. 33½, 2s.	600
Hackney.—36 to 39, Duncan-st., f., w.r. 176½, 16s. By S. WALLBOCK & CO. Long Acre.—No. 64 (s.), f., a.r. 300l.	2,425
By T. B. WESTACOTT & SON. Camden Town.—109, Kings-rd., f., y.r. 16l. By BALLS & BALLS. Walthamstow, Suffolk.—Little Hanchett House and 1 a. 2 r. 13 p., f.	250
By G. B. HILLARD & SON. Great Baddow, Essex.—Jefferys School, f.	900
July 10.—By BALLS & BALLS. St. Lawrence, Essex.—St. Lawrence Hall, 237 acres, f.	1,575
Great Oakley, Essex.—Block Farm, 51 a. 2 r. 14 p. f.	450
Stanbourne, Essex.—Little Tagley Cottage and 2 a. 2 r. 25 p. f.	300

By BLAKE, SON, & WILLIAMS.
Croydon.—30, The Waltons, f., y.r. 40.....
By CUTBERRI LANE & CO.
Walthamstow.—176 and 178, Brookscroft-rd.,
f., w.r. 44, 48.....
Dalston.—1, Weyland-st., f., y.r. 53, g.r. 54, 58,
w.r. 57, 12s.....

By ROGERS, CHAPMAN, & THOMAS.
Piccadilly.—D 4, The Albany, f., y.r. 150L.....

By HORNE & CO.
Twickenham.—St. George's-rd., f.g.r. 15L,
reversion in 62 yrs. land & 3 r.....
Balham.—241, Balham High-rd. (s.), u.t. 78 yrs.,
g.r. 201, y.r. 100L.....
Fulham.—30, 30, and 34, New King's-rd. (s.),
u.t. 68 yrs., g.r. 26L, y.r. 125L.....
Chiswick.—50 and 62, Grove Park-gdns., f.,
y. and cr. 90L.....

By DAVIS & LUCAS.
Stones, Kent.—Old Stone Brewery and 3 r.
34 p., f.....
Dairy Farm, 11 a. 1 r. 23 p., f.....
Stonewood Farm, 40 a. 3 r. 21 p., f.....
Woodbine Cottage and 2 p., f.....

Horton Kirby, Kent.—Arnold's Field, two cot-
tages, and 39 a. 7 p., f.....
Longfield, Kent.—Longfield Allotments, 11 a.
3 r. 38 p., f.....
Shorne, Kent.—Amble land, 2 a. 3 r. 39 p., f.....
Merston, Kent.—Woodland, 2 a. 4 r. 12 p., f.....

July 11.—By CHAMBERS & CO.
Hyde Park.—35, Cambridge-rd. and stabling,
u.t. 29 yrs., g.r. 15L, y.r. 135L.....

By DRIVER, JONAS, & CO.
Holloway.—St. James-rd., f.g.r. 18L, reversion
in 50 yrs.....
Rhodes-st., f.g.r. 12L, reversion in 47 yrs.
Liverpool-rd., f.g.r. 10L, 108, reversion in
23 yrs.....
Lowther-rd., f.g.r. 12L, reversion in 23
yrs.....

By HARELTY.
Newington.—(Lancaster-st. Sportsman p.h.,
lease for 1 yr. at 230L, thence for 14 yrs. at
215L, with goodwill.....

By ALFRED MARSHALL & CO.
Great Ness, Salop.—Startle Wood Farm, 116 a.
2 r. 17 p., f.....
Larch plantation, 64 acres, f.....
Prescott, Salop.—Falcon House Farm and
The Cedars, 181 acres, f.....

By J. C. PLATT.
Fulham.—55L, Fulham rd. (s.), u.t. 39 yrs., g.r.
10L, y.r. 75L.....
120 and 122, Moore Park rd., u.t. 35 yrs., g.r.
10L, 108, p.....

July 12.—By FAREBROTHER, ELLIS, & CO.
North Clay, Kent.—Vale Mascal and 24 a. 2 r.
10p., f.....

By CHANEY.
Edenbridge, Kent.—Spring Cottages, f., w.r.
88L, 108L.....

By H. DONALDSON & SONS.
Tottenham.—6 and 8, Grove-rd., u.t. 57 yrs.,
g.r. 8L, w.r. 61L, 2s.....

By ROW, SON, & MASON.
Harlesden.—Burns rd., f.g.r. 20L, 108, re-
version in 82 yrs.....

July 13.—By H. J. BLISS & SONS.
Old Ford.—21, 23, and 25, Ford-st., f., w.r.
81L, 18s.....
Bethnal Green.—122, Green-st. (s.), u.t. 35 yrs.,
g.r. 6L, y.r. 35L.....

By ALLAN, BOOTH, & DAMPER.
Camden Town.—21, Tordano-av., u.t. 25 yrs.,
g.r. 6L, p.....

By JOHN BOTT & SONS.
Clerkenwell.—15, Great Bath-st. (s.), f., y.r.
51L, 6s.....

By JOHN G. DEAN & CO.
Balham.—9, Bonhill-rd., u.t. 35 yrs., g.r.
5L, 10s, w.r. 23L.....

By LEOPOLD FARMER & SONS.
Aldershot.—Queen's-rd., f.g.r. 30L, reversion
in 65 yrs.....
Kilburn.—283, Belgrave rd. (s.), u.t. 32 yrs., g.r.
30L, y.r. 65L.....

By C. C. & T. MOORE.
Canning Town.—4 to 12 (even), Wellington-st.,
u.t. 33 yrs., g.r. 6L, w.r. 32L, 6s.....

By JOSEPH STOWER.
Aldington, Berks.—Freehold farm, 123 a. 0 r.
14 p.....
Willesden.—Mebrose-av., f.g.r. 16L, reversion
in 83 years.....

Brixton.—Ducie-st., f.g.r. 22L, 1s, reversion
in 64 yrs.....

By STIMSON & SONS.
Waltham.—Salisbury-row, f.g.r. 20L, reversion
in 57 yrs.....
Old Kent rd.—12 to 30 (even), Canterbury-rd.,
f., w.r. 123L, 10s.....

805 and 907, Old Kent rd. (s.), f., y.r. 80L, 2s.
825, Old Kent rd. (s.), f., y.r. 40L.....
10 to 16 (even), Ormside-st., f., y.r. 150L, 12s.
45, Ormside-st. (s.), and Parkers-yd., f., y.r.
55L.....

Ormside-st., Fox and Hounds b.b., f., y.r. 50L,
1 to 25 (odd), Tustin-st., f., w.r. 450L, 12s.....

July 14.—By C. RAWLEY CROSS & CO.
Shepherd's Bush.—36, Warbeck-rd., f., y.r. 40L.
Hammersmith.—38 and 40, Nassau-st., u.t.
39 yrs., g.r. 10L, w.r. 68L, 18s.....

Notting Hill.—332 and 343, Portobello-rd., u.t.
55 yrs., g.r. 17L, y.r. 100L.....
Harlesden.—10, Craven Park-rd., f., p.....

By DOLMAN & FRANK.
Hamstead.—9, Eton-rd., u.t. 51 yrs., g.r. 2L,
y.r. 75L.....

By A. & G. GRIVAR.
Edmonton.—Brettenham-rd., Fleecroft and
2 a. 1 r. 9 p.....

By HEARS, SON, & REEVE.
Paddington.—21, Cambridge-rd. and 22, South
Wharf-rd., u.t. 10 yrs., g.r. 11L, w.r. 117L.....

By PRICH, ARROW, & TAYLOR.
Tooting.—31, Tottenham-rd., f., y.r. 40.....

By STIMSON & SONS.
Bethnal Green.—92, 94, 96, 100, 102, and 104,
Coventry-st., f., w.r. 123L, 14s.....
Battersea.—41 to 47 (odd), Sewell-rd., f., w.r.
93L, 12s.....

Hackney.—83, Well-st. (s.), f., y.r. 40L.....
Hammersmith.—67 and 69, Angel rd., c.w.r.
43L, 2s.....
Sydenham.—Venner-rd., f.g.r. 16L, reversion
in 74 yrs.....

Contractions used in these lists.—F.g.r. for freehold
ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for
improved ground-rent; g.r. for ground-rent; r. for rent;
f. for freehold; c. for copyhold; l. for leasehold; p. for
possession; e.r. for estimated rental; w.r. for weekly
rental; q.r. for quarterly rental; y.r. for yearly rental;
u.t. for unexpired term; p.a. for per annum; yrs. for
years; la. for lane; st. for street; rd. for road; sq. for
square; pl. for place; ter. for terrace; cres. for crescent;
av. for avenue; gds. for gardens; yd. for yard; gr. for
grave; b.h. for beerhouse; p.h. for public-house; o. for
office; s. for shops; ct. for court.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary
and artistic matters should be addressed to "THE
EDITOR" (and not to any person by name); those
relating to advertisements and other exclusively
business matters should be addressed to "THE
PUBLISHER," and not to the Editor.

All communications must be authenticated by the
name and address of the sender, and for publication
you or not. No notice can be taken of anonymous
communications.

The responsibility of signed articles, letters, and
papers read at meetings rests, of course, with the
authors.

We cannot undertake to return rejected communica-
tions, and the Editor cannot be responsible for lost
drawings, photographs, manuscripts, or other docu-
ments, or for models or samples sent to or left at this
office, unless he has specially asked for them.

All drawings sent to or left at this office for con-
sideration should bear the owner's name and address
on either the face or back of the drawing. Delay and
inconvenience may result from failure to do this.

Any communication to a contributor to write an article,
or to execute or lend a drawing for publication, is given
subject to the approval of the article or drawing, when
received, by the Editor, who retains the right to reject
it if unsatisfactory. The receipt by the author of a
proof of an article in type does not necessarily imply its
acceptance.

N.B.—Illustrations of the First Premiated Design in
any important architectural competition will always be
accepted for publication by the Editor, whether they
have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

. Our aim in this list is to give, as far as possible, the
average prices of materials, not necessarily the lowest.
Quality and quantity obviously affect prices—a fact
which should be remembered by those who make use of
this information.

BRICKS, &c.
Per 1000 Alongside, in River..... 2 s. d.
Best Stocks..... 13 0
Picked Stocks for Facings..... 2 7 0

Per 1000, Delivered at Railway Depot.
2 s. d.
Flettons..... 1 9 0
Double Headers..... 3 7 6

Best Fareham..... 3 12 0
Best Red Pressed..... 17 7 6
Best Blue Pressed..... 18 7 6
Best Blue Pressed..... 15 17 6
Best Blue Pressed..... 10 7 6
Do. Bulwose..... 10 7 6
Best Stourbridge..... 10 7 6
Fire Bricks..... 3 14 0
Glazed Bricks..... 14 7 6
Best White and..... 17 7 6
Ivory Glazed..... 17 7 6
Stretchers..... 10 7 6
Ends..... 17 7 6
Quoins, Bullnose, and Flats..... 18 7 6
D'ble Stretchers..... 15 17 6
One Side and..... 18 7 6
Two Sides and..... 18 7 6
D'ble Stretchers..... 15 17 6
Second Quality White and Dipped Salt Glazed, 41 ss.
per 1000 less than best.

Thames and Pitt Sand..... 5 s. 3 p. yard, delivered.
Thames Ballast..... 5 3
Best Portland Cement..... 29 0 per ton, " "
Best Ground Blue Lias Linn..... " "
Note.—The cement or lime is exclusive of the
ordinary charge for sacks.

Grey Stone Linn..... 11s. 6d. per yard delivered.
Skourbridge Fireclay in sacks 7s. 6d. per yard at rly. dpt.

STONE.
Per Ft. Cube.
BATH STONE—delivered on road wagons, s. d.
Paddington Depot..... 1 6
Dg. do. delivered on road wagons, Nine Elms
Depot..... 1 8

Portland Stone (20 ft. average).
Brown Whitbed, delivered on road wagons,
Paddington Depot, Nine Elms Depot, or
Pimlico Wharf..... 2 1
White Bashed, delivered on road wagons,
Paddington Depot, Nine Elms Depot, or
Pimlico Wharf..... 2 2

Per Ft. Cube, delivered at Railway Depot.
s. d.
Ancaster in blocks..... 1 10
Bees in blocks..... 1 6
Greenhill in blocks..... 1 10
Darley Dale in stone..... 2 4
Bucks..... 2 4
Rocks..... 2 3

Closeburn Red..... 2 0
Freston..... 2 0
Best 1000..... 2 4
Talsare & Gwespyr..... 2 8
Flouse..... 2 8

STONE (Continued).

YORK STONE—Bath Road 41 ft. 11 in.
Per Ft. Cube, Delivered at Railway Depot.....
Scrapped random blocks.....
Per Ft. Super, Delivered at Railway Depot.....
6 in. sawn two sides landings to sizes (under 40 ft.
super).....
6 in. rubbed two sides ditto.....
3 in. sawn two sides slabs (random sizes).....
3 in. to 24 in. sawn one side slabs (random sizes).....
14 in. to 2 in. ditto.....

HARD YORK—
Per Ft. Cube, Delivered at Railway Depot.....
Scrapped random blocks.....
Per Ft. Super, Delivered at Railway Depot.....
6 in. sawn two sides landings to sizes (under 40 ft.
super).....
6 in. rubbed two sides ditto.....
3 in. sawn two sides slabs (random sizes).....
3 in. to 24 in. sawn one side slabs (random sizes).....
14 in. to 2 in. ditto.....

SLATES.
Per 1000 of 1200 at Railway Depot.
In. In. s. d. In. In. s. d.
20 x 10 best blue..... 13 2 0
Bangor..... 13 2 0
20 x 12 ditto..... 13 17 6
20 x 14 ditto..... 13 17 6
20 x 16 ditto..... 13 17 6
20 x 18 ditto..... 13 17 6
20 x 20 ditto..... 13 17 6
20 x 22 ditto..... 13 17 6
20 x 24 ditto..... 13 17 6
20 x 26 ditto..... 13 17 6
20 x 28 ditto..... 13 17 6
20 x 30 ditto..... 13 17 6
20 x 32 ditto..... 13 17 6
20 x 34 ditto..... 13 17 6
20 x 36 ditto..... 13 17 6
20 x 38 ditto..... 13 17 6
20 x 40 ditto..... 13 17 6
20 x 42 ditto..... 13 17 6
20 x 44 ditto..... 13 17 6
20 x 46 ditto..... 13 17 6
20 x 48 ditto..... 13 17 6
20 x 50 ditto..... 13 17 6
20 x 52 ditto..... 13 17 6
20 x 54 ditto..... 13 17 6
20 x 56 ditto..... 13 17 6
20 x 58 ditto..... 13 17 6
20 x 60 ditto..... 13 17 6
20 x 62 ditto..... 13 17 6
20 x 64 ditto..... 13 17 6
20 x 66 ditto..... 13 17 6
20 x 68 ditto..... 13 17 6
20 x 70 ditto..... 13 17 6
20 x 72 ditto..... 13 17 6
20 x 74 ditto..... 13 17 6
20 x 76 ditto..... 13 17 6
20 x 78 ditto..... 13 17 6
20 x 80 ditto..... 13 17 6
20 x 82 ditto..... 13 17 6
20 x 84 ditto..... 13 17 6
20 x 86 ditto..... 13 17 6
20 x 88 ditto..... 13 17 6
20 x 90 ditto..... 13 17 6
20 x 92 ditto..... 13 17 6
20 x 94 ditto..... 13 17 6
20 x 96 ditto..... 13 17 6
20 x 98 ditto..... 13 17 6
20 x 100 ditto..... 13 17 6
20 x 102 ditto..... 13 17 6
20 x 104 ditto..... 13 17 6
20 x 106 ditto..... 13 17 6
20 x 108 ditto..... 13 17 6
20 x 110 ditto..... 13 17 6
20 x 112 ditto..... 13 17 6
20 x 114 ditto..... 13 17 6
20 x 116 ditto..... 13 17 6
20 x 118 ditto..... 13 17 6
20 x 120 ditto..... 13 17 6
20 x 122 ditto..... 13 17 6
20 x 124 ditto..... 13 17 6
20 x 126 ditto..... 13 17 6
20 x 128 ditto..... 13 17 6
20 x 130 ditto..... 13 17 6
20 x 132 ditto..... 13 17 6
20 x 134 ditto..... 13 17 6
20 x 136 ditto..... 13 17 6
20 x 138 ditto..... 13 17 6
20 x 140 ditto..... 13 17 6
20 x 142 ditto..... 13 17 6
20 x 144 ditto..... 13 17 6
20 x 146 ditto..... 13 17 6
20 x 148 ditto..... 13 17 6
20 x 150 ditto..... 13 17 6
20 x 152 ditto..... 13 17 6
20 x 154 ditto..... 13 17 6
20 x 156 ditto..... 13 17 6
20 x 158 ditto..... 13 17 6
20 x 160 ditto..... 13 17 6
20 x 162 ditto..... 13 17 6
20 x 164 ditto..... 13 17 6
20 x 166 ditto..... 13 17 6
20 x 168 ditto..... 13 17 6
20 x 170 ditto..... 13 17 6
20 x 172 ditto..... 13 17 6
20 x 174 ditto..... 13 17 6
20 x 176 ditto..... 13 17 6
20 x 178 ditto..... 13 17 6
20 x 180 ditto..... 13 17 6
20 x 182 ditto..... 13 17 6
20 x 184 ditto..... 13 17 6
20 x 186 ditto..... 13 17 6
20 x 188 ditto..... 13 17 6
20 x 190 ditto..... 13 17 6
20 x 192 ditto..... 13 17 6
20 x 194 ditto..... 13 17 6
20 x 196 ditto..... 13 17 6
20 x 198 ditto..... 13 17 6
20 x 200 ditto..... 13 17 6
20 x 202 ditto..... 13 17 6
20 x 204 ditto..... 13 17 6
20 x 206 ditto..... 13 17 6
20 x 208 ditto..... 13 17 6
20 x 210 ditto..... 13 17 6
20 x 212 ditto..... 13 17 6
20 x 214 ditto..... 13 17 6
20 x 216 ditto..... 13 17 6
20 x 218 ditto..... 13 17 6
20 x 220 ditto..... 13 17 6
20 x 222 ditto..... 13 17 6
20 x 224 ditto..... 13 17 6
20 x 226 ditto..... 13 17 6
20 x 228 ditto..... 13 17 6
20 x 230 ditto..... 13 17 6
20 x 232 ditto..... 13 17 6
20 x 234 ditto..... 13 17 6
20 x 236 ditto..... 13 17 6
20 x 238 ditto..... 13 17 6
20 x 240 ditto..... 13 17 6
20 x 242 ditto..... 13 17 6
20 x 244 ditto..... 13 17 6
20 x 246 ditto..... 13 17 6
20 x 248 ditto..... 13 17 6
20 x 250 ditto..... 13 17 6
20 x 252 ditto..... 13 17 6
20 x 254 ditto..... 13 17 6
20 x 256 ditto..... 13 17 6
20 x 258 ditto..... 13 17 6
20 x 260 ditto..... 13 17 6
20 x 262 ditto..... 13 17 6
20 x 264 ditto..... 13 17 6
20 x 266 ditto..... 13 17 6
20 x 268 ditto..... 13 17 6
20 x 270 ditto..... 13 17 6
20 x 272 ditto..... 13 17 6
20 x 274 ditto..... 13 17 6
20 x 276 ditto..... 13 17 6
20 x 278 ditto..... 13 17 6
20 x 280 ditto..... 13 17 6
20 x 282 ditto..... 13 17 6
20 x 284 ditto..... 13 17 6
20 x 286 ditto..... 13 17 6
20 x 288 ditto..... 13 17 6
20 x 290 ditto..... 13 17 6
20 x 292 ditto..... 13 17 6
20 x 294 ditto..... 13 17 6
20 x 296 ditto..... 13 17 6
20 x 298 ditto..... 13 17 6
20 x 300 ditto..... 13 17 6
20 x 302 ditto..... 13 17 6
20 x 304 ditto..... 13 17 6
20 x 306 ditto..... 13 17 6
20 x 308 ditto..... 13 17 6
20 x 310 ditto..... 13 17 6
20 x 312 ditto..... 13 17 6
20 x 314 ditto..... 13 17 6
20 x 316 ditto..... 13 17 6
20 x 318 ditto..... 13 17 6
20 x 320 ditto..... 13 17 6
20 x 322 ditto..... 13 17 6
20 x 324 ditto..... 13 17 6
20 x 326 ditto..... 13 17 6
20 x 328 ditto..... 13 17 6
20 x 330 ditto..... 13 17 6
20 x 332 ditto..... 13 17 6
20 x 334 ditto..... 13 17 6
20 x 336 ditto..... 13 17 6
20 x 338 ditto..... 13 17 6
20 x 340 ditto..... 13 17 6
20 x 342 ditto..... 13 17 6
20 x 344 ditto..... 13 17 6
20 x 346 ditto..... 13 17 6
20 x 348 ditto..... 13 17 6
20 x 350 ditto..... 13 17 6
20 x 352 ditto..... 13 17 6
20 x 354 ditto..... 13 17 6
20 x 356 ditto..... 13 17 6
20 x 358 ditto..... 13 17 6
20 x 360 ditto..... 13 17 6
20 x 362 ditto..... 13 17 6
20 x 364 ditto..... 13 17 6
20 x 366 ditto..... 13 17 6
20 x 368 ditto..... 13 17 6
20 x 370 ditto..... 13 17 6
20 x 372 ditto..... 13 17 6
20 x 374 ditto..... 13 17 6
20 x 376 ditto..... 13 17 6
20 x 378 ditto..... 13 17 6
20 x 380 ditto..... 13 17 6
20 x 382 ditto..... 13 17 6
20 x 384 ditto..... 13 17 6
20 x 386 ditto..... 13 17 6
20 x 388 ditto..... 13 17 6
20 x 390 ditto..... 13 17 6
20 x 392 ditto..... 13 17 6
20 x 394 ditto..... 13 17 6
20 x 396 ditto..... 13 17 6
20 x 398 ditto..... 13 17 6
20 x 400 ditto..... 13 17 6
20 x 402 ditto..... 13 17 6
20 x 404 ditto..... 13 17 6
20 x 406 ditto..... 13 17 6
20 x 408 ditto..... 13 17 6
20 x 410 ditto..... 13 17 6
20 x 412 ditto..... 13 17 6
20 x 414 ditto..... 13 17 6
20 x 416 ditto..... 13 17 6
20 x 418 ditto..... 13 17 6
20 x 420 ditto..... 13 17 6
20 x 422 ditto..... 13 17 6
20 x 424 ditto..... 13 17 6
20 x 426 ditto..... 13 17 6
20 x 428 ditto..... 13 17 6
20 x 430 ditto..... 13 17 6
20 x 432 ditto..... 13 17 6
20 x 434 ditto..... 13 17 6
20 x 436 ditto..... 13 17 6
20 x 438 ditto..... 13 17 6
20 x 440 ditto..... 13 17 6
20 x 442 ditto..... 13 17 6
20 x 444 ditto..... 13 17 6
20 x 446 ditto..... 13 17 6
20 x 448 ditto..... 13 17 6
20 x 450 ditto..... 13 17 6
20 x 452 ditto..... 13 17 6
20 x 454 ditto..... 13 17 6
20 x 456 ditto..... 13 17 6
20 x 458 ditto..... 13 17 6
20 x 460 ditto..... 13 17 6
20 x 462 ditto..... 13 17 6
20 x 464 ditto..... 13 17 6
20 x 466 ditto..... 13 17 6
20 x 468 ditto..... 13 17 6
20 x 470 ditto..... 13 17 6
20 x 472 ditto..... 13 17 6
20 x 474 ditto..... 13 17 6
20 x 476 ditto..... 13 17 6
20 x 478 ditto..... 13 17 6
20 x 480 ditto..... 13 17 6
20 x 482 ditto..... 13 17 6
20 x 484 ditto..... 13 17 6
20 x 486 ditto..... 13 17 6
20 x 488 ditto..... 13 17 6
20 x 490 ditto..... 13 17 6
20 x 492 ditto..... 13 17 6
20 x 494 ditto..... 13 17 6
20 x 496 ditto..... 13 17 6
20 x 498 ditto..... 13 17 6
20 x 500 ditto..... 13 17 6
20 x 502 ditto..... 13 17 6
20 x 504 ditto..... 13 17 6
20 x 506 ditto..... 13 17 6
20 x 508 ditto..... 13 17 6
20 x 510 ditto..... 13 17 6
20 x 512 ditto..... 13 17 6
20 x 514 ditto..... 13 17 6
20 x 516 ditto..... 13 17 6
20 x 518 ditto..... 13 17 6
20 x 520 ditto..... 13 17 6
20 x 522 ditto..... 13 17 6
20 x 524 ditto..... 13 17 6
20 x 526 ditto..... 13 17 6
20 x 528 ditto..... 13 17 6
20 x 530 ditto..... 13 17 6
20 x 532 ditto..... 13 17 6
20 x 534 ditto..... 13 17 6
20 x 536 ditto..... 13 17 6
20 x 538 ditto..... 13 17 6
20 x 540 ditto..... 13 17 6
20 x 542 ditto..... 13 17 6
20 x 544 ditto..... 13 17 6
20 x 546 ditto..... 13 17 6
20 x 548 ditto..... 13 17 6
20 x 550 ditto..... 13 17 6
20 x 552 ditto..... 13 17 6
20 x 554 ditto..... 13 17 6
20 x 556 ditto..... 13 17 6
20 x 558 ditto..... 13 17 6
20 x 560 ditto..... 13 17 6
20 x 562 ditto..... 13 17 6
20 x 564 ditto..... 13 17 6
20 x 566 ditto..... 13 17 6
20 x 568 ditto..... 13 17 6
20 x 570 ditto..... 13 17 6
20 x 572 ditto..... 13 17 6
20 x 574 ditto..... 13 17 6
20 x 576 ditto..... 13 17 6
20 x 578 ditto..... 13 17 6
20 x 580 ditto..... 13 17 6
20 x 582 ditto..... 13 17 6
20 x 584 ditto..... 13 17 6
20 x 586 ditto..... 13 17 6
20 x 588 ditto..... 13 17 6
20 x 590 ditto..... 13 17 6
20 x 592 ditto..... 13 17 6
20 x 594 ditto..... 13 17 6
20 x 596 ditto..... 13 17 6
20 x 598 ditto..... 13 17 6
20 x 600 ditto..... 13 17 6
20 x 602 ditto..... 13 17 6
20 x 604 ditto..... 13 17 6
20 x 606 ditto..... 13 17 6
20 x 608 ditto..... 13 17 6
20 x 610

LONDON.—For provision of weighbridges at Greenwich-road and Old Kent-road depots, for the London County Council:—

	Price of machine for Old Kent- road depot.	Greenwich- road depot.
Barlett & Son, Ltd.,	£185	£185
H. Pooley & Son, Ltd.,	154	140
Day & Millward, Ltd.,	140	145
W. & T. Avery, Ltd.,	142	142
Cowcross-street, E.C.,	142	*132
Ashworth, Son, & Co., Ltd., Dewsbury,	*133	130

[The estimates of the Chief Officer of Tramways comparable with the tenders are £145 for the machine for the Old Kent-road depot and £130 for the machine for the Greenwich-road depot.]

LONDON.—For structural improvements at the Hammond-road School, Haggerston, for the London County Council:—

Stevens & Sons	£1,158	0	0
J. Wontner-Smith, Gray, & Co.,	1,028	0	0
J. Grundy, Ltd.,	967	0	0
J. & F. May	950	0	0
J. Yerton & Co., Ltd.,	898	0	0
H. J. Cash & Co., Ltd.,	854	0	0
Clamon & Hutton	805	0	0
W. & Cannon & Sons, Ltd.,	796	0	0
Palawkar & Sons	763	0	0
Unsigned	711	0	0
Tilley Bros., 53, Kingland-road*	717	11	6

[The Architect's estimate, comparable with the tenders, is £850.]

LONDON.—For erecting a school on the Malmsbury-road site, Bow and Bromley, for the London County Council:—

C. Wall, Ltd.,	£10,332	11	10
Treasure & Son, Ltd.,	10,330	0	0
L. H. & R. Roberts	9,961	0	0
Kirk & Randall	9,957	0	0
McLaughlin & Harvey, Ltd.,	9,681	13	0
H. L. Holloway	9,644	0	0
W. Johnson & Co., Ltd.,	9,618	0	0
E. Lawrence & Sons, Ltd.,	9,556	0	0
J. & M. Patrick	9,521	0	0
A. E. Symes	9,440	0	0
T. D. Leng	9,350	0	0
Fatman & Fotheringham, Ltd.,	9,345	0	0
J. & C. Bowyer, Ltd., Upper Norwood*	9,086	0	0

[The Architect's estimate, comparable with the tenders, is £9,100.]

LONDON.—For redividing classrooms, etc., at the Alton-street School, Bow and Bromley, for the London County Council:—

W. Johnson & Co., Ltd.,	£1,062	
G. Godson & Sons	1,032	
Holliday & Greenwood, Ltd.,	1,035	
T. D. Leng	1,020	
A. E. Symes	983	
J. & C. Bowyer, Ltd.,	984	
E. Lawrence & Sons, Ltd., 15 and 16, Wharf-road, City-road*	916	

LONDON.—For redividing classrooms, etc., at the Chalkbrook-road School, Bethnal Green, for the London County Council:—

W. Johnson & Co., Ltd.,	£1,040	
G. Godson & Sons	1,023	
T. D. Leng	1,024	
A. E. Symes	972	
Holliday & Greenwood, Ltd.,	947	
J. & C. Bowyer, Ltd.,	944	
E. Lawrence & Sons, Ltd.,	937	
Ltd., 15-16, Wharf-road, City-road*	937	

LONDON.—For redividing classrooms, etc., at the Haggerston-road School, Haggerston, for the London County Council:—

T. D. Leng	£1,308	
W. Johnson & Co., Ltd.,	1,258	
J. & C. Bowyer,	1,233	
G. Godson & Sons	1,229	
E. Lawrence & Sons, Ltd.,	1,228	
A. E. Symes	1,182	
Holliday & Greenwood, Ltd., Brixton*	1,169	

OGILVIE & CO., Telephone: DALSTON 1888.
Many years connected with the late firm of W. R. LASCELLES & CO., Ltd., of Bunhill Row.

Amhurst Works, DALSTON LANE, N.E.

EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

LONDON.—For painting the interior of the "Hugh Myddleton" School, Finchbury, for the London County Council:—

J. Scott Penn, 42, William-street, Woolwich*

LONDON.—For painting the exterior of the Credon-road School, Camberwell, for the London County Council:—

J. Appleby & Sons

LONDON.—For providing handicraft centre and carrying out repairs at the St. Marylebone Grammar School, for the London County Council:—

H. & E. Lea

LONDON.—For painting the interior and exterior of the Stanley-street Schools, Deptford, for the London County Council:—

R. A. Lowe & Co.,

LONDON.—For painting the interior and exterior of the County Secondary School, Fulham, for the London County Council:—

A. Roberts & Co.,

W. Johnson & Co., Ltd.,

W. King & Son,

J. & M. Patrick,

TRURO.—For alterations at Mill House, Malpas-road. Mr. F. A. Barnes, City Engineer and Surveyor, Truro:—

C. & J. Harris

WINDSOR.—For erection of a greenhouse at Windsor Cemetery:—

E. Tripe, Harmondsworth*

WREXHAM.—For alterations and additions to Congregational Schools, Wrexham. Messrs Inghil, Bridgewater, & Porter, architects and surveyors, 3, Temple-row West, Birmingham:—

First Estimate

H. A. Jones

J. B. Woolley

Lewis Bros.

W. H. Wycheley

C. Griffiths, Lye, Stourbridge*

W. Johnson & Co., Ltd.,

G. Godson & Sons

E. Lawrence & Sons, Ltd.,

A. E. Symes

Holliday & Greenwood, Ltd., Brixton*

J. & C. Bowyer, Ltd.,

E. Lawrence & Sons, Ltd.,

A. E. Symes

Holliday & Greenwood, Ltd., Brixton*

J. & C. Bowyer, Ltd.,

E. Lawrence & Sons, Ltd.,

A. E. Symes

Holliday & Greenwood, Ltd., Brixton*

J. & C. Bowyer, Ltd.,

E. Lawrence & Sons, Ltd.,

A. E. Symes

Holliday & Greenwood, Ltd., Brixton*

J. & C. Bowyer, Ltd.,

E. Lawrence & Sons, Ltd.,

A. E. Symes

Holliday & Greenwood, Ltd., Brixton*

**Ham Hill Stone.
Doulting Stone.
Portland Stone.**

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Traak & Son,
The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams
16, Craven-street, Strand.

Grey Stone Lime

GROUND LIME, WHITE CHALK LIME,
FOR
PORTLAND CEMENT,

PLASTER, SIKAPITE, AND SAND.
Delivered in truck loads to any Station, or by vans in London.

Address: **JOSEPH S. PETERS.** Tel.: Meridian.
Works: **MERTHAM, SURREY.** Tel.: MERTHAM.
Depot: 417, OLD KENT ROAD. Tel.: KOP 357.

**USE
WHITE
LIME-SAND BRICKS**
OF THE Finest Quality

BUILDINGS, TUNNELS, CELLARS, MANHOLES, etc.

WHY?

B The Bricks are uniform.
C Less mortar is required.
C Closer joints can be made.

A 15 per cent. more bricks can be laid per day.
U Where light is required they need no whitewashing.

S Saving of material and labour.
B USED BY THE MILLION IN GERMANY, AMERICA,
AND IN THIS COUNTRY.

These Bricks are made by the
GODSTONE BRICK & TILE CO., LTD.,
Oxley Road, Godstone, Surrey,
and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 26/- per 1,000, net.

Send for Free Samples

Asphalte—The Seyssel and Metallo Lav
Asphalte Company (Mr. H. Glenn), Office, 40,
Poultry, E.C.—The best and cheapest material
for damp courses, railway arches, warehouses,
floors, flat roofs, stables, cow-sheds and mill
rooms, granaries, tun-rooms, and terrace

Asphalte Contractors to the Forth Bridge Co.

SPREAGUE & CO., Ltd.,
LITHOGRAPHERS,

Employ a large and efficient Staff especially for
Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

ASPHALTE

For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied by

THE

French Asphalte Co.

Whose name and address should be inserted in all
specifications.

For estimates, quotations, and all information
apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL,

CANNON STREET, E.C.

J. J. ETRIDGE, Jr.

SLATE MERCHANTS. LTD.

EXPERTS IN

SLATING,

TILING.

BEST WORK ONLY.

Telephone 2685 Wall, or write

BETHNAL GREEN SLATE WORKS,

BETHNAL GREEN, LONDON. E.

EWART'S

Cures in 19 cases out of 20.

"EMPRESS"

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

Established 1834.

Telephone:
2570 North.

SMOKE-CURE

THE BUILDER

VOL. CL.—No. 3373.

JULY 23, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
PROFESSIONAL UNITY	91	NOTES TO ILLUSTRATIONS	102	LAW REPORTS	111
PAUL'S BRIDGE	92	FIFTY YEARS AGO	102	LONDON COUNCILS	112
.....	92			OBITUARY	113
ROBERT STODART LORIMER	93	MONTHLY REVIEW OF ENGINEERING:—		TRADE CATALOGUES	113
TEMPORARY ARCHITECTS AND THEIR WORK		PERFECTOR BAR BEAM TESTS (WITH ILLUSTRATIONS)	103	FOREIGN AND COLONIAL	113
PROFESSOR REGINALD BLONFIELD (WITH ILLUSTRATIONS)	94	THE DESIGN OF VAULT RETAINING WALLS IN REINFORCED CONCRETE. II. (WITH ILLUSTRATIONS)	104	PATENTS	113
EXHIBITIONS OF STUDENTS' WORK	97	NOTES (WITH ILLUSTRATIONS)	105	SOME RECENT SALES	113
ARCHITECTURAL ASSOCIATION	97			LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	114
CH LIBRARY, MONKWEAUMOUTH (WITH ILLUSTRATIONS)	98	THE BUILDING TRADE:—		PRICES CURRENT	116
ROYAL SANITARY INSTITUTE CONGRESS	98	VARIATIONS	108	TENDERS	117
REAL NEWS	99	FACTORY AND WORKSHOP	109		
CRITICISM	100	LEICESTER BUILDING TRADE EMPLOYERS AND THE INSURANCE BILL	109		
RESPONSE	100	GENERAL BUILDING NEWS	109		
COMMUNICATION COLUMN	101	APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1900	109		
EDITORIAL SUMMARY	102	PROJECTED NEW BUILDINGS IN THE PROVINCES	109		
NOTES	102				
LONDON COUNTY COUNCIL	102				

Illustrations.

WORKS BY PROFESSOR REGINALD BLONFIELD, A.R.A. ARCHITECT:
MOUNDWELL MANOR, HANTS: GARDEN AND ENTRANCE FRONTS.
KENT HOUSE, KNIGHTSBRIDGE ENTRANCE HALL.
"WYTHRUSS," CHANLEIGH: THE HALL.
MOUNDWELL MANOR: THE HALL AND THE DRAWING-ROOM.

Illustrations.

WORKS BY PROFESSOR REGINALD BLONFIELD, A.R.A., ARCHITECT:
 MOUNDSMERE MANOR, HANTS: GARDEN AND ENTRANCE FRONTS.
 KENT HOUSE, KNIGHTSBRIDGE: ENTRANCE HALL.
 "WYTHURST," CRANLEIGH: THE HALL.
 MOUNDSMERE MANOR: THE HALL AND THE DRAWING-ROOM.



Photo by T. Lewis

"Wythurst," Cranleigh: View from the Terrace. (See page 94.)
 Professor Reginald Blomfield, A.R.A., Architect.

PROFESSIONAL UNITY.

THE correspondence we have lately published on the unity of the profession reveals anything but unity with regard to the fundamental as upon which such practical policy as we referred to in our leading article could be founded.

Registration having been before the profession for some years, discussed at one length, and finally adopted by the statute as its official policy, it might be thought that there is no practical advantage in opening up the whole question again, as one of our correspondents suggests.

But although the principle of Registration must, we suppose, be regarded for

all practical purposes as a *chose jugée*, that is not to say that the methods by which it is to be brought about, or the concrete form into which the abstract principle will be crystallised, are not still open to discussion. On the contrary, it seems evident that there is much hard thinking to be done to arrive at unity on fundamental points and to avoid the mental chaos of which complaint is made.

On no point is this more necessary than on the question of examination, which appears to alarm some of those whose chief concern is for the art of architecture. We entirely sympathise with those who feel this alarm, but we cannot profess to share it to the

same extent, as we hardly think the difficulty of this question is so great as to be fatal either to Registration on the one hand or to the artistic element of architecture on the other.

It is just possible that too much is taken for granted and that an argument is built up on an assumption which is open to doubt. That "the highest æsthetic elements are obviously outside the examination pale" is a statement which, we think, will hardly commend itself to academic and educational circles. If you can teach a subject it seems probable that you can generally discover a method of ascertaining the results of your teaching. To admit the

impossibility of examination seems to imply the impossibility of teaching. It is hardly to be supposed that such a school as L'Ecole des Beaux-Arts, for instance, would be prepared to admit that it does not and cannot teach the highest æsthetic elements or that it finds it impossible to examine in them when taught.

After all, every distinction conferred upon an artist by his fellow artists, whether election to the Academy or the gold medal of the Institute, is by examination into his qualification in the highest æsthetic elements of his art. To examine seems a theoretical possibility, and, provided the examiners know what these elements are and pursue a right method in their process of examination, it should also be a practical one.

Unless some steps are taken to see that only the fit are registered, Registration would be a farce. The method whereby this will be done is called—for lack of a better word—an examination, but it does not necessarily follow that it must be by means of written answers to printed questions, or even that it should have the faintest resemblance to anything that passes under that name at the present moment. It may do so, if found advisable, but it is not necessary in the nature of things. It will be the architects' own fault if any examination is instituted which tends "to endow artistic incapacity with a recognition which it does not merit," or to result in a curtailment of "artistic liberty" or in an outrage on the susceptibilities of the "artistic temperament."

It is, however, just because we see so clearly that the artistic element is the one essential element in architecture and in the personal qualification of the architect, that we think it so necessary to realise exactly what we mean when we use such terms as the "highest æsthetic elements," "artistic liberty," and the "artistic temperament." Licence is sometimes mistaken for liberty, in art as elsewhere, and artistic taste for artistic ability.

Before we can expect the whole of the practical politics of the profession to be arranged to suit the convenience of the artistic temperament, we must make it quite clear that we are not asking this simply for the sake of that abnormal nervous development which carries with it hyper-sensitiveness to sense impressions of all kinds. Because a sensitiveness to beauty is one of them we can hardly expect everyone to take it for granted that it also carries with it in every case the imaginative insight and creative power necessary to architectural conception, and that a taste for art is always the same thing as a capacity for it.

Any such irresponsible and neurotic temperament as may be mistaken for "incorrigible laziness" is evidently no use to the architect, so there seems no reason for making special arrangements to suit it. Indeed, it might even be considered as one of the advantages of a properly constituted examination that it may tend to discourage the neurotic from undertaking professional responsibilities for which they are temperamentally unfit, without putting any difficulties in the way of those with real


artistic ability, whose extreme sensibility is balanced and controlled by a corresponding mental development and general sanity of outlook.

But even the most capable and genuine artist has to realise that the conditions under which architecture is practised here and now differ from those of other arts. If by temperament or inclination he is unwilling to accept them, he would probably feel more at home in some other art. When he proposes to practise architecture he deliberately ranks himself as an artist who is willing and should be able to assume professional responsibilities. These responsibilities may not be theoretically necessary to the practice of architecture, the day may come when they will be no longer undertaken, but while they obtain they must be discharged.

If the wrong sort of examination may do all the harm our correspondent fears, the right sort may conceivably do some positive good to the artist by forcing him to concentrate at once on the principles of his art, and to realise, before it is too late, the conditions and limitations of its practice.

The right sort of examination is only to be obtained by a common agreement as to the fundamental ideas upon which any real unity of the profession must be based.

ST. PAUL'S BRIDGE.

E must confess that we are rather surprised to see that a politician with so much experience in public affairs and of such wide culture as Mr. A. J. Balfour should have made the remark attributed to him when supporting the Corporation Bill in the House of Commons:—"He hoped the House would feel that it was impossible to defer a settlement of this important question . . . until every scheme had been discussed from every point of view." With all respect to so exalted a personage, we should have thought that the very importance of the question was just the reason for considering this and every other scheme from every point of view. As Mr. Dickinson said, it was worth the delay of another year to obtain a better scheme, and as the Corporation's own witness admitted, it would be easy to find a better one, so why the House should feel it impossible to defer a settlement of the question for one year, or five, if necessary, till this better scheme be found, is not quite evident. Had this remark been made by the typical City alderman, we could have understood it. For him the importance of the question would consist in the susceptibilities of the Corporation, in the fact that a scheme deliberately prepared at much trouble and expense by eminent City officials and approved by the great, wise, and wealthy Corporation itself should be held up indefinitely, or even thrown over altogether, for the sake of a few artists—insignificant people of no standing in the City whatever. Coming, however, from one who in the same breath reminded the House that he had often pleaded for a wider and broader consideration of this question of the æsthetic beauty of London, we can only presume that he found an occasion which might bring him into conflict with

his constituents inopportune to preach this cause again. Possibly, however, it is part of the duty of the representative of the City to represent its worst as well as its best aspects. Though the voice may be the statesman's voice, the hands are the hands of the alderman. It is no as if the importance of the question consisted in an immediate, pressing need for the bridge. It is generally recognised that its inception is due quite as much to the fact that some use must be made of the income derived from the Bridge House Estates as to the necessities of the traffic. Had it been necessary to pay for the bridge out of the rates, the need for it might not have been discovered for some years to come.

After taking sides with the Philistines in his capacity of senior member for the City in spoiling the most important London improvement of our generation and adding another to our lost opportunities, Mr. Balfour, no doubt, felt it due to himself as a man of taste to let the House know that he was not insensible to the value of the æsthetic element, and had a cultured appreciation of the beauty of architecture. Curiously enough in so doing he referred to the advantages of the removal of the "atrocious iron bridge over Ludgate Hill," without seeming to be aware of the fact that, as we have already pointed out, this is just one of the improvements which would naturally follow on the development of Blackfriars as the main through traffic artery, but would be deferred indefinitely by the scheme which he supported. We cannot help wondering what trouble Mr. Balfour took to post himself in the facts of the case or how far he thought it right to ascertain what was "to be found in the limits of possibilities" before he felt justified in throwing the weight of his influence into the scale in favour of the scheme proposed by his constituents.

NOTES.

WHEN the question of St. Paul's Bridge was under discussion the evidence of a gentleman was admitted who said that his business had called him to the City of London for something like thirty years (we think it was thirty), but that he had never heard anyone talk of vistas. We do not remember the particular business in which the gentleman's question happened to be engaged, but it was certainly not in the business of vistas. In this matter, therefore, his evidence, on his own admission, was valueless, although it would no doubt be of the greatest value in the matter which had occupied his attention for so long and, we hope, so profitably. And this very gentleman would be the first we imagine, if he is the practical and clever man we believe him to be, to take objection to any outside opinion on his own business concerns by one wholly ignorant of the elementary principles on which they are conducted. The evidence of this sort should have been admitted at all, and carry the weight which it undoubtedly did, only goes to show the confusion which exists in the minds of our Parliamentary and municipal authorities when matters involving artistic

considerations come into view. When a question of dry goods arises, let us have all means the evidence of men who have lived and thought in dry goods; when it is a question of architectural art, then also let us go for guidance to men who have lived and thought in architectural effect. But for goodness' sake do not let us mix up the witnesses except the opinion of either upon matters to which they have given no thought.

Is it, however, only our commercial friend who so frankly ignores the point of view which is involved? The position of St. Paul's Bridge is an instance; but does the position of the proposed King Edward Memorial, in which any element of business or the necessities of traffic, is, or should be, entirely absent, provide a happier illustration of the solution of a problem which is at all times difficult? We rarely think so. We referred to this in our last week, but we have no hesitation in referring to it again. Here, as in the case of the bridge, the question of the still awaits an answer. And in instance not only on account of architectural effect, not only on account of the proper disposition of more or less exact forms in relation to other forms at a distance, but also on account of relation to the character of the subject of the memorial. And with this latter before us we can think of no monument of recent years raised to the glory of a monarch of which the choice has been so ill-chosen.

In thinking over the interesting announcement that a course in academic architecture is to be instituted at the University of London, with Dr. J. J. Burnet, F.R.I.B.A.,—"one of the very best architects practising in England who have gone through the full course at the École des Beaux-Arts and passed into the first class"—as visitor, one considers presents itself. To quote the lecturer:—"The course is not intended for beginners, but for those who have already attended a course of architectural training at a university (or other institution), or have otherwise obtained their preliminary education"; further down one of the qualifications necessary for admission, besides competence in draughtsmanship, construction, and the Orders:—"That the candidate have a fair knowledge of design." It seems to us—and we wish to express our view without relinquishing our sympathy with Professor F. M. Benson and the College authorities in the sense of the difficulties attending the institution of a very interesting project—seems to us that the previous training required, almost of necessity at least, must come from the Beaux-Arts teaching, for one must suppose Dr. Burnet would hardly go so far to nullify, if it does entirely vitiate, the efforts of those who conduct the course. So much will be to be untaught and unlearned, and more valuable men, those with most of those who have got most firmly which their opportunities at a university (or other institution) have enabled them to obtain, may be relied

upon to offer the strongest resistance to any new doctrine. Surely by this time it is agreed that the great value of the Beaux-Arts' School lies in the system which pitches a young man from the very beginning into a turmoil of talk and large design, and permits him to gain more by the imperceptible processes of unconscious absorption—with ineradicable effect—than by direct teaching, which he may neglect if he does not consciously deny. From the outset, that provincialism (an inexact word, but we can hit on no better) of attitude, rendered possible and indeed almost inevitable by our system of separate "years" and classes, becomes impossible to the Parisian student. It is at the erasure of the "parochial" stigma that the next forward step in education in this country will aim.

The Professions and Municipal Work.

MR. B. WYAND, at a recent meeting of the Institute of Municipal Engineers, expressed the view that all engineering works would in the future fall into the hands of Government or municipal engineers, and that engineers acting as consultants or in an independent professional capacity will become extinct. We must say we should consider it greatly to be deplored if Mr. Wyand's prognostications prove correct. The engineer is in a way an inventor, accustomed to consider problems in a broad way, and deal with them by the exercise of imaginative faculties. Now, only a limited number of men possess these, and the tendency of municipal routine is to stifle them even where they exist, so that the average municipal officer, who may be fully competent to control important undertakings, will inevitably prove less able to initiate than the independent practitioner whose whole energies are devoted to original design. This argument applies equally to architecture and to all the arts and sciences demanding initiative, and it will prove to be a sad day for these if the methods suggested by Mr. Wyand are generally accepted. For our part we have always advocated every course tending to encourage experiment and imagination, believing that any other system fosters stagnation rather than vitality.

The Y.M.C.A. Building, Manchester.

IN our issue of February 10 the Y.M.C.A. last a full account was given of this building, which recently formed the subject of a paper read to the Concrete Institute by Mr. Alfred E. Corbett, F.R.I.B.A., one of the architects. The author states that the original working drawings contemplated brick walls and skeleton steel construction, and the decision when they were nearly completed to adopt reinforced concrete was largely due to two parts of the building which seemed peculiarly suited for such construction. These were the large swimming-bath on the top floor and the wide span of the ceiling and floor above the great hall. Matters were somewhat complicated by the delayed approval of the Manchester City authorities, and when reinforced concrete had been definitely accepted there was not time to recast the architectural drawings so as to make them truly expressive of the

material. We are quite at one with Mr. Corbett in the opinion that the architect who wishes to evolve a design worthy of being considered as reinforced concrete architecture must tackle the problem from the first with that ideal before him, and must not attempt to make a design equally suitable for brick walls or reinforced concrete, whichever it may please the authorities to sanction.

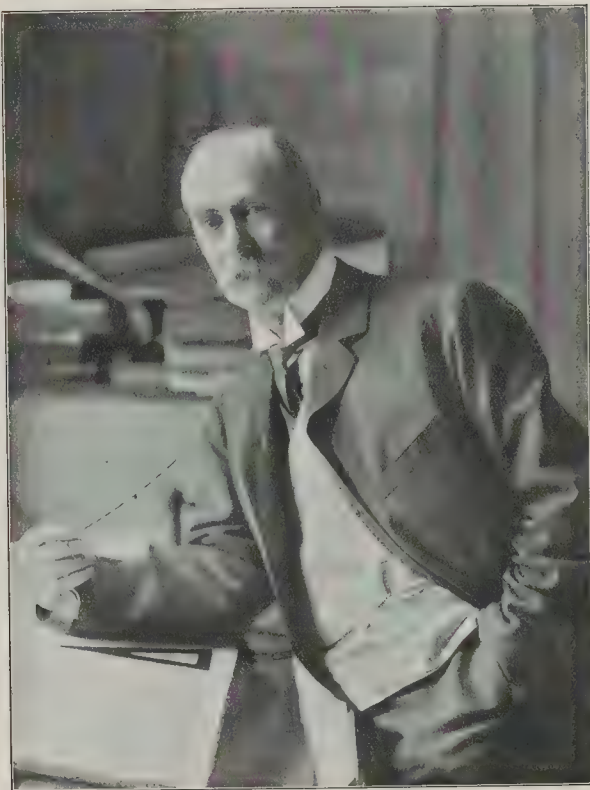
"I AM come from my Stafford House, house to your palace," St. James's, said Queen Victoria upon one occasion to the Duchess of Sutherland. It is stated that the lease of the mansion is about to be sold by the Duke of Sutherland. Stafford House was begun in 1825 for the Duke of York from designs by Sir Robert Smirke. When the building had reached the ground floor Smirke was superseded in favour of B. Dean Wyatt. In pursuance of the Acts 4 and 5 Vict., c. 27, and 5 Vict., c. 20, the Crown sold the house to George, second Marquis of Stafford and first Duke of Sutherland, for an annual rent of 758l. and the cost, 72,000l., of the building, the latter sum being devoted to the laying-out, by Pennethorne, of Victoria Park. Two years subsequently Sir Charles Barry remodelled the interior, added the masked top story, and built the stabling. For the site were pulled down the library built by Kent, 1737, for Queen Caroline, and Godolphin House, the last home in London of C. J. Fox.

SIR ROBERT STODART LORIMER.

KNIGHTHOOD was conferred upon Mr. R. S. Lorimer on the morning of Friday, 21st inst., at Holyrood, just before their Majesties' departure from Edinburgh. The news is a source of gratification to all who regard themselves as belonging to the profession.

Sir Robert, a younger son of the late Professor Lorimer, of Edinburgh University and Kellie Castle, Fife, was born on November 4, 1864. He entered Sir Rowand Anderson's office as pupil in 1887, where he stayed for four and a half years, subsequently working in Mr. Bodley's office in London. He then returned to Edinburgh, where he has been engaged ever since in building up a reputation which, as far as those who know his work are concerned, no honour can augment. In *Who's Who* "foreign travel" is given as his recreation. Articles on Sir Robert Lorimer's earlier work were published in the *Builder* of September 25, 1897; June 11, 1898; March 18, 1899; and illustrations in February 12, 1898; July 13, 1898; September 28, 1895. The greater part of his achievement is concerned with the restoration of, and addition to, the old Scottish houses with the unique style of which he is so profoundly familiar. The story of how Professor Lorimer gradually converted Kellie Castle from a misused and almost disused ruin to one of the most delightful of all examples of a peculiarly fascinating period has by this time an assured place in architectural lore. It serves in part to account for his son's feeling for the old work of Scotland, though it may not be assigned as the sufficient cause of his unequalled power of infusing with the old zest and spirit his independent work, as fresh in design as it is new in material.

The high-water mark (so far,—we speak provisionally) of the achievement of his peculiar ability, the Chapel of the Knights of the Thistle, was fully illustrated in the *Builder* last week. In the Royal Scottish Academy's exhibition this year there are



Professor Reginald Blomfield, A.R.A.
(Portrait by Reginald Haines.)

photographs and drawings of Rowallan, a considerable mansion in the north of Ayrshire. It is an instance, if we have been rightly informed, of an architect's success in persuading a client to abjure restoration and build anew. The old Rowallan Castle, an especially pleasing place, stands untouched close by.

Work at Earlshall, Leuchars. Fifte. the large place in Ayrshire, called Ardkingless, and the restoration of Lympne Castle. Kent. are known through illustrations in the professional Press; and we must not omit mention of the Roman Catholic Church of St. Peter's, at Morningside, Edinburgh, which shows perhaps better than any other example the architect's originality of conception and freshness of detail, in which no trace of the unpleasant emphasis which so often goes with modernity in design can be discerned. In conclusion, we would tender our very sincere congratulations to Sir Robert Lorimer, on his receiving an honour he so fully deserves—and remind our readers that he is not yet forty-seven years of age.

CONTEMPORARY ARCHITECTS AND THEIR WORK:

PROFESSOR REGINALD BLOMFIELD,
A.R.A., F.R.I.B.A., F.S.A.

THE Royal Academy of Arts is happy in having for its Professor of Architecture a man singularly blessed, not only in possessing a wide theoretical knowledge of his art, but in being well versed in its practice. For Professor Blomfield is not only one of our most erudite and scholarly architects, but he adds to a fine scholarship the corrective experiences of an extensive practice.

Mr. Blomfield is the third son of the late Rev. G. J. Blomfield, M.A., Rector and Rural Dean of Aldington, Kent. He was educated at Haileybury and secured an exhibition scholarship to Exeter College, Oxford, where he took a second in Classical Mods. and a first in Classical Greats (1870). He played cricket for the Seniors while at College, and that game, it may be remarked, has always been one of his chief recreations. His professional career commenced in the office of Sir Arthur Blomfield, to whom he was articled for three years, Sir Arthur being his uncle, and not, as is so frequently stated,

his father. Mr. Blomfield also studied at the Royal Academy Schools, winning prizes of 10*l*. and 25*l*. Subsequently he travelled extensively in France, and laid the foundations of a wide knowledge of French Renaissance work, about which he knows probably more than any other English architect. Mr. Blomfield was elected A.R.A. in 1901 and was appointed Professor of Architecture shortly after. He is also an Hon. Fellow of Exeter College, Oxford, a Fellow of the Royal Institute of British Architects, and Fellow of the Society of Antiquaries.

Mr. Blomfield's practice, commenced in 1884, is a very large one, principally in large country houses, but he has also designed school buildings, one or two clubs, banks and other business premises. It is impossible to mention more than a tithe of his works, but among the principal the following may be mentioned:—

Country Houses.—Apthorpe, Northants; Brooklesby, Lincolnshire, for the Earl Yarborough; Boldre, Hants, for Mr. Herbert Alexander; Barwythe and Gog Magog, Cambridgeshire, for Mr. Ernest Alexander; Heathfield Park, Surrey, for Mr. V. Alexander; new hall at Drakelow, Derbyshire, for Sir Robert Gresley, Bart.; Elford, N.B., for Admiral Bainbridge; Camthorpe, Lincolnshire, for the late Mr. Edg. Lubbock; Cowley Place, Usbridge, for Major A. Tylden Patterson; Chequer Court, Bucks, for Mr. Arthur Lee, M.P.; The Friars, Winchelsea, for Mr. G. L. Freeman, K.C.; Godington, Kent, for Mr. Ashley Dodd; Saltcote Place, Rye, for Mr. R. Hennessy; Leasam, Rye, for Rear Admiral Sir George Warrander, Bart.; Knowlton, Kent, for Mr. Elmer Speed; Mystole, Kent, for the late Mr. Pomfry, M.P.; Mellestam, N.B., for Col. L. Binning; Murraythwaite, N.B., for Mr. Murray; Garmons, Hereford, for Sir John Cotterell, Bart.; Whitehall, Sandwich, a Hill Hall, Essex, for Mr. Charles Hunt; Whittington, Great Marlow, for Sir Huds. E. Kearsley, Bart., M.P., and Wyphur Cranleigh, Surrey, for Sir Charles E. Chadwyck-Healey, K.C.B., K.C.

Town Houses.—No. 6, Grosvenor-lane, London, for Mr. George Albu; No. 20, James's-street, London, and Kent House (reconstruction), Knightsbridge, London, for Mr. Saxon Noble.

Miscellaneous.—The Goldsmiths' College extensions; New Cross; Sherborne School Buildings; Whitby School, Chichester; school buildings, Haileybury College, and the South African War Memorial there; alterations to the Oxford and Cambridge Club, London; the United University Club, London; Paul Cross, St. Paul's Cathedral, London; London County and Westminster Bank, King's-road, Chelsea; warehouse, Greycoat-place, Westminster; Portsea Parish Institute, etc.

Of the recent buildings illustrated in t



"Whitehall," Sandwich: from S.E.
Professor Reginald Blomfield, A.R.A., Architect.

Wyphurst, Cranleigh, Surrey, is a large extension and practical rebuilding of an old and much smaller house, seen on the left of the general view, which in turn is an enlargement of a cottage. The work on the extreme right has been confined into a private chapel, and the house has been planned afresh with the exception of the old dining-room. To the west of the house an enclosed private garden has been laid out, with raised grass walks and water-features. The walls are faced with thin red bricks and Portland stone dressings, and the floors are covered with red tiles. Leaded glass windows and metal casements are used for the lower floors. The stone carving, including a fine panel over the hall chimney-piece, is the work of Messrs. W. Aumonier & Son; the plaster ceiling in the same

room, and that in the drawing-room also, were carried out by Messrs. G. Jackson & Sons.

At Chequers Court Mr. Blomfield practically reconstructed the interior of an historic Buckinghamshire house, the work being carried out for Mr. Arthur Lee, M.P. Our view shows the oak screen, with gallery over, in the hall, this being an exceptionally fine piece of modern woodwork. The oak-work was executed by Messrs. Maides & Harper, of Croydon, the carving of the spandrels, etc., being the work of Messrs. W. Aumonier & Son.

Whitehall, Sandwich, is a golf-box built for Mr. Charles Hunter on the edge of the shore between Deal and Sandwich links. The seawater penetrated within 2 ft. of the footings at high tide, and accordingly the

whole of the site was covered with a raft of concrete, on which the house has been built. The walls are built with a hollow space, and are harled or roughcasted on the outside; and the roofs are covered with Delabole slates. Mr. T. J. Denne, of Walmer, was the general contractor; the sanitary work was carried out by Messrs. Matthew Hall & Co., and the house is lighted on the system of the Non-Explosive Gas Company, Ltd. The work at Kent House, Knightsbridge, represents alterations and decorations that have been carried out for Mr. Saxton Noble. These included the formation of a new entrance hall, alterations to the drawing-room, the provision of new heating and hot-water installations, and a fresh drainage scheme. In the hall the ceiling is picked out with gold, which, owing to the photographic



Chequers Court, Bucks: The Hall.
Professor Reginald Blomfield, A.R.A., Architect.

reproduction, comes out too black in the illustration.

Moundsme Manor, Hants, is one of Mr. Blomfield's latest big houses, and was designed for Mr. Wilfred Buckley. The grounds necessarily do not yet show to any advantage. The walls are faced with thin red bricks, five courses to the foot, the quoins and other dressings being of Portland stone. The entrance is on the north side, the porch leading at once to a dignified and well-proportioned hall, from which the staircase hall is separated by a columnar screen. Beyond this in the west wing is the billiard-room, approached by a short corridor passing the study, which latter faces west. A private entrance for the study is planned in the south-west corner of the forecourt. The library, drawing-room, and dining-room face south, occupying the whole of the ground floor on that front. The kitchen and servants' quarters are grouped round a court on the east side, the kitchen itself forming the ground floor of the east wing, balancing that on the west. The bedrooms are planned on the American system, being arranged in suites of two, separated by a space in which a bathroom, serving both rooms, is contrived on the window side, the corridor side of this space being taken up by large clothes closets for each room. A nursery suite is arranged on the second floor, where also are the servants' bedrooms. The house is warmed by a central system of heating, the radiators being fixed under the windowsills, and having fresh-air inlets. A fire hydrant system has also been provided.

It is fortunate for English architecture that the trammels of practice have not absorbed all Professor Blomfield's energies, and that he has been able to exercise his gifts as a writer. In addition to powers of lucid exposition and literary expression, he possesses a keen analytical faculty and a liking for original research. Though his "History

of the Renaissance in England" (perhaps his best-known work) is generally cited as one of the leading text-books on the subject, Mr. Blomfield has never written a text-book in the generally accepted sense of the term. A text-book is usually regarded as a dry restatement of accepted facts, set out in a more or less handy form for easy assimilation by students, but Mr. Blomfield's writings are the exposition of his personal views on architecture, based on analytical studies of men and buildings, the results of research, the revaluation of accepted conclusions and accomplishments, and, in some cases, the pricking of bubble reputations. Indeed, English architecture had long been in need of such trenchant criticism as Mr. Blomfield has been able to give it. The disposition to base fresh arguments upon the conclusions of previous writers, conclusions too often resting on no more substantial basis than personal predilection, has been a stumbling-block in our architectural literature. Our view has been hampered by interposing a veil of reputation in front of names that are but shadows in architectural history. If the Professor tears down these veils, whether we agree or not with the reasons for so doing, we are at least indebted to him for showing us upon what slender foundations our own esteem is built. Thus Mr. Blomfield scouts the claims of John Thorpe to pre-eminence, and, indeed, they rest on little but his book of drawings, and Horace Walpole's attributions, which latter fail badly under close scrutiny. In the same way, and within the last few months, Mr. Blomfield has attacked the pretensions of Du Cerceau, who, though only a name to many of us, has, at all events, always been a great name.

An interesting article in his "Studies of Architecture" is that on Dance the younger, who will be remembered as the architect of Newgate, one of the finest conceptions of a prison, in the abstract, ever carried into

effect. This was Dance's only work of merit, and it is curious that a man who could carry architectural expression to so high a pitch should have failed in everything else that he did. Of course, it is not uncommon for a man to achieve one thing that lives in the course of his career, and most people are content to accept the fact. Such an occurrence, however, is a provocation to Mr. Blomfield, who reveals to us the operation of great influences on an inferior mentality, and shows how Newgate, the second work attempted by Dance after his return from Italy, may be traced to the magnetic influences of the great Italian buildings, and in particular, to Piranesi's dreams of Cyclopean masonry.

Indeed, this argument from the man to his work is one of the principal features of Mr. Blomfield's criticism. Stated in his own terms, it lies in "realising the personality of the architect and tracing its effect in his work. The vital interest in architecture is the human interest, the play of personal temperament, which is as clearly traceable in the works of architects as in those of painters and sculptors." This method is far cry from the older criticism, which interested itself only in a comparison of the buildings themselves, seeking, in the absence of definite attribution, to establish the authenticity of the work by similarities of style. Here the newer criticism proves its value, since when so much concerning the earlier architects is vague and inconclusive, the possibilities or probabilities of a man's connexion with certain buildings of his time can frequently be determined by personal characteristics of the circumstances of his life.

The popular fallacy that architecture synonymous with decorated construction—that however badly a building may be conceived and planned, architectural merit can be conferred upon it by titivation, is one that Mr. Blomfield has always strongly resented. "Architecture," he writes in "The Mistress Art," is primarily building; the mode of planning and of covering in the space planned, and the manner in which this covering is carried out, the leading idea which conveys, is the essential element in architectural design." Bearing upon the same point, he says, in another passage, "Architecture consists 'in the masterly combination of all the parts, so that they unite in one appeal to the imagination and the emotions. Some such quality as this is believed to be the essential force of architecture, and that which alone justifies its claim to be the most intellectual of the arts. It is a quality which can only be attained by the perfect use of the technique of the art itself; that is, however much architecture may be enhanced by sculpture and painting, should rely on itself to produce its peculiar impact on the senses.'"

"The Mistress Art," as a title, conveys in itself an indication of the rightful position of architecture, for the recognition of which Mr. Blomfield contends. It is once more an appeal for the greater verities of architecture, imperfectly described by the phrase, "the grand manner," which are not concerned with the mere surface tricks and prettinesses of "ornamenting buildings." Quoting Mr. Blomfield again: "Architecture is not cabinetmaking, neither is it goldsmith work, but a grim, intellectual art, moving amid big conceptions, ever brooding over them in the spirit of that strange figure Dürer's 'Melancholia.' Its province is the handling of masses of building, not the dextrous manipulation of detail." In the last sentence Professor Blomfield not only gives the keynote of great architecture, but the reason why so many of our public buildings fall in comparison with those of France and America.

In these few notes on Mr. Blomfield's books we must not forget to mention the first, "The Formal Garden in England," now in its third edition, or the "Short History of the Renaissance in England."



[Photo by E. Doehring.]

Kent House Knightsbridge: The Hall.
Professor Reginald Blomfield, A.R.A., Architect.

led for students. A further volume was expected from his pen in the autumn, with French Architecture from the reign of Charles VIII to the death of Louis XIV. This will be in two volumes of the size of "Renaissance Architecture in England."

THREE EXHIBITIONS OF STUDENTS' WORK.

The viewing of students' work must in these days be a hopeful and cheering occupation, and by a natural inversion becomes a passing in the extreme. To those who remember the days when students' work hardly to be seen at all outside the Municipal office which gave direction to the student's effort, and formed the only, if not the critical jury of its result, this is a new time, when one may see great visions of directed and more or less finished study, must seem to be the beginning of a new, if inevitable, age. To those men who were familiar with architectural schools in their inception, and the debilitating effect, with Gothic bias, which was their inevitable tendency they now may, to turn to one direction, if not actually to coalesce, must afford some ground of prediction for the future. The fitness of the growth and the process of education, which educational measures on the part of architecture display must, yield one reason to watch it a profound satisfaction, of course, an assured despair. But the observer turns from the progress of the student to the static sameness of its results, and is apt to wonder whether all this pother of reality of any avail, or affords anything more than the fashions of the time. It is really this so if he happen not so long ago to have come himself from one of the schools or to have retained a recollection of such place sufficiently vivid to permit him, in the spirit, to return. For this sort of observer, from this point of view, a survey of the sameness in fundamental character of all shows of students work can but rise to a philosophical sadness—in fine with the spell of hot weather we have ended. He sees men striving after tricks of design as in drawing—if not precisely in fashion of his own day, then in the fashion of this, and no better for that; sees a successful man, as often as not, succeed—never, by reason of an assured facility in drawing and an imitative knack in design; notices in a young student betraying a ready acceptance of the orthodox way, says to himself, "This may evaporate"; sees here and there (for such things do not easily gain admission) a design drawn with difficulty, unusual, *gauche*, atrocious, but showing real, if painful, effort, and says (remembering his student days) and what has happened to which men say "Here there is hope." We give attention to these views, perhaps, as much as a desire to rectify somewhat the natural tendency consequent on early failure or success as from an impulse to enunciate the truth; we feel, however, that so much is not enough, and that to be more particular must be dangerous and of doubtful issue. The Architectural Association exhibition is worthy in that it gives evidence of a change on the part of the governing body to the trend of the teaching dispensed more in the line of the coalescing direction upon which we have remarked. True, there is no trace of any abandonment of the characteristic qualities of the school. The total impression given is still one of smallness, which is yet not precious, of a multitude of pieces which are not, as far as one may judge from the details of some greater entity. The students are encouraged to produce designs the lesser vernacular of the English Renaissance, in the Byzantine style for town houses and in modern "Gothic" for town houses, all doubtless desirable and admirable, perhaps, if it be assumed that these are the things to which the student will actually have to turn. Among the hundred work we noticed two very nicely drawn and complete barns and a small town which was practically the same thing, showing the work of the younger men, designs

for a combined town hall and pump-room of small dimensions were prominent, an excellent subject were it not that one felt that it was set on the principle that a very young man should be put to design very small things, whereas the contrary is more often the judicious way; for it is youth that will embark on an epic in nineteen books, and maturity that may devote a week to the pruning of an epigram. And it is pleasing, therefore, to note that the A.A. school, although it still maintains the characteristics with which it is credited and the policy of which we have never been able entirely to approve, is venturing into the realm of monumental design. There is an Approach to a Municipal Acropolis produced in the first term of the second year, and a design for a Town Library by a third-year man, which sufficiently shows that the venture is likely to be attended with success, as well as a Study in Town Planning of the most arid sort, that indicates that the "human, all too human," teaching of the old régime may give rise to a reaction more dreadful than its cause. But the news that Professor Pite is in future to be associated with the school as far as this side of its activity is concerned induces us to look forward with the greatest interest to the school's development. Those students whose bent is towards large design will work under the best direction, and the A.A. exhibition may in the future be confidently expected to display, as well as examples of the faculty of application to lesser themes, a sense of the concept "architect," of his function as co-ordinator, supreme and focal, of the whole.

Very different from that of the A.A. School is the impression given by the exhibition of the year's work of the students of University College under Professor E. M. Simpson. Here we find coherence, by no means rigid, yet assured. Some allowance should be made for the method of presentation in each case; for the manner of drawing in careful ink and wash and on a uniform size of paper gives the University College show an easy advantage from the outset over the pencil and colour of the other. But, this allowance being made, Professor Simpson's students are seen to be steadily looking to the XVIIIth century and the neo-Grecque for their motives in a way that makes it possible to view their work as that of a definite school. Here there is no "Town-planning" as yet (though a finishing course in monumental design under Mr. J. J. Burnet, A.R.S.A., F.R.I.B.A., is to commence next session), but on a very firm grounding of the Orders, worked into some interesting arrangements of existing examples, there are designs for large houses and town structures (we hope to be able to reproduce parts of a design of the third year of the Degree Course) which show a considerable measure of achievement within the limits of the aim of the school. The movement which is on foot to unite this school with that of King's College may easily enable the University of London to become the chief guardian of the interests of architectural education in the metropolis.

The third school which came under our notice on Friday last was the L.C.C. Central School of Arts and Crafts, which, we regret to say, as far as architecture goes, is unworthy of mention, if not positively deserving blame. But as a necessary corollary of the spread of the teaching of architecture proper this with kindred institutions scattered over London is of very great importance. And this importance must grow, as the technical school continues increasingly to supplant as well as to supplement apprenticeship in the handicrafts. The technical schools are the necessary accompaniment of the architectural schools in the trend of present development and each other's vital complement. One finds in them, as in the architectural schools, that the personal factor is by no means eliminated, as advocates of apprenticeship are accustomed to declare. So far from being lessened, the invaluable factor seems to reach a higher potency, even in an institution as bureaucratic as a school of arts and crafts may become. In the case of the Central School, for instance, offering curricula much the same as many another, the lettering, written, carved, painted, or printed, stands out as something of unusual

sanity, thoroughness, and charm as compared with the other exhibits, which, though of sound merit, were very like the things that other schools of the same kind display.

THE ARCHITECTURAL ASSOCIATION.

THE annual exhibition of students' work was opened on Friday, the 21st inst., at No. 18, Tufton-street, Westminster, S.W. It comprises a large selection of drawings made by the pupils in the first, second, third, and fourth years (see p. 97). A large company of relatives and friends of the students attended during the afternoon, and the President (Mr. Gerald C. Horsley, F.R.I.B.A.) read the list of awards and prizes, as follows:—

First Year's Awards.

First place in History Test Paper: H. J. H. Dicksee.
First place in Construction Test Paper: H. J. H. Dicksee.
First place in Geometry: H. J. H. Dicksee.
First place in Physics: H. J. H. Dicksee.
First Place in Freehand Drawing: E. C. Davies.
Best Portfolio of Drawings: H. J. H. Dicksee.
Hon. mention: R. S. Wallace, E. C. Davies, H. G. Satchell, and E. Hayman.

Second Year's Awards.

Travelling Studentship for Studio and Lecture Work: D. J. Gordon.
Hon. mention: T. W. Dowsett, C. M. Cooper, G. Fildes, and C. G. Ripley.

End of Session Test.

First: D. J. Gordon.
Specially commended: T. W. Dowsett, Stanhope Bennett, and C. F. Aldous.

EVENING SCHOOL.

Preparatory Course.

Scholarship: E. Kennedy Smith.
Book Prize: J. B. M. Walsh.
Master's Prize: J. A. Hale.

Third Year.

Scholarship: A. B. L. Roberts.
Book Prize: G. W. Stuart.
Master's Prize: T. F. Ford.

Fourth Year.

Travelling Studentship: H. V. C. Curtis.
Book Prize: F. A. Crouch.
Master's Prize: F. A. Crouch.
Mr. Gerald C. Horsley, F.R.I.B.A. (President), Mr. H. P. G. Maule (headmaster), Mr. W. Robert Colton, A.R.A., and Sir Aston Webb, C.V.O., C.B., R.A., addressed the visitors and students.

Appointment of Professor Beresford Pite.

The President announced that Professor Beresford Pite, F.R.I.B.A., had been appointed Director of Education in the school. Professor Pite will have under his care especially the third and fourth year students in the evening school, while Mr. H. P. G. Maule will continue to act as headmaster of the day school. Mr. Maule, assisted by Mr. C. E. Vardell, A.R.I.B.A., will co-operate with Professor Pite in the general direction of the work of the school.

THIRD SUMMER VISIT.

On Saturday, July 22, a good attendance of members endured a very hot journey and walk from Sevenoaks Station in order to enjoy a visit to Knole House. The history of the present building commences practically with the ownership of Thos. Bouchier, Archbishop of Canterbury, during the Wars of the Roses. He purchased the estate from Sir William Fiennes, Lord Saye and Sele, in 1456, and rebuilt the house, large portions of the present work dating from his ownership, though often overlaid by Elizabethan and later additions. The archway from the outer or Green court to the Stone court, with the charming oriel window and machicolated parapet above, are the most conspicuous external features of this date. Bouchier's successor, Cardinal Morton, Chancellor to Henry VII, and originator of the celebrated paradox known as "Morton's Fork," also spent great sums on the house, which had been bequeathed by Bouchier to

the see. Warham and Crammer were often at Knoles, which frequently entertained the King, to whom the property was surrendered by Crammer in 1537. He is said to have built the chapel. In 1603 Thomas Sackville, afterwards first Earl of Dorset, came into possession by grant from Queen Elizabeth after the termination of certain leases. The estate had been previously granted by the Queen to Dudley Earl of Leicester, who, however, restored it to her. Sackville added the buildings on either side of the gateway tower on the north-west front. The direct line becoming extinct, the earldom lapsed, but the property continued in the family, the present owner being the third Baron Sackville.

Such a great rambling house as Knoles would require days to see and appreciate properly, and only the most cursory inspection was possible. Crossing the Green court and the Stone court, the great hall is entered beneath a colonnade of widely-spaced stone columns supporting the wooden entablature and balustrade of a wide balcony bearing the date 1748 on one of its dies. The hall is a lofty apartment, with a flat ceiling enriched with rather angular ribs and small pendants. A good heraldic screen with minstrel gallery over may be dated by the arms about 1603. Some very beautiful steel firedogs formerly belonging to the Boleyn family were greatly admired. The main staircase, of typical Elizabethan form, in short, straight flights with figures on the newels and arched screen on the first-floor landing, is approached from the dais end of the hall. The ballroom is finely panelled in oak elaborately carved and painted white. It has also a fine ceiling of later type than the hall, in which the ribs have flattened and widened to receive modelling. The marble chimneypiece in this room is one of a very fine series, considerably above the level of design usual in the Elizabethan style; an uncommon feature is the engraved pattern on the lintel. The crimson drawing-room or Reynolds room also has a good ceiling, and a chimneypiece in which the termes have bronze heads and feet. In the cartoon gallery is the well-known ceiling with the wavy pattern resembling net tracery. Another fine chimneypiece and a charming bay facing it add to the attractions of this beautiful apartment. The pictures everywhere are good, but three splendid Holbeins and a fine Tintoretto here call for special remark. James I.'s bedroom, containing a magnificent collection of furniture and silver, has a ceiling of different form and very interesting design. It consists of a series of square panels, each enclosing a modelled wreath. From the corners of the squares and within the wreaths are very delicately-worked sprays of foliage—a charming and not too hackneyed treatment. The remaining rooms were apparently of earlier workmanship and partly of timber construction, including a series of oriel windows. These rooms have very simple chimneypieces with moulded jambs having fanciful steps, and unusually well-designed Arabesque carving on the rather deep lintels. A billiard table, of which the legs and frame date from the days of Charles I., attracted much interest. A room adjoining this wing, known as the Venetian Room, is said to be decorated by Inigo Jones. It is a quiet and refined piece of work, with a good Venetian window and simple chimneypiece, but certain tricks of detail rather suggest a later designer—possibly Kent. In the chapel a triptych was seen which was said to have been presented by Mary Stuart, to the Earl of Dorset on his conveyance of the knowledge that her death warrant had been signed by Queen Elizabeth. The exterior of Knoles is inclined to be austere, but its brick chimneys and fanciful lead rainwater heads give it great interest.

MILNTHORPE MAIN SEWERAGE.

The South Westmorland Rural District Council have had under consideration for some time the question of sewerage of the village of Milnthorpe. In years gone by it was a noted coaching centre, being on the London and Carlisle main road. The District Council have now instructed Mr. Harry W. Taylor, A.M.Inst.C.E. (Messrs. Taylor & Wallin), of Newcastle-upon-Tyne and Birmingham to consider and report to them as to the best and most satisfactory means of dealing with the sewage of this town.



[Photo, Lewis.]

Branch Library, Monkwearmouth, Sunderland.

Mr. Edward Cratney, Architect.

BRANCH LIBRARY, MONKWEARMOUTH.

The building has been planned with a view to working the Library with as small a staff as possible. The principal rooms are grouped round the entrance-hall, which gives access to all parts. The delivery counter is so placed that the Librarian has direct supervision of all the main rooms.

The Library is arranged on the "safe-guarded" open-access system. The walls are built of Withnell bricks, with Spingwell stone dressings, and the roofs are covered with green Westmorland slates. The floors of the main rooms are laid with maplewood blocks. The whole of the woodwork in the main rooms and the interior fittings are of oak.

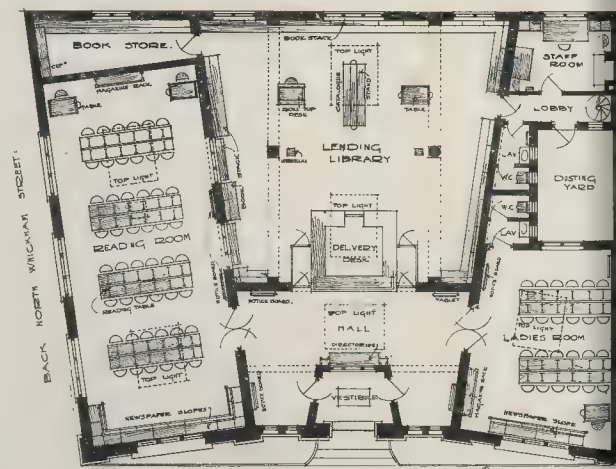
The building was designed by and carried out under the supervision of Mr. Edward Cratney, architect, Wallsend-on-Tyne. The contractor was Mr. Joseph Huntley, of Sunderland. The carving was executed by Mr. Christian Neuper, Newcastle. The delivery desk was furnished by Messrs. Robson & Sons, Newcastle. The whole of the fittings and furnishings were carried out by Messrs. Laidler Robson, Ltd., Sunderland, to the designs of the architect. The heating system, hardware, and entrance gates were carried out by Messrs. Emley & Sons, Newcastle. Mr. T. Cooke, Sunderland, was clerk of works.

THE ROYAL SANITARY INSTITUTE CONGRESS.

The twenty-sixth Congress of the Royal Sanitary Institute opened at Belfast Monday, when upwards of 750 delegates members attended from all parts of the United Kingdom. The Congress was inaugurated by a luncheon in the City Hall presided by the Lord Mayor of Belfast, who was supported by the Lord Lieutenant of Ireland (the Earl of Aberdeen), Sir Henry Tait, F.R.I.B.A., Messrs. John Slater, F.R.I.B.A., H. D. Searles-Wood, F.R.I.B.A., E. T. H. F.R.I.B.A., W. Kaye Parry, F.R.I.B.A., H. Percy Boulnois (Chairman of the Council of the Institute), E. White Wallis (Secretary).

Exhibition.

Subsequently the Lord Lieutenant of Ireland opened the Health Exhibition held in connexion with the Congress. One of the chief features of this was the City Town Planning Exhibition arranged by Professor P. Geddes and Mr. F. C. Mears. Exhibition was, as far as possible, representative of the contemporary movement of town planning and city improvement. As regards suburban developments, it presented a series of plans, photographs, etc., illustrating the leading types of garden villages, garden suburbs in this country and abroad. A similar series indicated the more important central improvements of streets, boulevards, etc.



Branch Library, Monkwearmouth, Sunderland.

Mr. Edward Cratney, Architect.

and so on in the leading capitals and important cities. In conjunction with these, fully-prepared series of exhibits and models outlined the essential procedure of methods of town planning and city improvement in Germany, England, Scotland, Ireland.

Amongst the firms who exhibited were the Messrs. T. Parsons & Sons, 10, Pall-mall, London, showing paints, glazes, and enamels; the Hygienic Confection and Portable Buildings, Ltd., 1, Queen-street, E.C., with models of buildings supplied to different authorities for their purposes; W. D. Henderson & Sons, Belfast, with all kinds of builders' materials, general fireproof goods; the Albemarle Company, Ltd., Milverton-street, Kennington, showing specimens of "Albemarle" or Portland marble for wall covering; Heenan & Co., Ltd., Manchester, showing models of destructors; the British Sanitary Company, of Glasgow, with various types of closets; the Middleton Fireproof Works, with glazed bricks and buff building stones for facing public buildings; the Albemarle Company, with their various disinfecting preparations; George Howson & Co., Southampton-road, with a large exhibit of chain baths, sinks, lavatories, etc.; the Albemarle Company, Shirlingshire, with porcelain lavatory stands, etc.; D. Anderson & Co., Ltd., Ford, E., who showed the "O.P." washable water-paint; and Mr. W. P. Dibdin, who showed a section of the original slate bed invented by Mr. W. P. Dibdin.

Presidential Address.

A reception held on Monday evening at the Dunleath delivered his presidential address. Having spoken in high terms of the progress in health matters made in Belfast, he considered some aspects of sanitary administration of more general application, and placed at the sanitary conditions of our towns and some sixty or seventy years ago. Since then, he said, every municipal authority worthy of the trust committed to it had exerted itself by constructing an efficient system of drainage, by the clearance of insanitary dwelling-houses, by the removal of dirt from the streets and from the houses so as to purify the air which the people were breathing, whilst municipal authority worthy of its post had provided an ample supply of the water which it could obtain from the most possible sources. Having shown how these efforts had been reflected in the death-rate, he pointed out that the conditions of many of the smaller towns and villages demanded the most serious attention for sanitary reform, and urged that the opinion should be freely exercised on backward communities.

Sewage Purification.

That interest was manifested in the discussion which took place on Tuesday, July 18, on the subject of Sewage Purification. Discussion was opened by Dr. Rideal, who complained strongly of what he described as the "wait-and-see" principle of the recommendations of the Royal Commission on Sewage. He contended that in the future all sewage must be purified before being discharged into river waters, and that sedimentation was not purification. The two great objects to be got rid of were aerial nuisance and pathogenic organisms, and these were not removed by sedimentation, although they were by sterilisation. Mr. Watson (Birmingham) severely criticised the flippant attitude in which Dr. Rideal had dealt with the matter, and maintained that the finding of the Royal Commission that every case must be treated on its merits was the only sound principle of dealing with the matter. Mr. A. P. I. Brill (Bristol) and Professor Letts (Bristol) upheld the view of Mr. Watson, and latter instanced the case of Birkenhead, Liverpool, which were able to discharge treated sewage into the Mersey without ill-effects, whereas Colchester, which was a tidal river, but with a very slow flow, had to resort to a complete scheme of purification. Mr. Kaye Parry, on the other hand, thought it was necessary for the Royal Commission to lay down what they really meant by purification, as he did not consider sedimentation was purification. Consequently, a resolution proposed by Mr.

W. H. Williamson (City of London) was considered, to the effect that steps should be taken to secure a permanent stoppage of the existing evils of sewage pollution caused by the discharge of crude sewage in rivers and estuaries.—Mr. A. E. Prescott (Borough Engineer, Eastbourne), Mr. J. Powell (Staffordshire County Council), Mr. Munce (Belfast), Alderman Mattison (Middlesex-borough), Mr. H. G. Whyatt (Borough Engineer, Grimsby), and others took part in the discussion, and the opinion was freely expressed that it was impossible to apply a general rule to all cases, inasmuch as local conditions varied so considerably. Eventually the motion was withdrawn.

GENERAL NEWS.

Professional Announcements.

Mr. William Hunt, J.P., L.C.C., Donington House, Norfolk-street, Strand, W.C., architect, has taken his son, Edward Arthur Hunt, into partnership, and the work and business of the office will be continued under their joint personnel. Mr. William Hunt has been in practice for many years in Norfolk-street. Previous to his removal his offices were in Adelphi at Adam-street and York-buildings. Mr. Edward A. Hunt served his articles with his father, whom he now joins as partner. Their names have been jointly associated with several buildings lately erected, some of which have been illustrated in *The Builder*.

The offices of Messrs. J. W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., 3, Verulam-buildings, Gray's Inn, W.C., will be closed from August 7 to 21, both days inclusive, for the annual staff holidays. Arrangements will be made as usual for dealing with business referring to all buildings in actual progress.

Appointment.

Count Plunkett, H.A., R.I.B.A., has been unanimously elected President of the Museums Association for the year 1911-12.

Honour for Mr. J. W. Simpson.

We hear that Mr. John W. Simpson, Vice-President of the Royal Institute of British Architects, has received from the French Ambassador the brevet of Officier de l'Instruction Publique, which has been awarded to him by the Minister of Public Instruction and Fine Arts for services rendered to French art.

The King Edward Memorial.

A meeting of the Executive Committee of the King Edward Memorial Fund was held at the Mansion House on the 21st inst., when it was resolved not to submit to public competition the commission for the West-end Memorial, but to associate an architect with a sculptor in the preparation of suitable plans and designs. Finally, it was decided to invite Mr. Bertram Mackennal, A.R.A., as sculptor, and Mr. Edwin Lutyens as architect to prepare and submit to the Committee plans and designs for a statue of King Edward at the Piccadilly end of the Broad Walk in the Green Park. The questions of a memorial in the East-end and of utilising for other purposes any balance which may remain after the two Memorials have been provided were left over for further consideration.

Church Restoration.

The Twenty-second Congress of Archaeological Societies in union with the Society of Antiquaries (London), recently held at Burlington House, under the presidency of Dr. C. H. Read, F.S.A., unanimously carried a rider, moved by Mr. P. M. Johnston, F.S.A. (Sussex), to the Council's resolution to the effect that the position of the Society of Antiquaries in advising diocesan authorities in respect of church restoration, should be strengthened by the grant of additional powers through the Royal Commission on Ancient Monuments (England), and recommending the appointment of the Society as the advisory authority for England and Wales in all matters pertaining to the furniture, fabric, and monuments of churches. Mr. Johnston's rider related to the recent appointment by the Sussex Archaeological Society of a special committee to watch over the ecclesiastical antiquities of Sussex, and asked the Congress to commend a similar course of action to the consideration of other local archaeological societies.

Fotheringhay Castle.

The Peterborough and District Archaeological Society have made excavations about the mass of worked stone, lying by the left bank of the Nene, which is the only remains *in situ* of the fabric of Fotheringhay Castle. The mass of stone fell, it is said, from the keep on the mound. An examination shows that it is the backing of a fragment of tooled and weather-worn Barnack ragstone from it is supposed, the outer wall of the keep at its junction with the south bastion; the masonry also presents an inner obtuse angle with a complete plinth. The relic has been erected vertically in what is believed to be its original position. Edmund of Langley, fifth son of Edward III., rebuilt Simon de Liz's castle, and planned the keep in the shape of a fetterlock. He had acquired it from Mary of Valence, Countess of Pembroke; it afterwards passed to Elizabeth of York, consort of Henry VII., and then in dower to Queen Katharine of Arragon. The vulgar error that James I., moved by filial piety, pulled down the castle is refuted by the fact that he bestowed it upon Lord Mountjoy and two others, as well as by a survey made on April 3, 1625 (a few days after the King's death), which specifies the chapel, the hall on the first ascent, the keep, the great dining-room, with several other buildings, the two ditches, etc. The moats and outworks may still be traced; the central mound remains. Authentic views and plans are very rare; the interior of the hall since rebuilt at Cunningham—is depicted in the "memorial" whole-length portraits of Mary Queen of Scots, lent to the Stewart Exhibition, 1889, by Queen Victoria, Lord Darnley, and Blair's College, Aberdeen. In the background of each is represented the execution of sentence upon Queen Mary with a view of the interior of "Avla Fotheringham." In the "Talbot" Inn, Oundle (illustrated in the *Builder*, December 3, 1898), are a staircase and some stonework from Fotheringhay Castle.

Property Sales.

Trentham Hall, in Staffordshire, formerly a seat of the Dukes of Sutherland, which was lately offered to the federated borough of Stoke upon-Trent, has been disposed of to Messrs. Young & Son, of Longton, and the mansion, the two side wings excepted, will be pulled down. The early XVIIIth-century house was altered by Holland for the Duke of Sutherland, and Sir Charles Barry carried out an extensive scheme of enlargement and improvement. L. Brown laid out most of the grounds, and Barry the gardens. Of properties recently placed in the market we may mention the Upper House Court Estate, Womersley, Surrey, with the XVIIIth-century manor house to which Mr. R. Norman Shaw, R.A., made extensive additions; Buccleuch House, the well-known riverside house at Richmond, formerly occupied by the Dukes of Buccleuch; New Synagogue, with adjoining buildings, on a site of 12,800 ft. super. in Great St. Helen's, E.C.; Piccadilly-arcade, with Empire House, Piccadilly, and Brunswick House, Jermyn-street, comprising offices, chambers, and twenty-eight shops, as recently erected after Mr. Thrale Jell's designs, upon the sites of Nos. 174-5-6, Piccadilly, and Nos. 52-3 (the Brunswick Hotel), Jermyn-street; Nos. 47-8, Dover-street, Piccadilly, rebuilt as Premier House, from Mr. G. D. Martin's plans and designs ten years ago; Falcon-square Congregational Chapel, Silver street, with Nos. 1-2, Windsor-court, E.C., of which the trustees propose to effect a sale at the price of 9,000*l.*, failing a higher offer; and Bear Wood, Berkshire, extending over 3,000 acres, the seat of the late Mr. Walter, of the *Times*, for whom the mansion was built by Professor Kerr.

Geological Survey, Great Britain.

A summary of progress of the survey of Great Britain, 1910, is published by the Board of Agriculture and Fisheries. For England and Wales the work has been begun in the London and south-eastern districts for the first time upon the 6-in. scale, and in the Warwickshire, Flintshire, and Denbighshire districts, with special attention to the formations that lie over the coal measures, and to the visible coalfields. For Scotland, the original survey has been continued in the West Highlands, with Mull and South Morvern, and in parts of the counties of Inverness, Sutherland, and Perth in the North and Central Highland District.

COMPETITION NEWS.

Wallsend School.

Messrs. Marshall & Tweedy, of Newcastle-on-Tyne, have been awarded the first premium (304.), and Mr. Edward Cratney, of Wallsend, has received the second premium (204.) in the competition for a new elementary school, Wallsend. The assessor was Mr. A. W. S. Cross, F.R.I.B.A. The accommodation provides for 1,440 children in three departments; also cookery, manual, and dining room for children, caretaker's residence, and three classrooms for domestic subjects. The whole of the schools are single-story buildings, and embody the latest requirements of the Board of Education with respect to central halls and the better ventilation and isolation of classrooms.

Messrs. Marshall & Tweedy were also successful in securing the first place in the competition last year for new schools for the Northumberland County Council erected at Whitley Bay, and were architects for the King Edward Schools opened last year. They have recently been appointed architects for a new school for the Durham County Council to be erected at Greencroft for 900 children, the plans of which will be prepared on similar lines to the Wallsend School.

Northampton Secondary School for Girls.

The Higher Education Sub-Committee of Northampton Town Council have received a report from Mr. James Osborne Smith, F.R.I.B.A., Old Queen-street, Westminster, S.W., assessor in the competition for the erection of a secondary school for girls. In his report he states that he examined the twenty-two sets of drawings and particulars submitted, and after careful consideration of the merits and demerits of the different designs, he had arrived at the conclusion that plan No. 15, from Messrs. Sharman & Archer, Wellingborough, came first; No. 2, from Messrs. Talbot, Brown, & Fisher, Wellingborough, second; and No. 10, from Messrs. Gotch & Saunders, Kettering, third; while designs Nos. 19 and 20, from Messrs. H. H. Dyer & Son, Northampton, and Messrs. Talbot, Brown, & Fisher, Wellingborough, respectively, followed in order of merit. Mr. Smith then goes on to say, with regard to the designs as a whole, that they fell short of that standard of compactness and economy in planning which it is possible to obtain, and in all the five sets of the plans above mentioned it would be possible, without materially affecting the design, to introduce economies which would also be in the nature of improvements. In no case, he says, does the best use appear to have been made of the varying levels of the site. In most of the designs the gymnasium cannot be regarded as altogether a satisfactory room. In his report on the successful design the assessor writes as follows:—"No. 15 shows a good plan with an excellent assembly hall and an economical provision for future extension. The classrooms, domestic science room, domestic offices, cloak-rooms, lavatories, etc., are well arranged; the position of the gymnasium is, however, open to criticism, as are also the staircases and the lighting of art rooms. While the glass area has not been sacrificed for external effect, the treatment of the front elevation is distinctly good and in character with the use of the building." In conclusion, Mr. Smith states that the authors of the five designs mentioned have produced very carefully prepared drawings, indicating serious and intelligent efforts to satisfy the requirements of the undertaking. The Sub-Committee are to publicly exhibit the designs submitted.

THE ROAD BOARD AND NEW ROADS IN THE ENVIRONS OF LONDON.

The Board are about to proceed with the scheme for making a new road from Chiswick to Hounslow, passing to the north of Brentford, in lieu of their non-acceptance of the Brentford District Council's project for a widening of the High-street, Brentford Town. Steps will be taken to construct a "by-pass" road for Croydon, from near Thornton Heath, through Waddon to the west, and re-entering the main road at Purley. In this connexion it is interesting to refer to the report of the Traffic Branch of the Board of Trade, reviewed in our issue of March 10, pages 290 et seq.

CORRESPONDENCE.

Gidea Park Exhibition.

SIR,—Your correspondent refers to the Gidea Park Exhibition as a "revolutionary competition," and seems to think it is so in the sense of lessening the extent to which the architects' services will be required in future.

In my judgment the competition is "revolutionary" in quite another sense, in that it will tend, I believe, to bring the services of the architects much more into requisition than ever before.

The real significance of this competition to the architectural profession lies in a fact which your correspondent ignores.

The growth of London eastwards, and, in fact, in every direction, has, in the last ten years, proceeded with extreme rapidity, and hundreds of thousands of houses have been built in the outer suburbs with a minimum of architectural assistance.

The garden-suburb movement is tending to revolutionise the relations between building owners and architects.

In three years we have seen a quarter of a million poundworth of buildings erected at the Hampstead Garden Suburb, 90 per cent. of which have been designed by qualified architects. At Gidea Park the same effort is being made to secure architecturally-designed and properly-built houses for the ever-increasing population of Outer London.

Your correspondent raises the question whether it is desirable under any circumstances for the architect to invest in the house which the architect has designed.

Since the first Cottage Exhibition, held at Letchworth in 1903, there have been a good many competitions, mostly held under the auspices of the National Housing Council, in which actual building has been necessary to qualify a competitor. This was the case at the Sheffield Exhibition in 1907, Newcastle Exhibition in 1908, and the Swansea Exhibition in 1909.

All these competitions had one feature in common—that the expense of organising the Exhibition, amounting to a substantial sum, was not borne by the exhibitors, but by the proprietors of the Exhibition, and the same is the case at Gidea Park.

The promoters of the Gidea Park Exhibition are engaged in the task of educating the public to the view that it is desirable for the man in the street to live in the house which the architect has designed, and whatever the financial results of the Exhibition may be to the owners of the estate, it is obvious that the architectural profession will benefit as much as any class of the community by the success of their efforts.

I hope your correspondent will recognise these facts, and that his letter will not discourage owners of large estates from following the public-spirited policy pursued at Gidea Park.

Wm. THOMSON.

Chairman of the National Town Planning and Housing Council.

SIR,—Our attention has been called to Mr. Maurice Webb's letter appearing in your columns of the 21st inst.

We are not concerned with the writer's views as to the conditions under which architects have for some years, at Letchworth, Sheffield, Newcastle, Swansea, Gidea Park, and elsewhere, taken part in competitions which involved actual building either by the architect or a competing builder. We must, however, express our regret that Mr. Maurice Webb should have made references to the position of Gidea Park, Ltd., which are wholly inaccurate and which must have been written without any inquiry on his part as to the facts.

His letter would suggest to the uninformed that Gidea Park, Ltd., has sought to make substantial profits out of the competitors in the House and Cottage Exhibition now being held on part of their estate, has, to use his own words, "charged competitors at the rate of over 3,000l. per annum for trifling services."

That there is no foundation for these most improper suggestions the following plain statement of facts will show:—

The Exhibition in question is (except as to a few isolated houses) being held upon

34½ acres, forming part of 500 acres, of land adjoining Squirrels Heath and Gidea Park Station on the main line of the Great Eastern Railway.

These 34½ acres adjoin Raphael Park, to the west and the Romford Golf Course to the east, and were acquired by the company in autumn on the basis of the then value as fixed by the Government valuation at 10,447l.

For the purpose of the Exhibition the company made and sewered the necessary roads and laid out open spaces and provided facilities for building traffic at the following approximate outlay:—

Accounts rendered to date.....	£11,386
Estimated cost of completing roads	1,000
Total.....	£12,386

This cost does not include any sum in respect of access roads or connecting sewers outside the Exhibition area.

The total cost of land, roads, etc., therefore stands at 22,835l., and the land was prior to exhibitors at the total sum of 25,821l., leaving a gross profit, if all plots were disposed of, of 988l., or less than 5 per cent. This, however, does not represent any profit to the company. In the first place the company proceeded to reserve as a permanent open space 90 acres of the golf course immediately adjoining this land, the cost of which was approximately 15,000l. Nothing was added to the price of the plots in respect of this open space.

The company further voluntarily expended upwards of 3,000l. in advertising the Exhibition, and 1,400l. was expended in prizes and judges' fees. Nothing was added to the price of the plots or charged to competitors in respect of this outlay, or in respect of the company's general expenses incurred in connexion with the Exhibition; 121 plots were disposed of to competitors at the capital price of 16,279l. 10s. 10d.

Our clients, Gidea Park, Ltd., hope in the future to show that an enlightened policy in town planning, and the employment of the best professional assistance in building houses is not incompatible with dividends, but venture to think that the above figures make it clear that they have neither made, nor sought to make, any profit at the expense of anyone who co-operated with them in creating the House and Cottage Exhibition.

Mr. Webb's specific statement that the company have charged competitors 5s. for opening and shutting the Exhibition houses is incorrect. The company have performed this service entirely free of charge.

His statement that the company has charged at a rate of over 3,000l. per annum for trifling services is simply ludicrous.

The facts are as follows:—

For the convenience of a few competitors the company undertook to engage workmen to clean their houses and water their gardens. The company has performed these services for twenty-eight competitors only, and at a receiving in all 7l. 11s. per week, which, services are required until the end of the Exhibition, may amount to about 100l. Of this sum the wages of three men and three women and the cost of garden hose and supervision, etc., have to be paid, which will leave, and was not intended to leave, a substantial sum to set against the Exhibition expenses of the company.

So far as Gidea Park, Ltd., is concerned Mr. Webb's unfounded suggestions would have been passed over in silence, but the informed criticism of this kind, if uncontradicted, might result in injury to the builders and architects who have at great trouble co-operated to make the Exhibition the remarkable success which it is to-day.

DURHAM, CARTER, & DURHAM,
Solicitors to Gidea Park, Ltd.

SIR,—May I, as an Associate of the Institute, express my absolute agreement with the sentiments of your correspondent, Mr. Maurice Webb, M.A., as far as concerns the undesirability of the conditions of the Gidea Park Competition?

I must, however, protest against his expressions concerning the "anathy of the powers that be," not because I disagree with them, but because I feel that they should not come from a non-member.

If those architects of the younger generation who are not members of the Institute would come into line and help those of us who have on occasion tried, from within, to nip the slothfulness complained of, we might have some chance of success, but so long as a large number of our contemporaries are too apathetic themselves to take the trouble to become members, they have no right to complain of the misdoings of a body in which they have neither part nor lot.

Recent criticism, both of the Council and those who have disagreed with the Council, has far too frequently come from architects who have, by their own action or lack of action, deprived themselves of the right to complain, and from whom suggestions would be fittingly come in the form of letters to the Council of the Institute direct than by means of gites in the Press.

WILFRID TRAVERS.

SIR,—I am entirely in sympathy with the view of your correspondent in the last issue of your paper as to the desirability of some announcement from responsible quarters as to their attitude towards these competitions. It was not one of the competitors, successful or unsuccessful, and have no personal bias in the matter. But I feel very strongly that on the professional point of view competition on these lines ought to be discouraged. In the first place, their tendency must inevitably be in the direction of putting a premium on the cheapest form of building, while economy in planning is a thing to be encouraged, there is surely a point at which cheapness in execution ceases to be a virtue. With so many able architects competing, the comparative margin in the first instance is reduced to a minimum; as to the stress of such keen competition on the margin between profit and loss to the building owner or contractor must often be seriously near the border-line. Is it, then, a good thing for the profession at large, or for the competing architects, to be constantly confronted by clients with the published results of the efforts of architect and builder designed and executed under such special circumstances? I ask with shyness, having suffered more than once by such "confrontations."

My second point is merely an amplification of the main contention of your correspondent's letter: that the architect weakens his position of professional detachment when he enters the dusty arena of competitive commercial speculation or attempts to combine the business of a builder and the agent with his own. It is not improbable that this competition will be succeeded by others on the same lines. The large King's College estates at Northwood and Ruislip, for the laying-out of which an admirably-conducted competition is recently instituted on the usual lines, will soon be developed. In the event of the promoters deciding on a public competition, we may assume that their aim, in common with that of the organisers of the Gidea Park exhibition, will be to avail themselves of the best designs obtainable and to combine them with good building—not merely to offer their estate by exploiting young architects or trading on their difficulties in getting their names before the public. Surely the best way to attain their object would be to institute a competition for designs for a limited number of houses on those portions of the estate which it is desired to develop, and to erect those houses at their own expense! Under these conditions they would doubtless have the support of the profession as a whole.

GERVASE BAILEY.

SIR,—The letter from Mr. Maurice Webb published in your last issue raises many points of importance. But most immediately of interest is the suggestion that the competitors have been unduly exploited in the interests of the promoters of the competition. We have no means of knowing upon what speculation of profit the developing company have based their calculations. They may be moderate or not. But, as competitors, it is, I think, due to the company to have it said that the conditions and risks of the competition have been perfectly clear from the

outset, and competitors have entered it of their own free choice.

The charges for caretaking houses and gardens were obviously high, or not according to the thoroughness of the work done. But this, and the question of agency charges, are little to the point, as all competitors have been free to make their own arrangements in such matters, and probably most of them have done so independently.

In these circumstances it can, in our judgment, only have an effect prejudicial to all concerned to raise animus against the promoters of the competition. The venture hangs in the balance and will, we do not doubt, be successful. But to that end it is of the greatest importance that the houses built should be quickly occupied. If, eventually, some feel themselves entitled to consideration, it would surely be better, at any rate in the first instance, to state a case to the company rather than, by promoting recriminations in the public Press, to prejudice their own as well as the company's interests in this novel experiment. Certainly, if results in this competition are to affect it, it is, as yet, much too early to say what the attitude of our profession should be towards similar competitions in the future.

Meantime, as many as possible of the houses erected at Gidea Park should be offered at a reasonable rent, so that hesitating purchasers may have time to make up their minds and their natural reluctance to be the first to be tied to a new and unoccupied suburb be overcome. ERNEST WILLMOTT, F.R.I.B.A. H. S. EAST. A.R.I.B.A.

Manchester Library and Art Gallery.

SIR,—Although I did not send in a design for the above building, yet, having closely followed this important competition and the controversy consequent on same, I desire to make "three" practical suggestions as to how the Corporation can be extricated from the situation that has arisen, with dignity to themselves and with justice to the many competitors:—

1. Each competing architect should be invited to re-submit his scheme, and to sign a document (duly drawn up by our Town Clerk) stating that the drawings and report as returned are the actual ones previously submitted, without alterations of any kind.
2. Each of the authors of the ten schemes already premiated should be allowed the 100 guineas to defray the cost of their developed drawings as far as they have proceeded with them.
3. That our Corporation should appoint "three" adjudicators—all men of unquestioned experience in the planning of public buildings of this character and size—and definite instructions be given them that no scheme which infringes the conditions of competition, particularly as to the cost and area of land to be built on, shall be considered. These three "experts" should then make their deliberate choice of the most suitable design from the whole of the sketch drawings re-submitted (which are quite sufficient for the purpose). The result should be accepted as final, the whole of the schemes being publicly exhibited, and the carrying out of the work placed in the hands of the successful architect.

If this procedure be adopted, justice will be done to all who have spent so many weeks of time and labour in formulating their schemes, and what in the eyes of the Manchester public is equally important, the best and most appropriate design for the purpose undoubtedly will be secured.

I earnestly commend my suggestions to the careful consideration of those who have the welfare and good name of our old city entrusted in their hands.

ANOTHER MANCHESTER ARCHITECT.

King Edward VII. Memorial.

SIR,—Adverting to your observations on the above, which, it is announced, is to be placed at the unsuitable Piccadilly situation, may I venture to ask whether the circular sunk garden, with a small fountain in the centre, between Stanhope and Grosvenor Gates, at the Park-lane side of Hyde Park, has been considered as a suitable site? It would appear to present less objections than the one now chosen. W. A. A.

Hyde Park Corner.

SIR,—In face of the announcement which has been made to the effect that a combination is prepared to give a million sterling for the site of the St. George's Hospital in order to erect thereon a new hotel, may I renew a proposal I made more than two years ago?

At that time Colonel J. Charlton Humphreys had just acquired the freehold of the Knightsbridge estate, and now very shortly the houses in Trevor-square, and, indeed, the property on the whole estate will be taken down. Not only are new buildings to be erected, but new road planning is proposed.

Here is a quiet spot in close proximity to Hyde Park Corner, an ideal site to which the St. George's Hospital might be transferred from the extremely valuable, but, for the purposes of a hospital, most unsuitable site it now occupies.

Such a change would, at one stroke, advantage a great public charity and make available the unique site at Hyde Park Corner, in many ways the most conspicuous in the Metropolis, for an opera house or other building of a like character.

It can only be a question of time when the hospital will be removed, and the site offers such opportunities for a public building that it would be a thousand pities for it to be acquired for the purposes of an hotel.

MARK H. JUDGE.

Questions for Builders.

SIR,—“Experto Crede’s” letter deals adequately with “Builder’s Manager’s” points. In a word “Experto Crede” emphasises an economic truth: the builder must be outbalanced in these days of organisation unless he seriously works for adjusting conditions so that he is not outbalanced—that is, for organisation of available forces for the builders’ cause. For this some amount of sacrifice is a *sine qua non*, mostly of personal free-lance proclivities.

Many influences are in motion to give insecurity to firms of known probity, and, without analysing them, it is to be hoped that all concerned will act now on the hint “Experto Crede” has given. Surely no emphasis is needed! He speaks gospel. SURVEYOR.

Shrinkage of Joinery in Hot Weather.

SIR,—I have read with much interest Mr. W. F. Wallis’s letter in your last week’s issue of the *Builder*, and wish to bear out his remarks entirely. I am sure the majority of builders have at some time or other experienced similar cases. I myself had some houses built in the country four or five years ago, and the joinery, generally, stood very well, with the exception of a few slight unavoidable shrinkages here and there. This joinery work has since been “stopped” and repainted about twelve months ago, and it looked first-class, with no sign of any shrinkages whatsoever, until just recently during this very hot weather some of the joints have opened a little, not much, but enough to show there has been a further shrinkage even after all this time, which is unaccountable; therefore (which perhaps is rather departing from this question) it is really wonderful any joinery can stand at all under the extraordinary conditions under which it has very often to be placed in quickly-constructed buildings, not forgetting that, in the winter, in many instances, radiators are inadvisedly used directly after all the joinery is fixed to warm the buildings and before they are dry, which must also affect the joinery; in fact, my experience is that the drier the material of which the joinery is made, probably the more shrinkage when fixed in a wet building. JAMES F. PARKER.

INTERCOMMUNICATION COLUMN.

Rainwater “Tipper.”

SIR,—Can you or any of your readers kindly inform me where I can obtain an automatic “tipper,” which excludes the first portion of rainwater, rendered dirty by roof, and directs the remainder into the cistern?

I have heard of such an arrangement, but cannot find any reference to it in the ordinary catalogues. CLERK OF WORKS.

EDITORIAL SUMMARY.

Our leading article deals with Professional Unity, being suggested by the recent correspondence in our pages.

"St. Paul's Bridge" is the title of our second article (p. 92).

Notes (p. 92) include: "Stafford House, St. James's"; "Vistas"; "The Edward VII. Memorial"; "The Professions and Municipal Work"; "The Y.M.C.A. Building, Manchester"; "Educational Advance."

A few biographical notes on the new architect-knight, Sir R. S. Lorimer, are given on p. 93.

Our illustrated article on the work of Professor Reginald Blomfield, A.R.A., is given on p. 94, under the title "Contemporary Architects and Their Work."

"Three Exhibitions of Students' Work" is the title of an article on p. 97. The Exhibitions are: The Architectural Association; University College; and the London County Council Central School of Arts and Crafts.

A short account of the third summer visit of the Architectural Association, to Knole House, Sevenoaks, is given in this issue, p. 97.

The list of awards and prizes in connexion with the students' work of the Architectural Association is printed on p. 97.

The Royal Sanitary Institute Congress is being held this year in Belfast, and the proceedings were opened on Monday, upwards of 750 delegates and members attending (p. 98).

Correspondence (p. 100) includes: "Manchester Library and Art Gallery"; "King Edward VII. Memorial"; "Shrinkage of Joinery in Hot Weather"; "Hyde Park Corner"; "Gidea Park Exhibition."

The illustrated Monthly Engineering Review (p. 103) includes: "Vault Retaining Walls"; "Perfector Bar Beam Test"; and Notes.

The Building Trade Section (p. 108) includes: "Variations"; "Factory and Workshop; Cleaning and Painting"; "Leicester Employers and the Insurance Bill"; "Projected New Buildings in the Provinces"; "Applications under the 1894 Building Act," etc.

Law Reports (p. 111) include: "A Kensington Builder's Action"; "Action by Contractor against Building Owner"; "Injunction against Builders"; "Party Wall Dispute."

MEETINGS.

SATURDAY, JULY 29.
The Institution of Municipal Engineers.—Meeting at Edinburgh.

The Institution of Municipal and County Engineers.—Midland district and special meetings to be held at Hapsworth, near Birmingham.

Manchester Society of Architects.—Visit to Mollerley.

TUESDAY, AUGUST 1.
Manchester Society of Architects.—Visit to new bank premises, Piccadilly. Messrs. T. Worthington & Sons, architects. Windsor Bridge Timber Yard (Mr. J. H. Ashton), to see specimens and methods of cutting various kinds of timber.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. Edward White (Chairman) presiding.

LOANS.—A loan of 2,500*l.* is to be made to the Hampstead Borough Council for the purpose of obtaining a site for the extension of the Council offices.

The Stepney Borough Council is to receive a loan of 5,260*l.* for the erection of an electricity sub-station.

ST. PAUL'S BRIDGE.—The General Purposes Committee reported that since their last report, in which sanction had been given to the Chief Engineer of the Council to attend before the Committee dealing with the Bill for the construction of this bridge, they had also given permission for the Architect to the Council to attend in the same capacity.

Mr. J. D. Gilbert rose and complained that no report on this subject of the bridge had been made to the Council, and he

considered that the Council were being treated with contempt. He said that in the debate on this matter in the House of Commons Mr. Hayes Fisher had said that the Council was not prepared to increase its contribution of 350,000*l.* to the cost of the bridge if a more expensive scheme were adopted. They would, he had said, give that amount cheerfully, but were not prepared to double it. Mr. Gilbert said that these statements implied that a bargain had been made between the Council and the City Corporation, but, so far from having made a bargain, the Council had not even had a proper report on the matter.

In supporting Mr. Gilbert, Mr. A. J. Shepherd said that Mr. Fisher had no right to say that the Council would not give more than 350,000*l.* towards the cost of this scheme. He (Mr. Shepherd) knew that negotiations were at that very moment going on with the Corporation with reference to carrying tramlines over the new bridge, and unless the Council were presented with a report on the proceedings at the next meeting, he would feel that once again they were being hoodwinked.

Mr. Hayes Fisher, in replying, said that in his speech in the House of Commons he had been very careful to explain that he was not speaking with authority for the Council, though he believed he had the dominant party and most of the members on the other side behind him in all he said, and although the negotiations were not completed, there was an honourable bargain that the bridge should be made wide enough for the trams to come over, and that the Council would have the assistance of the Corporation when they wished to obtain power to construct tramways over the bridge. The Bill had still to run the gauntlet of the Committee of the House of Lords.

SCHOOLS.—It is proposed to erect a new school for 800 children in the neighbourhood of St. George's, Hanover-square, to replace the Horseferry-road school.

Additional store-room and an additional room for the superintendent is to be provided at the Anerley residential school, at an estimated cost of 374*l.*, and enlargements, providing additional accommodation for 384 children, are to be carried out at the Crompton-road school, Brixton, at a cost of about 200*l.*

Various improvements are to be carried out at the following schools during the summer holidays:—Cranbrook-road, Bethnal Green; Alton-street, Bow and Bromley; Haggerston-road, Haggerston; and Faunce street, Newington.

HORTON ASYLUM. In a report of the Asylums Committee it was stated that, as there was no provision for bathing at the nurses' infirmary at this asylum, it was desirable to erect a bathroom, and also to erect an additional entrance to the main wash-house from the east side.

Plans have been prepared by the Asylums Engineer and approved by the Lunacy Commissioners for the erection of a new asylum on the vacant site on the Horton Estate. The estimated cost of the building is 459,200*l.*

CINEMATOGRAPH THEATRE.—The Building Acts Committee stated that a cinematograph theatre is to be erected in Gaisford-street, Kentish Town.

FIRE-STATIONS.—Electric lighting is to be installed at the Shadwell and Stoke Newington fire-stations, and various alterations are to be carried out at the Kilburn, Bayswater, Euston, Eltham, Herne Hill, Northcote-road, Deptford, Lewisham, and Brompton fire-stations.

CAMBERWELL.—It is proposed to widen Red Post-hill between Sunray-avenue and North Dulwich Station. This improvement will have the effect of increasing the width of the road from 44 ft. to 50 ft. for a distance of about 1,150 ft.

ILLUSTRATIONS.

The Work of Professor Blomfield, A.R.A.

IN our plates this week we illustrate some of the work of Professor Reginald Blomfield, A.R.A., the illustrations being given in connexion with an article on another page on "Contemporary Architects and Their Work."

FIFTY YEARS AGO.

From the *Builder* of July 27, 1861.

Mr. Ferrey's "Recollections of Welby Pugin."

AUGUSTUS WELBY NORTHMORE PUGIN was born on March 1, 1812, in Store-street, Bedford-square, where his father then resided. He became a day boy at Christ's Hospital, Newgate-street, better known as the Blue Coat School, when the Rev. Dr. Trollope was head master of the school, and in all branches of education showed remarkable aptitude. After completing the ordinary course of education at Christ's Hospital he did not proceed to either of the Universities, but shortly afterwards entered his father's office. He had an almost intuitive talent for drawing, and as soon as he could handle a pencil commenced sketching.

Welby Pugin's first employment, independently of his father, seems to have been given to him by the celebrated goldsmiths, Messrs. Rundell & Bridge. One of their firm, while engaged in an examination of some ancient designs for plate in the Print Room of the British Museum, chanced to notice that Pugin was employed in copying the prints of Albert Durer and Israel Silvester. Struck by his skill in drawing, the goldsmith accosted him, and soon found that he possessed just the genius his firm was seeking. His complete knowledge of Mediaeval art fitted him admirably for designing plate in the old manner.

BOOK RECEIVED.

THE LONDON CITIZEN'S YEAR-BOOK, 1911-12. (London: Geo. Allen & Co., Ltd. 1s. net.)

UNIVERSITY COLLEGE SCHOOL OF ARCHITECTURE.

Mr. Leonard Stokes, the President of the Royal Institute of British Architects, performed the opening ceremony, on the 21st inst., at the Architectural Exhibition, which has been held in the Science Library at University College, Gower-street, during the present week. The Exhibition, a notice of which appears on another page, contains the drawings made during the present session by the day students at University College, who are taking a two or three years' certificate or degree course, and by students attending the evening course of design, the cost of which is defrayed by the Carpenters' Company. Mr. Stokes, in declaring the Exhibition open, congratulated Professor Simpson on the excellent standard of the work. It was proposed to institute a higher course of architectural training at the College. The establishment of such a course would meet a long-felt want. Many opportunities for learning were provided for the younger students, but they had not provided instruction in the higher branches, such as town planning, to the extent that they ought to do.—Dr. Gregory Foster, the Provost, in moving a vote of thanks to Mr. Stokes, said it was proposed to institute the new course, which would be one in advanced academic design, under the able guidance of Dr. Burnett next year. But they were in need of additional accommodation. A building originally intended for the bursar's house had been made to serve the purposes of the architectural students, but it was quite inadequate. The Senate of the University of London had come to the conclusion that the needs of London and the country generally in regard to architectural education would be better met by organising one strong school of architecture rather than by maintaining two relatively weak ones—one at University College and one at King's College. It was proposed, therefore, when the funds were forthcoming for a larger building, to transfer the Department of Architecture, which had hitherto been at King's College, to University College, and house it all in one building. That would mean that Professor Eley Smith and his staff at King's College would join Professor Simpson and his staff at University College. Mr. Percy Preston, Past Master of the Carpenters' Company, seconded the motion, which was adopted.

THE BUILDER, JULY 28, 1911.



THE BUILDER, JULY 28, 1911.



THE BUILDER, JULY 28, 1911.



Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

MOUNDSMERE MANOR, HANTS: THE GARDEN FRONT.—PROFESSOR REGINALD BLOMFIELD, A.R.A., ARCHITECT.



Photo by H. Dockree.

Springer & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

KENT HOUSE, KNIGHTSBRIDGE: THE ENTRANCE HALL.—PROFESSOR REGINALD BLUMFIELD, A.R.A., ARCHITECT.



Photo by T. Lewis.

"WYPHURST," CRANLEIGH: THE HALL.—PROFESSOR REGINALD BLONFIELD, A.R.A., ARCHITECT.

Spurgeon & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.



MOUNDSMERE MANOR, HANTS: THE DRAWING-ROOM.—PROFESSOR REGINALD BLOMFIELD, A.R.A., ARCHITECT.
Spence & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

MONTHLY REVIEW of ENGINEERING.

PERFECTOR BAR BEAM TESTS.

FROM the standpoint of architects it is much to be regretted that so few scientific tests have been conducted in this country on reinforced concrete beams by other structural members.

Great many practical tests have been made on completed structures, but, while it is true that the works in question are capable of supporting considerably more than the calculated superimposed loading, such tests afford no precise data for the guidance of designers.

two months from the date of moulding, the crushing strength of the concrete was taken at 2,165 lb. per square inch.

Steel Tests.

Specimens of steel cut from bars in the beams after testing were examined by Messrs. Kirkaldy & Son, the results being as follows:—

Tensile Strength.	Elastic Limit.	Elongation
Lb. per square inch.	Lb. per square inch.	in 8 in. Per cent.
63,566	42,200	24.9

Description of Test Beams.

Beams of Type A.—These were T-beams of the following average dimensions:—Total

effective depth, 12.12 in. The reinforcement consisted of two 1-in. diameter Perfector bars threaded with 1-in. by $\frac{1}{4}$ -in. stirrups, spaced 8 in. apart on each bar, and arranged so that one stirrup occurred every 4 in. from each end to near the middle of the beam. The compression flange was reinforced with $\frac{3}{8}$ -in. diameter rods, alternately straight and curved, spaced 5 in. apart centre to centre.

Beams of Type B.—These were rectangular beams of the following dimensions:—Total length, 11 ft.; clear span, 10 ft.; width, 7.24 in.; total depth, 14.09 in.; effective depth, 11.79 in. The tension reinforcement consisted of two $\frac{7}{8}$ -in. diameter Perfector bars, threaded with $\frac{3}{8}$ -in. by $\frac{1}{4}$ -in. stirrups, spaced 4 in. apart for the length of about 3 ft. 4 in. from each end, and two pairs of stirrups, spaced 8 in. apart on either side of the middle of the beam. The compression reinforcement consisted of one $\frac{7}{8}$ -in. diameter Perfector bar threaded with stirrups of the same dimensions as those provided for the tension bars, and similarly spaced.

Beams of Type C.—These were rectangular beams of the following dimensions:—Total length, 11 ft.; clear span, 10 ft.; width, 7.15 in.; total depth, 14.09 in.; effective depth, 12.24 in. The reinforcement consisted of two $\frac{3}{4}$ -in. diameter Perfector bars threaded with $\frac{3}{8}$ -in. by $\frac{1}{4}$ -in. stirrups, spaced 8 in. apart, and arranged so that one stirrup occurred every 4 in. from each end to near the middle of the beam.

NOTE.—The beams were in no way laboratory specimens, but were made as ordinary commercial beams. In order to conduce to this end, the materials and moulds were obtained from a reinforced concrete building in course of erection in the neighbourhood of Messrs. Kirkaldy & Son's laboratory.

Results of Tests.

The main object of the experiments, as stated in the report by Messrs. David Kirkaldy & Sons, was "to ascertain the resistance to deflection under a gradually increased bending stress," due to loading applied at two positions spaced each at one-third of the span, the deflections being measured at the middle.

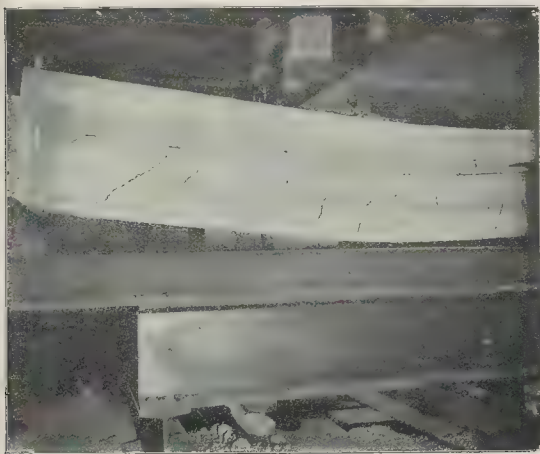


Fig. 1. The Perfector Beam (after destruction).

Therefore we have special pleasure in drawing attention to a recent series of experiments conducted by Messrs. David Kirkaldy & Son on a set of nine reinforced concrete beams made at their works in accordance with the designs of Perfector Buildings & Constructions, Ltd., of Westminster. A distinguishing feature of the beams was the employment of the Perfector Trussed main and web reinforcement. In this main bar has attached web members, the latter passing through slots cut in a projecting from it. The vertical stirrups can be spaced at distances of from 2 in. to 20 in., according to requirements, and can be of any length, depending to the depth of the beam. It is noted for this arrangement that an absolute test is provided against the slightest movement of the steel in the concrete, independent of the adhesion between the two materials.

Concrete Cube Tests.

In order to determine the crushing strength of the concrete used for the beams, 6-in. cubes were prepared by Messrs. Kirkaldy & Son of the concrete mixed by Perfector Buildings & Constructions, Ltd. The proportions of the concrete were 1 part Portland cement (80 lb. per cubic foot), 3 parts sand, and 4 parts ballast, $\frac{3}{4}$ -in. size. Four gallons of water were added to every 7 cubic ft. of this mixture. Three cubes were tested at one month, three at two months, and three at three months, the average results being 1,623 lb., 1,811 lb., and 2,469 lb. per square inch, respectively.

The beams were tested at the age of

length, 11 ft.; clear span, 10 ft. 6 in.; width of compression flange, 35.8 in.; width of web, 7.2 in.; thickness of compression flange, 4.08 in.; total depth, 14.25 in.;

DEFLECTION OF T BEAMS. TYPE A.

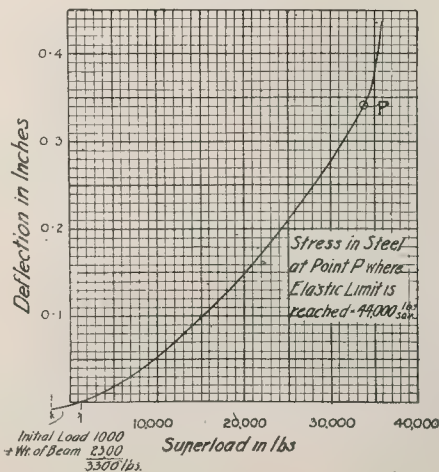


Fig. 2.

The following data are condensed from the report by Messrs. David Kirkaldy & Son:—

Average Deflection of Beams.			
Superload.	Type A.	Type B.	Type C.
Lb.	In.	In.	In.
2,000	0.065	0.064	0.065
4,000	0.13	0.119	0.121
6,000	0.23	0.242	0.246
8,000	0.38	0.371	0.378
10,000	0.54	0.510	0.515
12,000	0.70	0.638	0.643
14,000	0.88	0.757	0.778
16,000	1.07	0.875	0.895
18,000	1.26	0.991	1.015
20,000	1.46	1.107	1.135
22,000	1.72	1.223	1.255
24,000	1.97	1.339	1.375
26,000	2.23	1.455	1.495
28,000	2.48	1.571	1.615
30,000	2.75	1.687	1.735
32,000	3.07	1.803	1.855
34,000	3.40	1.919	1.975
36,000	3.87	2.035	2.095

The ultimate superload for the three beams of type A ranged from 37,800 lb. to 42,480 lb., the average being 40,273 lb. The first beam of this type failed partly by tension and partly by shear, and after the ultimate load had been reached it broke down completely by shearing at one end. The second beam gave somewhat better values than the first one tested; at the load of 24,000 lb. a very fine shear crack opened at each end, and at 28,000 lb. two more well-defined shear cracks developed, and the steel rods began to draw in. Finally, tension cracks at the middle of the beam extended beyond the neutral axis, and the beam failed completely, the concrete also failing in compression. Fig. 1 is from a photograph of this beam after destruction. Notwithstanding the shear cracks, the beam ultimately failed by flexure. The third beam of this type showed a still better result as to ultimate strength. At the load of 20,000 lb. two slight hair cracks appeared, at 30,000 lb. seven tension and four shear cracks opened, and at 36,000 lb. there was a shear crack at one haunch and the steel rods were seen to be drawing in.

The ultimate superload for the three beams of type B ranged from 26,010 lb. to 27,100 lb., the average being 26,718 lb. There was no sign of shear in any of these beams nor of slipping of the reinforcement. The first hair cracks appeared at the total load of 16,000 lb.

The ultimate superload for the three beams of type C ranged from 22,880 lb. to 24,160 lb., the average being 23,427 lb. The behaviour of these beams was very similar to that of type B series, except that in one case slight shear cracks opened at each end.

DEFLECTION OF BEAMS TYPE C

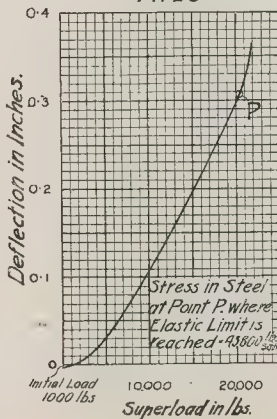


Fig. 4.

DEFLECTION OF BEAMS TYPE B.

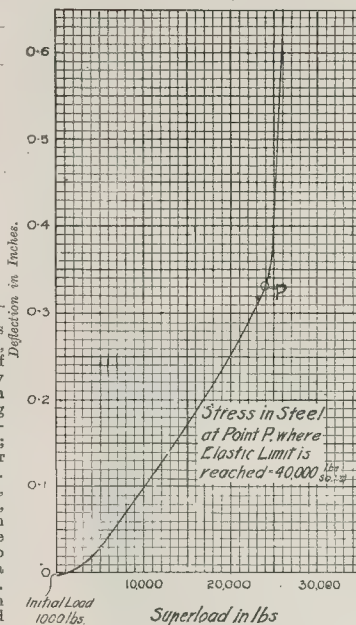


Fig. 3.

The following values, calculated by Perfector Buildings and Constructions, Ltd., will probably be interesting to our readers:—

Beam Type.	Stress in Steel at Ultimate Load.	Stress in Concrete at Ultimate Load.	Factor of Safety on Total Load.
A	31,708	1,229	3.24
B	44,467	2,320	4.30
C	50,392	2,378	4.40

Figs. 2 to 4 are diagrams illustrating the deflection of the three types of beam. It should be noted that after the stress at P has been passed the deflection increases very rapidly, and failure occurs with a comparatively small addition of loading. This illustrates the fact that the effective resistance of reinforced concrete construction, in the form of members acting as beams, depends upon the elastic limit of the steel so far as tension is concerned, and not upon the ultimate tensile strength of the metal as denoted by laboratory tests of small specimens.

The tests described in the present article were witnessed by various well-known engineers and architects, including Colonel Winn, R.E., Mr. A. Ross, M.Inst.C.E. (G.N.R.), Mr. E. R. Waight, M.Inst.C.E. (S.E. & C.R.), Mr. W. A. Cashman, M.Inst.C.E. (G.W.R.), Mr. A. W. Hall, A.R.I.B.A., and others.

THE DESIGN OF VAULT RETAINING WALLS IN REINFORCED CONCRETE.—II.

By A. HEDLEY QUICK, Assoc.M.Inst.C.E.

In the previous article (March 24, page 370) the design of the vertical portion of a wall of the type indicated in Fig. 1 was worked out in detail, and the next step is to find the width of the base necessary to satisfy the condition already mentioned, viz., a factor of safety of 2 against overturning.

For this purpose we shall decide upon "heel" projecting behind the wall 3 ft. The forces acting are as shown in Fig. 7, the shaded area representing the earth pressure diagram P' similar to that in Fig. 6, but in this case taken down to the underside of the base for which we must provisionally assume thickness, say, 15 ins.

E = the weight of the earth over the "heel" in pounds.
W = the weight of the wall neglecting the toe at the bottom in pounds.
B = the weight of the wall base in pounds.

The total earth pressure, $P' = 20(14)^2 \div 2 = 3,881$ lbs., see eq. 4, and acts at a distance up from the bottom of the wall base,
 $= 60 \times 11\frac{1}{2} + 61 \times 11\frac{1}{2} \div 2 = 4.40$ ft. see eq. 3.

Weight of the earth over the "heel" lbs. lbs.
..... $= 12 \times 2\frac{1}{2} \times 1 \times 120 = 3,600$
Weight of the wall, $= 10 \times 9\frac{1}{2} \times 1 = 118$
Weight of the wall base = $L \times 1\frac{1}{2} \times 1 = 150 = 157\frac{1}{2}$

Each of these forces acts at its centre of gravity found graphically as previously explained and as indicated by dotted lines in Fig. 7.

Taking moments about "A" and allowing for the factor of safety of 2, we get:
 $2(60 \times 11\frac{1}{2} + 61 \times 11\frac{1}{2}) = 3,420(L - 1\frac{1}{2}) + 118L \div 2$

$3,472 = 3,420L - 4,275 + 118L - 3108 + 59,75L$
 $83,75L + 4608L = 41615$
 $L^2 + 49.15L = 443.80$
 $L^2 + 49.15L + 24.375 = 443.89 + 24.375$

by taking the square root of both sides,
 $L + 24.375 = \pm 32.37$,
from which we get, neglecting the negative value,
 $L = 7.80$, or, say, 8 ft.

To find where the resultant "R" of the vertical forces and the earth pressure cut the base, and consequently the upward earth pressure diagram, and so enable us to design the base is our next step. We must take the moments about "A," say (Fig. 8), of all the vertical loads, and divide by the sum of these loads to get the distance "x" of their resultant from "A."

$x = \frac{3,420 \times 1\frac{1}{2} + 1188 \times 2\frac{1}{2} + 8 \times 1\frac{1}{2} \times 150 \times 4}{6108} = 2.20$ ft.

and the distance "y" from this line at which the resultant of all the forces will cut the base can either be obtained graphically by the parallelogram of forces, as indicated in Fig. 5, or by simple proportion, thus:

$\frac{6108}{3881} = \frac{4.40}{y}$
or $y = \frac{3881 \times 4.40}{6108} = 2.80$

and $2.80 + 2.20 = 5.00$ ft. from A, or $5.00 - 4.00 = 1.00$ ft. from the centre of the base.

We now have in Fig. 9 the base of the wall with the inclined resultant "R" of all the forces acting at "A." This inclined force Q may be replaced by a vertical force Q' = to the sum of all the vertical forces and a horizontal force S = to the total earth pressure.

The vertical force Q, acting at a point "m" feet from the centre of the base, may, by well-known theorem in mechanics, be shifted to any other point by introducing a couple = $Q \times d$ a lever arm equal to the distance through which the force has been moved.

This will not alter the total effect of the force but shifting the vertical force Q to the centre will now cause direct and uniform pressure over the entire base and the couple $Q \times m$ will tend to cause tension over the left and compression over the right half of the base, the total upward earth reaction being the sum of these forces and will equal

$\frac{Q}{A} \pm \frac{Q \times m}{I} \times y$ eq. 1

where
y = distance in feet of the edge of the base from the centre of the same.

A = area of the base in square feet taking 1 ft. width.

I = the Moment of Inertia in foot units of the base about its centre of gravity.

In our case we have

$\frac{6108}{8} \pm \frac{1537}{512} \times 1 \times 4 \times 12$

lbs. lbs.

$= 764 \pm 573$ per square foot.

$= 1337$ lbs. per square foot maximum compression at edge "D."

and 191 lbs. per square foot maximum compression at edge "A."

as shown shaded in Fig. 10.

By the same graphical construction previously explained, we can find as indicated

centres of gravity of those portions of the wall and earth reaction, causing bending on the cantilever AB and CD. The B.M. at C is that due to the upward earth reaction acting CD \times the distance of its centre of gravity from C—the weight of the portion of the base \times the distance of its centre of gravity from

ft. lbs.
B.M. at C = $\frac{632 + 1337}{2} \times 4\frac{1}{2} \times 2.75 = 13311$
lbs.
 $- 4\frac{1}{2} \times 14 \times 1 \times 150 \times 2\frac{1}{2} = 2266$
11045

causes tension on the lower and compression on the upper side, and from eq. 7 find $d = \sqrt{\frac{11045}{95}} = 11$ ins. bare, and steel required per foot = $12 \times 11 \times$

The B.M. at "B" on the cantilever AB is that due to the downward weight of the earth over the "heel" \times the distance of its centre of gravity from B + the weight of the "heel" \times AB \times the distance of its centre of gravity from B—the upward earth reaction acting over the same portion \times the distance of its centre of gravity from "B."

ft. lbs.
or B.M. at B = $2 \times 12 \times 120 \times 1 = 2880$
 $+ 2 \times 14 \times 150 \times 1 = 375$
3255
 $- \frac{191 + 478}{2} \times 2 \times .85 = 569$
2686

This causes tension on the upper and compression on the lower side, and as the depth "d" \times "d" must for practical reasons be equal to the front portion CD or 11 ins., we shall find

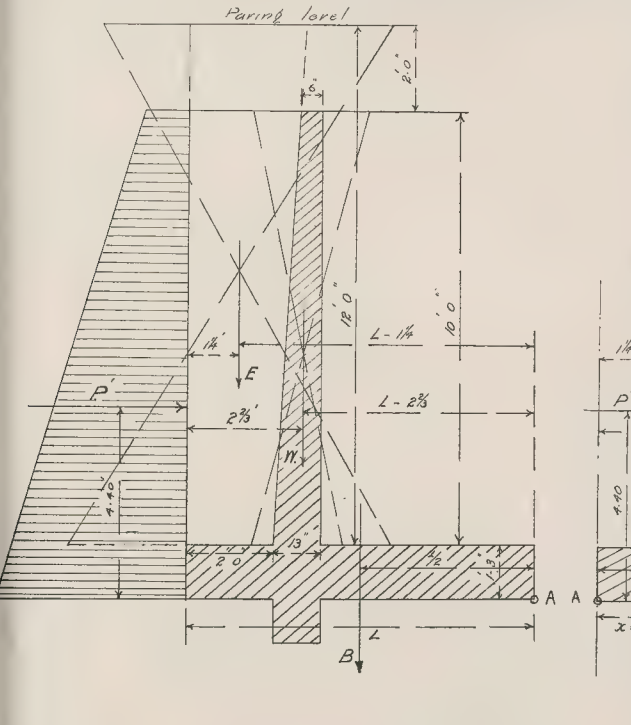


Fig. 7

775 = 891 sq. ins., or say $\frac{1}{2}$ -in. rods at 4 in. centres and the depth over all = 13 ins., say, we could not lay much less than 2 ins. of concrete before placing the rods in position, in many sites it might be necessary to first

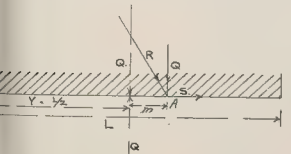


Fig. 9.

a bed of concrete 4 ins. to 6 ins. in thickness. About 2 ft. from the end "D" probably an alternate rod might be stopped; this would, however, be verified by a similar calculation to the above, the B.M. being found at the point in question.

the percentage of steel required for this depth will equal

eq. 9 = $\frac{M \times .000071}{d^2} = \frac{2686 \times .000071}{121} = .00158$

and the area of steel required per foot = $12 \times 11 \times .00158 = .209$ sq. ins., or, say, $\frac{1}{2}$ -in. rods at 6 in. centres.

We must now try the bottom of the vertical wall for horizontal shear, the total shear at this point will be equal to the total earth pressure down to this point, and equals 3,200 lbs.; the shear stress here will

$\frac{3200}{12 \times 13} = 20.5$ lbs. per square inch,

which is quite safe.

We will now try the base for vertical shear at the point C; the total shear at this point will be equal to the upward earth reaction less the weight of the portion CD of the base; this equals $4840 - 799 = 4041$ lbs., the shear stress here will

$\frac{4041}{12 \times 13} = 26$ lbs. per square inch,

which is also quite safe.

The total force tending to cause the wall to

slide forward on its base is the total earth pressure down to the underside of the base, which equals 3,881 lbs. The total weight of the wall and the earth filling over the "heel" = 6,108 lbs., and as the co-efficient of friction between concrete and most clayey or sandy soils may be taken as about .33, the wall by reason

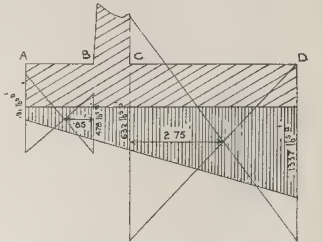


Fig. 10.

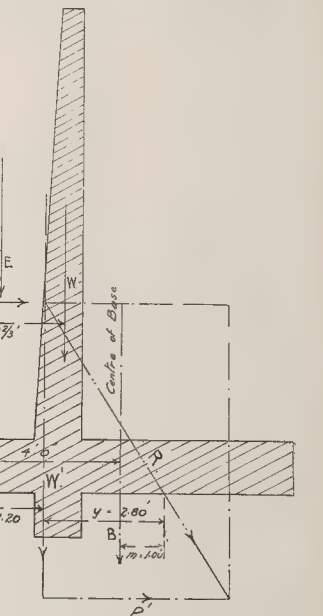


Fig. 8

of its dead weight alone would just be on the point of sliding with a thrust of only about

$\frac{6108}{3} = 2036$ lbs.,

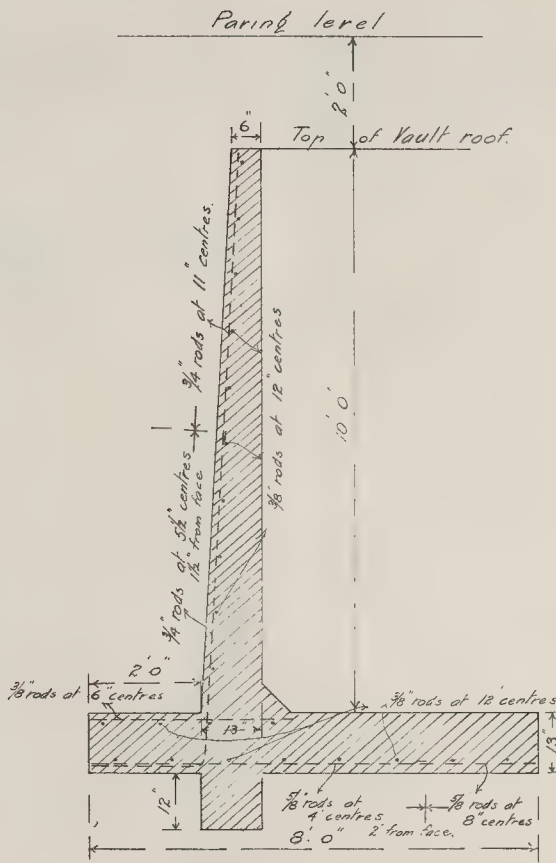
and this allows for no factor of safety. Now, as the actual thrust to be resisted is about 3,881 lbs., it will be advisable to provide a toe as shown, although in probably all cases a raft will be constructed over the site against which the wall base will abut.

When the roof is added the weight thus brought on to the wall will slightly increase the compressive stress on the concrete, but it is so small in amount that it may be neglected.

The wall as finally designed will be as indicated in Fig. 11.

ENGINEERING NOTES.

For the reconstruction of Baker-street Station at Upper Baker-street and Improvements, Marylebone-road it has been found necessary to divert the two sewers beneath Park-road for a length of nearly 460 ft. The old sewer of 6 ft. 6 in. by 4 ft. 4 in. is replaced with one 454 ft. long



Vault Retaining Wall. Fig. 11.

behind the new railway wall, and has above it a fresh pipe to replace the former 21-in. water main. The 3 ft. 9 in. by 2 ft. 6 in. sewer on the other side of the new lines has been diverted for a distance of 270 ft., and another one is built in its stead. The two concrete walls of the widened tunnel, about 550 ft. long, are from 6 ft. to 10 ft. thick, with foundations from 8 ft. to 18 ft. thick. The superimposed girders will, it is anticipated, be utilised to carry suites of residential flats as well as the tunnel and roadway roofing, and those over the east station will be similarly adapted to sustain the new headquarters of the railway staff. Part of the space hitherto occupied by the booking-office at the corner of York-place will be thrown into the proposed widening at the crossing with Marylebone-road. Mr. W. Willox, engineer to the Metropolitan Railway Company, made the plans for the works now in progress.

Central Heating Stations for Cities.

In the United States and Canada there are already about 600 central stations for the distribution of steam and hot water to the residents of some 300 towns, ranging in population from more than 10,000 inhabitants to less than 5,000 inhabitants, the first establishment of the kind dating from the year 1876.

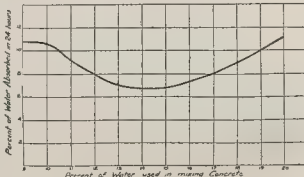
A recent memoir, contributed by M. A. Beaurienne to the Société des Ingénieurs Civils de France, sets forth the methods followed and results obtained in systems of the kind, and discusses the point whether there exist any technical reasons or other considerations to explain why this branch of industry is practically unknown in Europe, while it has so largely developed on the other side of the Atlantic. After expounding the principles adopted in the

distribution of heat in cities and describing typical installations so applied, the author points out the advantages of central heating services over private installations, and having formulated a general theory of the public distribution of heat, particularly in the form of steam, he applies the results of his theory to a quarter of Paris and to the district served by the installation at Lockport, U.S.A.

The author comes to the conclusion that there are good reasons for following the example set in America, not in the direction of simple imitation, but by the evolution and application of a more scientific theory, taking due account of past experience in the perfection of a system which possesses various claims to attention.

Effect of Water Percentage on Porosity of Concrete.

ONE factor of importance in the production of concrete capable of withstanding penetration by water is the proportion of water mixed with the dry constituents. It is now generally recognised that other things being equal a wet mixture results in concrete of greater impermeability than a dry mixture,

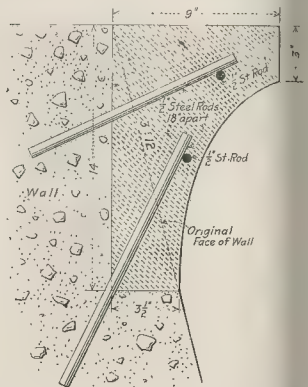


Effect of Water on Porosity of Concrete.

unless the latter is very closely compacted by ramming or heavy pressure. Some tests by Messrs. Westinghouse, Church, Kerr, & Co. give definite results which appear to indicate the most suitable percentages of water for use in mixing concrete intended to be impermeable. The curve reproduced on this page shows the percentage of water absorbed by concrete blocks during twenty-four hours' immersion in water. From this diagram it will be seen that the effect of too much water is as undesirable as that of too little, the happy medium being about 14 or 15 per cent. Although an isolated series of tests can never be regarded as conclusive, the results obtained by the firm mentioned are of distinct interest, and there is no reason for doubting their substantial accuracy.

Reinforced Concrete Coping for a Sea-Wall.

THE accompanying illustration shows a simple adaptation of reinforced concrete for the improvement of a sea-wall at the United States naval station of Key West. As originally built, the wall had a plane face with a batter of 1 in 4, its top being little more than 4 ft. above high-water level. In rough weather considerable damage was usually done by water rising over the wall and washing away the earth behind. In order to throw back the



Reinforced Concrete Coping for a Sea-Wall.

(From "Engineering News.")

waves a concave coping was added to the front of the wall, as shown, the concrete being keyed into the old work and held by 1/2-in. diameter diagonal bars spaced 18 in. apart, in addition to two longitudinal 1/2-in. diameter bars. The work cost about 2s. 1d. per lineal foot, and was executed under the direction of Mr. De Witt Webb, civil engineer, United States Navy.

The German Tests of Reinforced Concrete Columns.

REFERRING to our Note of June 9 last (p. 722), Messrs. Wayss & Freytag, the firm to whom was entrusted the construction of the test columns having spiral transverse reinforcement, point out that varying atmospheric conditions and care in manufacture were more important factors in the first series of test results than the different forms of transverse reinforcement, and they also emphasise the point that in all cases fracture occurred at those ends of the vertically moulded columns which were last rammed without regard to the position of such ends in the testing machine. Owing to the inconclusive nature of the first tests a further series was undertaken, as stated in our Note. With regard to the second series, Messrs. Wayss & Freytag say that these columns with spiral reinforcement showed the highest breaking loads, but that as in this series fracture again occurred at that end which was last rammed, and as manufacture by contractors' workmen cannot be considered as sufficiently careful or regular, it follows that precise conclusions as to the behaviour of the various methods of transverse reinforcement cannot be drawn from these tests.

Both series of tests are to be regarded as preliminary, and a further set will be conducted on columns having strengthened heads, so that

influence of the transverse reinforcement will be clearly demonstrated. In a future issue we hope to give further and final reports on the tests.

Driving Piles In cases where soft strata are overlaid by a thin crust of hard material, piles can be readily driven without injury to the stratum of hard material by first breaking a hole through the latter. This expedient was successfully adopted on the Lehigh Valley Railway in a place where piles 55 ft. long had to be driven. The hard material was penetrated by means of a strong steel pipe provided with a steel point, and the piles, being driven into holes so made, were driven without difficulty into the softer material below. As timber piles are often shattered by driving the method is one deserving attention.

The Middleborough Bridge. DESTINED to take the place of the present steam ferries between the town of Middleborough and Port Clarence, on the opposite side of the River Es, the bridge now being constructed by Sir William Arrol & Co., Ltd., under the superintendence of Mr. S. E. Burgess, M.Inst.C.E., the rough Engineer, is one of the largest transfer bridges hitherto projected, having a span of 570 ft. long at the height of 160 ft. above high water. The span is carried by steel towers 250 ft. high above low-water level, supported by caisson foundations, one of which extends 90 ft. below the river bed. The spans are provided on the under side of the bridge with the operation of a carriage propelled by electricity, and from which will be suspended a travelling-car at the same level as the roadways on either side. The car will be capable of transporting trams and other vehicles, as well as 600 foot passengers. Though this and one or two kindred structures have been built in Great Britain by British engineers, it should not be forgotten that the development of the system on modern lines is entirely due to a French engineer, François Michelin, of Chateaufort-sur-Loire.

Permanent Expansion of Cast-Iron by Repeated Heatings. THE "Growth of Cast-Irons under Repeated Heatings" is the title of an instructive paper contributed by Professor Carpenter, of Victoria University, to the Iron and Steel Institute. As shown by more than one building, the subject is of direct interest to architects, who are naturally concerned in finding a variety of iron not liable to the risk of serious permanent expansion in case of fire. The first part of the paper discusses the influence of phosphorus, sulphur, and manganese, and other substances, and contains calculations of the approximate growth that may be expected in cast-irons whose chemical composition is known. The second part is of a scientific interest, and the third part is an account of experiments undertaken with the object of finding a commercial cast-iron of negligible growth after repeated heatings. On the practical standpoint this is the most important part of the paper. Briefly stated, the following are the main conclusions to be drawn:—Phosphorus, sulphur, and manganese tend to diminish growth; silicon tends to increase growth to the extent of 15 per cent. for 1 per cent. of that element, 27 per cent. for 3 per cent., 34 per cent. for 3 per cent., and similarly diminishing proportions for other percentages of silicon. By adopting suitable proportions of the regular constituents cast-iron can be produced showing no signs of growth in 150 heats.

Municipal Building, New York. ONE difficulty connected with the construction of huge steel frame buildings arises out of the necessity for transporting large structural members through the crowded streets. In the case of the new Municipal Building, New York, many members of exceptional dimensions have to be transported, among them being twelve girders, 47 ft. 6 in. long by 10 ft. deep, and

weighing about 50 tons each. Every one of these girders has had to be conveyed from the Battery to the building site at the approach to Brooklyn Bridge on a special lorry drawn by some thirty-five horses, a team that could not be manipulated very well through tortuous streets. As the New York police regulations do not permit the streets to be used at ordinary times by teams of more than about a dozen horses, the transport of these heavy girders was performed on two Sundays. The members in question are destined to be erected at fourth-story level above the arch permitting Chalmers-street to be carried through the middle of the great building.

New York Rapid Transit Subway Extension. LAST month a joint Committee of the Public Service Commission and the Board of Estimate recommended extensions of the Rapid Transit Subway at the total estimated cost of more than 51,000,000. It is proposed that contracts should be made with the Brooklyn Rapid Transit Company and the Interborough Company, the former being awarded all the lines crossing the East River bridges; the Fourth-avenue subway, Brooklyn; lines from Liberty-street, along Broadway and Seventh-avenue to Fifty-Ninth-street, and over the Queensborough Bridge, and a line from Union-square, under the East River to the eastern part of Brooklyn. The Interborough Company are offered a line from Forty-Second-street to the Battery; another along Lexington-avenue, with extensions in the Bronx and various extensions in Brooklyn and Queens. The Committee recommend that the share of the municipality should be about 26,000,000, the remainder to be shared proportionately by the two railway companies. The heavy expenditure involved in this project shows the exceptional need of New York for increased traffic facilities, and the readiness of the city authorities to deal with the question in a public-spirited manner.

Steel Water Tower Cased in Concrete. AS AN alternative to the payment of 100l. per annum for insuring their own property and adjacent buildings, the owners of a steel water tower in New Jersey decided to encase the tower in concrete and to rely upon the protection so afforded. The tower contains 100,000 gallons of water, the total height being 174 ft. above the ground, and the cost of sheathing with concrete amounted to 800l. The interest on this sum at 6 per cent. is 48l. per annum, a charge giving reasonable assurance of absolute protection at less than half the premium for covering damages for which the owners might be liable in case the tower collapsed as the result of fire. Moreover, the saving on the insurance premium will pay for the concrete work in about fifteen years, and thus extinguish any further charge. The use of concrete here denoted is one that may often be adopted with advantage and economy.

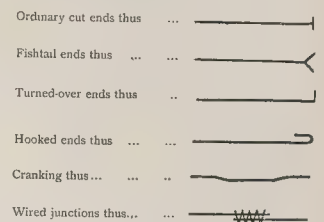
Standardised Drawings for Reinforced Concrete. In the Report of the Concrete Institute dealing with the standardisation of drawings for reinforced concrete work it is suggested that, as the material in question is most extensively used for buildings, drawings should conform closely to general architectural practice. This is a recommendation with which we are in entire agreement.

With regard to scales, the following are proposed:—

- General Drawings.*
 $\frac{1}{8}$ in. Schemes in outline (large structures).
 $\frac{1}{4}$ in. Schemes in outline (average practice).
Detail Drawings.
 $\frac{1}{8}$ in. Framing plans and slab reinforcement.
 $\frac{1}{4}$ in. Elevation of beams and general details (large members).
 $\frac{1}{8}$ in. Elevation of beams and general details (average practice).
 $\frac{1}{4}$ in. Sections of beams, etc.
 $\frac{3}{4}$ in. Large details of intricate work.
For ordinary work three scales— $\frac{1}{8}$ in., $\frac{1}{4}$ in., and $\frac{3}{4}$ in.—are considered sufficiently elastic. All dimensions should be figured, and for general purposes it is proposed that drawings

should measure 40 in. by 27 in., or 20 in. by 27 in. within the border line.

The indication of reinforcing bars in general can be effected by thick solid lines for main bars, and medium solid lines for secondary bars, the following conventional signs being recommended for detail drawings.



Reinforced Concrete Symbols.

The Report also contains a list of proposed abbreviations for denoting various forms of bars, sheet meshes, and other particulars. Suggestions for lettering and colouring drawings are also given.

The general adoption of the recommendations contained in this Report, possibly with some modifications, should do much to save unnecessary work on the part of specialist firms and contractors, and would be a boon to architects and municipal engineers who may have to deal with drawings submitted by competitors for the explanation of tenders.

Corrosion of Harbour Board of Wellington, New Zealand. A REPORT by the engineer to the extensive corrosion has taken place in the Muntz metal sheathing and bolts applied to nearly all the timber wharves of the port. The metal used within the last ten or twelve years appears to be less satisfactory than that applied several years before. For instance, in the case of a wharf completed in 1908, the sheathing and bolts are deteriorating very rapidly. When examined at a recent date some bolts were so much corroded at the screwed end that the nuts were quite loose. Efforts are being made to find an alloy of moderate price capable of withstanding corrosion. The most effective remedy would be to replace existing wharves gradually by reinforced concrete structures, a policy which has been adopted in many British, American, and other ports.

Coast Erosion. The third and final report of the Royal Commission on Coast Erosion dispels any hope that the protection of our coast line will be undertaken by the State. The Commissioners find that, while serious loss is occurring in many places, and particularly on the east coasts of England and Ireland, the erosion does not affect the nation at large, and does not call for any intervention by the State beyond that resulting from extended administrative assistance. There is no evidence of any changes in the relative levels of sea and land. Hence the problem for solution is simply the provision of means for protecting coast lines threatened against the effects of tide, wind, and frost. The technical evidence presented in Part III. of the report will prove invaluable to engineers in the design of protective works. A proposal of useful character is that all foreshores remaining the property of the Crown shall be administered by the Board of Trade, and that additional powers shall be conferred on the same board enabling them to control the removal of beach material and the construction of protection works, to supervise and assist existing authorities concerned in coast protection, and to create new authorities where necessary. If the recommendations of the Commission are adopted, the Board of Trade will have the assistance of engineering experts, and will make arrangements for watching the coasts and preventing any acts or works contrary to the public interest.



THE BUILDING TRADE.

VARIATIONS.

THE term "variations" has a different significance according to the point of view from which they are looked at. From the one point "additions" are the characteristic features, and from the other, "omissions." The foreman generally does not beat about the bush, but designates them boldly "extras"; but in this article we shall deal with the term literally, as there are few contracts where items to which both terms apply do not occur.

If all contracts were carried out strictly to the letter, as far as procedure is concerned, and given a good bill of quantities consistently priced, this should not be a troublesome matter, but this premises a good set of drawings and full details prepared at the outset, a full specification, every order for a variation given in writing—how often is this precaution omitted and with what unfortunate results—day-sheets, verified by the clerk of works, and sent in week by week, and a careful record of all work covered up, agreed to as correct by the contractor or his foreman and the architect or the clerk of works, or else measured by the surveyor during the progress of the work. Such would be the ideal condition of things; but we are afraid it is not the lot of many surveyors to find such an ideal condition when proceeding on to the works to take up the measurement of variations.

Looked at from the surveyor's point of view, it is presumed that he prepared the original bill of quantities, so that there will be nothing to find fault with on this head. We must—if only as a matter of courtesy—reckon that the drawings and specification are all that can be desired, so that eliminates another element of trouble. We then come to the question of pricing—the question of ascertaining what are variations and the measurement of same we will leave till later. What a fruitful source of difficulty the inconsistency of pricing that occurs in the so many bills of quantities occasions. The "slips" of pricing "feet" for "yards," "yards" for "squares," and *vice versa*, one is continually running across, and there are great possibilities in this direction. Then those misreadings—to name a few of which have come under our notice. "Half brick walls in cement," at $\frac{1}{2}$ d. per foot on the supposition that the item is an extra over the bulk brickwork for building 4½-in. walls, although nothing was said to this effect. Another striking instance was an item of stone facing which was priced as "extra over brickwork," although the note "labour and materials" was put at the end and also underlined. This worked out on the variations as an extra cost. The builder, however, content with his good fortune in having saved some of his loss, did not press for the extra, although under the contract we do not think there is any doubt that he could have done. Still another. A client decided to have corrugated iron roofs to some large sheds in lieu of slating and boarding, and, being in fear of prices being "faked" as he termed it, refused to have the matter gone into before deciding (the priced quantities being sealed). He found at the end that he paid more for the corrugated iron than he would have done for the slating and boarding owing to the high price of the former and the low prices for the latter in the contract. These examples could be multiplied indefinitely, but those we have given are sufficient for our purpose. The question arises as to how far it is permissible to deal with the prices after the tender is accepted, but before the contract is signed. It is obviously unfair to other competitors to allow the contractor

whose tender is accepted to make any addition to his price. On the other hand a contractor may reasonably object to reduce his price. The fairest method, therefore, is to examine the prices beforehand, rectify obvious errors, and, if they make any appreciable difference to the total, to treat this difference as a percentage on the prices (as an addition or omission, as the case may be) in the final settlement of the accounts. This method eliminates one element—that of inconsistent pricing—that is often a cause of trouble. Where this procedure has not been followed our experience has been that in a friendly settlement of accounts neither side holds to the strict letter of the contract, but brings into play a wise discretion. On the one hand the client does not insist upon the contractor executing extra work at what may be a ruinous price, and on the other the contractor does not ask to be paid an obviously excessive price for extra work, notwithstanding the fact that he could claim such under the contract. Of course, this could not apply generally, but only in such cases as we have given examples of. It may be considered that this is establishing a dangerous precedent, but we have found in practice that, so far from causing complication, the result is quite the reverse, and it is obvious that this course is only possible where there is mutual confidence such as ought to obtain—and we are happy to believe does obtain with any extended business relationship. In those cases where either party approaches the business with the object of scoring off the other, the only course open is to stand strictly by the letter of the contract and each fight his own battle. It then becomes a case of "diamond cut diamond."

We have dealt somewhat fully with the question of inconsistent pricing, perhaps more fully than some may consider the importance of the question warrants, but we think that most contractors and surveyors have frequently been faced with the difficulty of arriving at a fair result when these discrepancies occur. We have, therefore, given the results of our experience extending over many years and under varying conditions, and we venture to hope with satisfactory results to all parties, to be considered for what they are worth.

The question of ascertaining what are variations now claims our notice. If the architect is careful to have every variation ordered in writing, the procedure is simple, and contractors would be well advised to ask for this, or, at any rate, to confirm in writing such orders if given verbally. Much trouble will be saved by this precaution, as such confirmation, in the absence of any protest from the architect, must necessarily be strong evidence for the surveyor to act upon. Some architects hand their surveyors all the correspondence relating to the work to be examined and notes made, so far as the letters relate to the question of variations, and we have found this works well. Where the architect keeps an order book for variations, the orders, of course, are unmistakable evidence, and unless he receives special instructions from the architect no surveyor would deal with any claim for a variation raised by a contractor, unless he could produce such an order. We would therefore strongly urge both parties to a contract to see that every order, whether for extras or omissions, should be in writing in some form or the other.

We think it is generally agreed that the bills of quantities should form part of the contract in fairness to all parties. In practice we generally find this is accepted (although there are notable exceptions in the case of some public bodies), whether it is so

stated or not. A good deal of discretion should, however, be exercised by both parties as to how far this should be carried, and it is, of course, obvious that it may cut both ways. The contractor who adopts a policy of "grab" by raising every little question may find himself met with items which far outweigh any claim he may make under this head. On the other hand the surveyor who either from incapacity or carelessness leaves many openings for such claims deserves all the trouble that falls upon his head, and the architect who finds himself involved in difficulties (because, after all, the architect is often the one to suffer) would do well to select another surveyor.

When measuring variations it is most essential that the system adopted should be identical with that of the original dimensions. The pricing will then be found quite a simple matter. It is a good system to keep each item separate regardless of the form of the final account, as it is easy to afterwards group items together in the final summary of accounts.

The pricing, to those who are conversant with the subject, should not be the debatable matter that it often is, but "trying it on" on either side is reprehensible—waiting to see what the other side will say instead of naming a fair price and sticking to it. In the case of a well-priced bill of quantities there should be very few debatable points on this head, as it ought to be easy to make up new prices from those of the contract. We say *should be*, but we are afraid that there are more bones of contention over the question of pricing, owing to inconsistency and want of method, than over any other portion of the work.

The question of day works has been, and probably always will be, a vexed one. These should be kept carefully and signed for by the clerk of works as correct, but it should be distinctly understood that in no case should the signature of the clerk of works be construed into either an order or even an undertaking that the item should be treated as day work, but simply as a record of the correct time and materials, leaving it to the discretion of the surveyor as to whether the item should be measured or accepted as day work.

Theoretically in many cases there should be no discrepancy between the price for work on a day-work basis and that on a measured basis, but we are afraid this state of things is the exception rather than the rule. It has always been our experience that where this theory has been accepted by the contractor, there have been fewer grumblings at losses than where there has been the attempt to get day work adopted at all costs, and we are speaking of contractors', not individual works. Where the contractors have accepted this theory we have found a perfect system of business in every department—good bookkeeping, good supervision, good feeling, consistent pricing even in competitive works, and evident prosperity. We emphasise these points so as to remove the possibility of a charge of slackness or generosity on the part of such contractors.

Although in most cities there is a general schedule of day-work prices arranged between the local institute of architects and the institute of builders, we do not think these should obtain in those cases where the price for materials without labour in the day-work schedule are inconsistent with the prices for labour and materials in the bills of quantities; although some contractors contend that these schedules override the bills of quantities. It is, however, surprisingly rare to find it absolutely impossible to measure work if the surveyor is really competent. That, at least, has been our experience.

have dealt with the subject, taking as is an ordinary competition on bills of prices, that being the more common mode in works of any size. In those cases where the contractor is paid a percentage on his cost there can be no question, should be clear as to whether the cost include establishment charges or not, as on this point often leads to trouble. We have emphasised the question of pricing as so often on this question that the element turns. If trouble arises from businesslike action on the part of either architect or contractor, or the before-mentioned policy of "grab," then we are not there is no system to satisfactorily the case, but we would again impress on contractors the necessity of careful and good bookkeeping and supervision. The latter would stop many wastages and packages that so often occur, and which sometimes turn a profit into a loss, while the enables the contractor to obtain all he is entitled to, and such being the case the should show a profit.

Much has lately been said upon the part of specialists, and the supply of articles, that we do not propose to with this question beyond suggesting a look-out as to the charges for carriage packages, and also the credit of returned packages, which is often a much larger than at first appears.

FACTORY AND WORKSHOP: SPECIAL EXCEPTION—LIME-WASHING, Etc.

The following order of the Secretary of State, dated July 1, 1911, has been issued:—
In pursuance of sect. 1 (4) of the Factory and Workshop Act, 1901, I hereby grant to factories and parts of factories which have been painted with at least two coats of a washable water paint as defined below, and repainted with at least one coat of such paint once in every three years, a special exception that the provisions in subsection (3) of said section with respect to limewash shall not apply thereto.

That the paint shall be washed at least in every fourteen months.

That the name of the paint used and the address of the makers of the paint, together with a certificate, in the form shown in the schedule hereto, from the makers of the paint, and the date of the original painting of each washing and repainting, shall be entered in or attached to the General Certificate.

That nothing in this order shall be taken to oblige the obligation of keeping the factory cleanly state, as prescribed by subsection of the said section.

That if it appear to an inspector that part of a factory to which the exception is not in a cleanly state, he may, by written notice, require the occupier to lime-wash, or paint the same; and in the case of the occupier failing to comply with requisition within two months from the date of the notice, the special exception shall not apply to such part of a factory. This order a washable water paint means washable paint which, when finished for contains:—

- i.) At least half its weight of solid pigment containing not less than twenty-five parts by weight of zinc sulphide as zinc white (lithopone) in each hundred parts by weight of solid pigment; and
- ii.) At least ten parts by weight of oil and varnish to each hundred parts by weight of solid pigment.

LEICESTER BUILDING TRADE EMPLOYERS AND THE INSURANCE BILL.

The following letter has been sent to local members of Parliament with reference to the Local Insurance Bill on behalf of the Leicester and District Building Trades Employers' Association:—
Sir,—This Bill was considered by the Local Council of this association at its meeting on the 19th inst., and we strongly protest

against the apparent hurried passing of the Bill before it has been properly considered and amended so as to be fair to all parties. We desire to lay before you the following general objections which we have to the Bill:—

1. Much disappointment is expressed that in preparing the Bill the Government have not proposed some amelioration of the Workmen's Compensation Act, which becomes every year more burdensome, and which is now costing from four to six times as much as it did at first, with a further large increase in prospect, instead of which such references as are made to that Act are considered to be in the direction of increasing the cost of administering it.

2. It is considered that the selection of a limited number of trades to be experimented upon in connexion with unemployment insurance is unfair, and that the building trade, which has now suffered a long period of depression, is ill-fitted to bear the further set-back which will follow the increased cost of production involved in this further burden. That Part II. of the Bill is admittedly in complete, and amounts to legislation by reference of a most objectionable type. That, therefore, this part of the Bill ought to be held over for the present.

3. That it is a matter of deep regret that the views of associations of employers were not ascertained during the preparation of the measure, seeing they are so deeply interested. That other classes concerned have enjoyed an advantage in this respect, which has been denied to us, and that it is unfair, therefore, to push the measure through as quickly as appears to be intended.

4. It is objected that employers, as such, receive no benefits from the Bill, except such as are shared by the professional and insured classes, that, therefore, it is unfair to require contributions directly from employers. It is a national scheme, and the whole nation should bear the cost. To put this charge upon employers is really raising wages by legislation. It is suggested that the employers will pass on these charges to the consumer, but if they do the cost of their products will be enhanced, and higher prices tend to curtail demand, which in turn tends to diminish production, and so creates unemployment.

We have also specific objections to Clauses 2, 11, 13, 41, 43, 46, 51, 63, 66, 68, 70, 71, 72, 74, and 79, which we would be pleased to furnish you with if you feel interested. This Association consists of upwards of 160 members, of various political views, and you can, therefore, take it that it is representative of the feeling of the building trade in Leicester. We are supported in our action by the National Federation of Building Trade Employers of Great Britain and Ireland, and the matter is being further dealt with at the half-yearly meetings at Newcastle-on-Tyne next Tuesday and Wednesday.

We trust, in the interests of the building trade and the country at large, that you will give this matter your most careful consideration.

F. BECK, President.
S. A. DOVE, Secretary,
Leicester and District Building Trades Employers' Association.

GENERAL BUILDING NEWS.

NEW CHURCH, CARDIFF.

The new Roman Catholic Church has been erected by Messrs. James Allan, Ltd., builders, of Cardiff, at a cost of about 9,000. Mr. F. R. Bates, of Newport, was the architect, and the seating accommodation of the church is for 600.

ST. JOHN'S CHURCH, MEADS.

The enlargements to this church have been carried out at a cost of about 10,000. by Messrs. Dove Bros., of Islington, London. The architect for the work was Mr. A. R. G. Fenning, F.R.I.B.A., and the reredos and baptistry were designed by Mr. Arthur C. Blomfield, F.R.I.B.A. The stained glass windows are by Messrs. James Powell & Sons.

NEW CHURCH, NEWCASTLE.

This Primitive Methodist Church is being erected at Cross Heath at a cost of about 350. The contract is being carried out by Messrs. J. Broadhurst & Son, builders, of Burslem, and the architects are Messrs. E. T. Watkin and J. Adams, of Burslem.

NEW CHAPEL, MACSTEY.

The estimated cost of this chapel is 3,600. and it has been erected from the designs of Mr. Beddoe Rees, architect, of Cardiff. The builders were Messrs. Turner & Sons, of Cardiff.

NEW BANK, NEWCASTLE.

The London Joint Stock Bank proposes to erect new banking premises in Grey-street, Newcastle, and plans have been prepared by Mr. W. H. Brierley, F.S.A., F.R.I.B.A.,

architect, of York. The contractor is Mr. Thos. Lumsden, of Jarrold.

CONSERVATIVE CLUB, WALTON.

The foundation stone of this building was laid on the 15th inst., and the estimated cost of the erection of the new premises is about 1,000. The designs have been prepared by Mr. Alfred C. M. Lillie, architect, of Bamber Bridge, and the builders are Messrs. G. Wood & Sons.

NEW LIBERAL CLUB, YARMOUTH.

Mr. S. E. Tomkins was the architect for these new buildings, which have been erected at a cost of 235, and the contract was carried out by Mr. F. O. Russell.

NEW LABOUR EXCHANGE, HEREFORD.

This new building has just been opened by the Mayor of Hereford. It is built of steel construction, with red terra-cotta facades, forming an imposing architectural feature on a corner site of one of the principal streets of the city. The architect is Mr. Ernest G. Davies, of Hereford, and the builder Mr. W. C. Bolt, of the same city.

UNITED BUILDERS' ALLIANCE.

The promoters of the newly-established United Builders' Alliance convened a meeting for Wednesday evening at the Athenæum, Muswell Hill, but, as there were less than a dozen gentlemen present an hour after the proceedings were timed to commence, it was decided to postpone the meeting until October.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with (the names of the applicants are given in parentheses).

Line of Frontage and Projections.

Battersea.—One-story shop in front of No. 89, Lavender-hill, Battersea (Messrs. E. Heather & Sons).—Consent.

Hackney, North.—Addition at No. 206, Upper Clapton-road, Hackney (Mr. H. C. Webster for Lady Amherst of Hackney).—Consent.

Hammersmith.—Projecting illuminated sign at No. 24b, King-street, Hammersmith (Mr. L. E. Jolly).—Consent.

Hampstead.—Projecting porch at a house on the north-western side of Antrim-street, Hampstead, westward of Haverstock-hill (Mr. S. C. Lathbridge for Mr. J. Russell).—Consent.

Paddington, South.—Erection of a building on the southern side of Harrow-road, Paddington (Mr. T. M. Wilson).—Consent.

St. Pancras, West.—One-story building to abut upon the south-western side of Delancey-street and the south-eastern side of Stanhope-terrace, St. Pancras (Messrs. Dolman and Pearce).—Consent.

Wandsworth.—Five projecting lamps at Nos. 79, 81, 85, 87, and 89, Streatham High-road, Wandsworth (Mr. A. Stokes).—Consent.

Wandsworth.—One-story shops in front of Nos. 200 to 214, Putney-bridge-road, Wandsworth (Mr. T. Jones).—Consent.

Woolwich.—Church building on the northern side of Eltham High-street, next to "Eagle House" (Messrs. Scoles & Raymond for The Rev. Abbot White).—Consent.

Width of Way.

St. Pancras, East.—Building upon a site abutting upon the northern side of Jeffroy's place, Kentish-town, and the eastern side of Priory-place (Mr. C. H. E. Bridgen for Mr. T. B. Westacott).—Consent.

Width of Way and Construction.

Fulham.—Two temporary wood and iron buildings in a yard on the eastern side of New King's-road, Fulham (Cole & Shuttleworth, Ltd.).—Consent.

The recommendation marked + is contrary to the views of the metropolitan borough councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ASHBOURNE.—Factory. Clifton-road, for Messrs. Neale.

Ashton Manor (Warwickshire).—Head quarters for Army Service Corps at Aquarium (730); Messrs. Woodward & Mills, builders, 85, Cox-street West, Balsall Heath, Birmingham.

* See also our list of Competitions, Contracts, etc., on another page.

Ashton-under-Lyne.—House, Stamford-park (5,000.); Mr. J. T. Earnshaw, Surveyor, Ashton-under-Lyne Town Council.

Barking.—The following plans have been passed:—Four houses, Devon-road, for Mr. G. Clark; five houses, Wilmington gardens, for Mr. J. Ranson; five houses, St. John's road, for Mr. R. H. Carter; pipe factory and manager's house, Abbey road, for Messrs. Deguin & Son.

Barnet.—Offices for the Clerk (440.); Mr. G. D. Byfield, Clerk, Board of Guardians, Barnet.

Barnsley.—Extensions to public baths; Mr. S. H. Taylor, Surveyor, Barnsley Town Council (architect not yet appointed).

Barton.—Proposed alterations to Wesleyan Day School; Mr. S. M. Grant, Secretary, Lindsey Education Committee, Lincoln.

Bellsbush.—Picture palace (2,000.); Mr. J. Wilson, architect, Oakfield-chambers, Brandon-street, Motherwell.

Benula.—Shooting lodge (5,000.); Messrs. Cameron & Burnett, architects, Academy-buildings, Inverness.

Bideford.—Central fire station; Mr. R. E. L. Hookway, Surveyor, Bideford Town Council.

Birmingham.—Proposed central bathing establishment for ladies; J. Cox, Engineer, Baths Department, Birmingham Town Council.

Blackhill.—Roman Catholic Schools; Mr. J. A. Coyle, architect, 30, Kingley-terrace, Newcastle.

Bognor.—Twelve houses; Mr. O. A. Bridges, Surveyor, Bognor Urban District Council.

Bridgend.—Schools (5,000.); Mr. D. P. Jones, architect, 62, Charles-street, Cardiff.

Bridgend, N.B.—House (2,500.); Messrs. Jenkins & Mass, architects, 16, Bridge-street, Aberdeen.

Brighton.—Receiving houses (5,000.); Mr. Hawker, architect, North-street, Quadrant, Brighton. Hospital; Mr. Hawker, architect, North-street, Quadrant, Brighton.

Bristol.—Adaptation of upper floor of transit shed No. 2 for cold storage purposes (20,000.); Mr. W. W. Squire, Dock Engineer, Bristol Town Council.

Brynmain.—Schools (3,000.); Mr. D. P. Jones, 62, Charles-street, Cardiff.

Bury.—Weaving shed, Dumers-lane, for the Bury Co-operative Wholesale Society.

Canterbury.—Extensions to laundry, also house for nurses (1,250.); Architect, care of Mr. J. Plummer, Clerk, Board of Guardians, Canterbury.

Chester-le-Street.—Enlargement of hospital; Mr. J. H. Mole, Surveyor, Chester-le-Street Rural District Council.

Chichester.—Bacon factory; Mr. A. C. Harris, architect, Chichester.

Covenry.—Headquarters for Royal Field Artillery (Howitzer) Brigade (3,100.); Messrs. Clark & Sons, builders, Covenry.

Croydon.—Temporary buildings at Mitcham-road and Winterbourne-road Schools; Mr. J. Smyth, Surveyor, Education Committee, Croydon Town Council.

Crumpsall.—Additions to workhouse (2,400.); Mr. J. Macdonald, Clerk, Board of Guardians, Manchester.

Dulkeith.—Bank for Commercial Bank of Scotland (2,500.); Messrs. S. Mitchell & Wilson, architects, 13, Young-street, Edinburgh.

Dalton.—School; Messrs. Thornton & Sons, builders, 55, Glasshouse-street, Masbro', Rotherham.

Dewsbury.—Woolen mill, Earlsheaton; Messrs. Kirk, Son, & Ridgway, architects, Market-place, Dewsbury. New isolation block and infectious diseases hospital (3,000.); Messrs. W. & G. Thornton, architect, Dewsbury. Extensions to school, Chicken lane; Messrs. Holton & Fox, architects, Corporation-street, Dewsbury.

Doncaster.—Picture palace, French Gate; Mr. F. H. Johnson, architect, Priory-place, Doncaster. Woolen mill for Messrs. Gardenton & Sons; Messrs. Watson, Son, & Ellison, architects, Wakefield.

Dundee.—Power loom factory (4,000.); Mr. W. H. Lindsay, 215, Cleington-road, Dundee. Dyarst.—Extensions to stores of Co-operative Society (5,000.); Mr. D. F. Smith, 210, High-street, Kirkcaldy. School (4,000.); Mr. D. F. Smith, 210, High-street, Kirkcaldy.

East Cowes (Isle of Wight).—School (3,500.); Mr. Meader, builder, care of Mr. F. G. Flux, Secretary, Education Committee, Isle of Wight County Council.

Eastwood.—Wesleyan Methodist Church (650'). Mr. A. J. Davidson, builder, Leigh, Eddercliffe. Stores, Frost-hill, for the Liverpool Mutual Co-operative Society.

Edinburgh.—Extensions to academy, Inverleith-place (1,500.). Messrs. Leadbitter, Fairley, & Riell, architects, 17, Young-street, Edinburgh.

Exeter.—Fox's Bank; Messrs. E. H. Harbottle, architects, County-chambers, Exeter; Messrs. Stephens & Son, builders, Fore-street, Exeter.

Exmouth.—Extensions to Cathedral Convent Secondary School (2,000.); Mr. E. E. Ellis, architect, Imperial-road, Exmouth.

Framwellgate Moor.—Premises for Co-operative Society; Mr. L. G. Ekins, Co-operative Society, West Blandford-street, Newcastle.

Glasgow.—Additions to Fulsdale Means for Mr. Wallace Fairweather (2,500.); Messrs. F. Barnett & Boston, architects, 150, Hope-street, Glasgow.

Glencannich.—Shooting lodge (5,000.); Messrs. Cameron & Burnett, architects, Academy-buildings, Inverness.

Golspie.—School (1,880.); Mr. D. Ed. Harne, architect, Golspie.

Halifax.—Extensions to workhouse (1,500.); Mr. W. C. Williams, Commercial-street, Halifax.

Hamilton.—New halls, workshops, etc., for Co-operative Society (2,000.); Mr. James Lockhead, Brandon-chambers, Motherwell.

Harborne.—Proposed baths, Lordswood-road; Mr. J. Cox, Engineer, Bath Department, Birmingham Town Council.

Haydon Bridge.—Thirteen houses, Bridge-wood Estate, for the Haydon Bridge Co-operative Society.

Hayward's Heath.—Eliot Cottage Hospital; Messrs. F. Wheeler & Godman, architects, Bank-chambers, Horsham; Mr. H. Finch, builder, Hayward's Heath.

Hebburn.—New offices for Messrs. Hawthorn, Leslie, & Co.; Messrs. Boyd & Groves, architects, Emerson-chambers, Newcastle.

Hednesford.—Technical Institute (1,670.); Mr. H. Dawes, builder, Cradley Heath.

Hindley (near Wigan).—Billiard hall (1,670.); Mr. H. Booth, 42, Regent-street, Haslingden.

Hindport.—School (5,000.); Mr. A. Race, Town Hall, Barrow-in-Furness.

Hull.—Christian Science Church; Messrs. J. D. & S. J. Mould, architects, Walmersley road, Bury.

Huthwaite.—Public Library; Mr. G. Boscock, Surveyor, Huthwaite Union District Council.

Inverness.—Extensions to home for blind (3,500.); Mr. W. McIntosh, architect, 62, Academy-street, Inverness.

Kenmare.—Thirty houses (about 1271. each); Mr. W. Jennings, builder, Ballinrobe.

Leicester.—Extensions to asylum (3,500.); Mr. E. G. Mowby, Town Hall, Leicester.

Leek's Heath.—Extensions to school (4,000.); Mr. H. L. Growther, Council Engineer, Southampton.

Longsight.—Industrial school (2,300.); Messrs. Holt & Ratcliffe, 17, St. Anne's-square, Manchester.

Lunley.—New school (5,000.); Mr. W. Rushworth, architect, Shire Hall, Durham.

Mavron.—New school (3,000.); Mr. C. W. Best, County Architect, Brecon.

Melton Mowbray.—School; Mr. E. G. Fowler, 35, Bowling Green-street, Leicester.

Merchiston Castle.—Additions to school; Mr. J. M. D. Peddie, 8, Albyn-place, Edinburgh.

Morley.—Extensions to Daisy-hill Mills; Mr. T. A. Buttery, architect, Queen-street, Morley, Yorks.

Movar.—Villa (2,150.); Mr. J. G. Falconer, architect, 4, Cameron-square, Fort William.

Natherton.—School (5,000.); Mr. J. P. Osbourne, architect, 95, Colnacre-row, Birmingham.

New Barns.—Council schools (5,000.); Mr. A. Race, Town Hall, Barrow-in-Furness.

Newcastle-on-Tyne.—Additions to cottage homes (4,800.); Messrs. E. Henderson & Son, builders, Ponteland.

Newcastle-under-Lyme.—Billiard hall (1,600.); Mr. H. Booth, 42, Regent-street, Haslingden. Picturedome (2,500.); Mr. H. Booth, 42, Regent-street, Haslingden.

Northampton.—Secondary school for girls; Sharnham and Archer, architects, 3, Market-street, Wellington. The following plans have been passed:—Four houses, Birchfield-road, for Mr. G. W. Souster; eight houses, Dundee-street, for Mr. W. Higgins; four houses, Fleet-street, for Mr. W. Lewis; five houses, Dundee-street, for Messrs. C. & E. Lewis; six houses, Raymond-road, for Mr. T. Higgs; three houses, Forfar-street, for Mr. J. W. Gosage.

North Ormesby.—Alterations to girls' school (540.); Messrs. W. King & Son, Ltd., builders, North Ormesby.

Norwich.—New shops for A. Banting & Co., Ltd., St. Stephen's-corner; Mr. A. F. Scott, architect, Castle Meadow, Norwich.

Nottingham.—Adaptation of premises, Edwards lane Estate, into children's home (2,730.); Messrs. Gilbert & Hall, builders, care of Mr. G. M. Howard, Clerk, Board of Guardians, Nottingham.

Oswaldtwistle.—School (8,000.); Mr. Little, architect, Ribblesdale-place, Prescot.

Paisley.—Extensions to carpet factory; Messrs. R. Jack & Co.; Mr. T. G. Crombie, architect, 1, County place, Paisley.

Peterborough.—Reconstruction of (1,888.); Mr. W. H. Wycherley, builder, care of Mr. J. C. Davies, Secretary, Education Committee, Denbighshire County Council, R. Peterborough.

Peterborough.—Extensions to school (3,500.); Messrs. Brown & Watt, architects, 17, U. street, Aberdeen.

Ponteland.—Extensions to homes (5,000.); Mr. E. Bowman, architect, County-chambers, Newcastle-on-Tyne; Messrs. E. Henderson & Sons, builders, Ponteland.

Portsmouth.—Proposed eighty-six houses for the Faldou Colliery Co.

Rotherham.—Wesleyan Reform Church, Dalton Brook (650.); Mr. D. B. Jenkin, architect, Imperial-buildings, Rotherham.

L. Brierley, builder, Rotherham. U. Methodist Chapel (3,250.); Mr. James T. architect, Moorgate street, Rotherham.

Charles Greens & Sons, builders, Rotherham.

Rhyhope (Sunderland). New school (6,000.); Mr. E. Eltringham, architect, Central-barns, Newcastle.

Sidmouth.—Three residences (3,000.); R. W. Sampson, architect, Station-road, South Devon.

Skelton (Yorks).—Twenty artisans' dwellings (4,500.); Mr. W. P. Robinson, Surveyor, Skelton and Brotton Urban District Council.

Skinnergrove.—Enlargement of school (2,500.); Mr. T. Willoughby, builder, 1, End, Netherton, Yorks.

Steyning.—Alterations to grammar school (1,940.); Messrs. Sandell & Sons, builders, Railway-approach, Worthing.

Stockport.—Buildings for imbeciles & epileptics (25,000.); Mr. C. T. Johnson, Clerk, Board of Guardians, Stockport.

Street.—Housing scheme (7,500.); Mr. Pursey, Surveyor, Street Urban District Council.

Sunderland.—School (12,000.); Mr. C. Brown, Fawcett-street, Sunderland.

Swansea.—The following plans have been passed:—Garage, rear of 116, St. Helier avenue, for Mr. M. J. Thomas; eight houses, Pantygwydr-road, for Mr. J. Jenkins; additions, Salem Chapel, N. corner road, for the trustees; additional offices, Worcester place, for the proprietors of the *Cambria Daily Leader*; garage, Orchard-street, for Mrs. A. E. Richards; five houses, Queen's-road, Coedseacon, for Mr. F. Hoskins; alterations, Bersford House, minor road, for Mr. Evan Evans. Plans have been lodged for lodging house, Stranc Road, Mr. D. Vaughan.

Swinton (near Rotherham).—Parish School; Mr. E. J. Knight, architect, 33, College-street, Rotherham.

Tatlow.—St. Nicholas' Parish Church (8,000.); Messrs. Honour & Son, builders, Akeman-street, Tring.

Temple (near Glasgow).—Extensions to laundry, for Messrs. Burton & Co. (1,800.); Mr. T. Abercrombie, architect, 1, Col. place, Paisley.

Thirsk.—Proposed alterations to school hospital; Mr. R. R. Wright, Surveyor, Thirsk Rural District Council.

Thrimpton.—School; Mr. E. G. Fowler, Bowling Green-street, Leicester.

Ushaw-Church (2,500.); Mr. J. W. Phillips, architect, Merton-chambers, castle; Messrs. Todd & Son, builders, 4, Ton Wiske, Northallerton.

Wareham.—Territorial headquarters; Messrs. Fletcher, Son, & Brett, architects, Dorchester.

Wellington.—County schools (4,000.); Mr. Robinson, Caxton House, Westminster, S.W.

Wells.—Additions to Boys' Blue S. (1,800.); Mr. A. J. Pector, architect, Br. Somerset.

Whitecraigs.—Villa (2,200.); Mr. H. Clifford, architect, 225, St. Vincent's-gate, Glasgow.

Whittingham.—Annexe to county school (117,250.); Messrs. E. Taylor & Co., builders, Eber Works, Littleborough.

Whittle-le-Woods.—Offices, Low Mill Works for the Calico Printers' Association.

Willisley.—County school (2,750.); Mr. Robinson, Caxton House, Westminster, S.W.

Willington.—Forty houses for the Willington Co-operative Society.

Woodhouse Rostick.—New residence (1,500.); Messrs. Sharp & Waller, architects, Bridford road, Brighouse.

Wrexham.—Alterations and additions, congregational schools (1,350.); Messrs. D. Bridgewater, & Porter, architects, 3, T. row West, Birmingham; Mr. C. Gri. builder, Lye, Stourbridge.

Yarmouth.—Extensions to police and stations; Mr. J. W. Cockrill, architect, Yarmouth.

LAW REPORTS.

OFFICIAL REFEREE'S COURT.

(Before Mr. MUIR-MACKENZIE.)

A hearing was again resumed last week the action brought by Mr. F. G. Minter, contractor, whose headquarters are at 25, against Mr. Charles Waldstein, Proprietor of Art at Cambridge, from whom the plaintiff claims 2,750*l.*, the amount said to be due in pursuance of a certificate of Mr. Frederick William Foster, an architect, and in respect of a contract made between plaintiff and defendant for the carrying out of alterations and additions at Newton Hall, near London. Defendant raises a number of allegations of defective work, and presents a counter-claim for 10,000*l.*

Further evidence was called on behalf of plaintiff's case.

Edmund F. E. Kendall, the manager of Cambridge branch of Smith's Timber Company, Ltd., who supplied for Newton Hall the timber, with the exception of that in the chimney, declared that its quality was sound and good, and also well-seasoned.

H. T. A. Chidgey, quantity surveyor, residing in the Adelphi, Past-President of the Quantity Surveyors' Association, gave evidence concerning the quantities and also as to cost of work.

Frederick William Foster, architect, residing at 26, Bedford-row, informed plaintiff's leading counsel, Mr. Lewis Thomas, that he was articulated in 1876, and for years had obtained practical professional experience with Messrs. Cubitt, the known contractors. During that time he erected very large buildings, amongst one for Mr. Alfred Rothschild, that cost a quarter of a million, and that was in his supervision from start to finish. He had also been responsible for the carrying out of architectural work for members of the Royal Family, for peers, and for nobles.

Thomas: Have you ever had before the tender friction with any of your clients?

Foster emphatically replied, unhesitatingly, "Never!" and, proceeding, said that he was either in September or October, 1909, he was consulted by Professor Waldstein regarding the alterations and additions to Newton Hall. As was customary, witness stated the preparation of plans to his then assistant, Mr. Gill, who, an architect, now an assistant to the architect to the Duke of Westminster. Mr. Gill, at the period in question, worked in a room adjoining his at 25, and was therefore in constant touch with him. Witness would rough-out details and hand them over to Mr. Gill, who would be the working drawings and submit to witness for his observations. He had then, Mr. Gill's authority, to go from time to time to Newton to act on his behalf when he could not go. But witness had often seen and he saw the work which had been done out since his last visit. The work was, really speaking, carried out to his approval. Mr. Green, the clerk of the works, had come up to London from time to time with points that needed solution. He supplied the answers, and Mr. Green's authority to see the orders carried out. Such orders as Mr. Green gave, he (Mr. Foster) entirely accepted the responsibility. He gave further evidence to show that for variations had been carried out at the instance of Professor and Mrs. Waldstein. He stated that among architects Mr. Minter looked upon as a very good builder, and that, too, a particularly good reputation as joinery and very large joinery works. Mr. Thomas: Is there the slightest ground suggesting that the stability of this house is any danger whatever?—Not the slightest. He said that the brickwork and mortar were all right. He saw no evidence of weakness in the floors. He also quite approved of the timber.

Foster, continuing his evidence, stated that up to January 11 of this year, the occasion of his last visit to Newton Hall, relations with the Professor were most friendly. At that time there was no suggestion of his supervision, or any suggestion that Minter had not discharged his obligation. The details might have been criticised, but he was no complaint as to the general progress of the work.

Clavell Salter (cross-examining for the defence): Before beginning this job did you sign the contract?—Yes. It was an ordinary A.A. contract.

He was presented the contract, filled it in, and signed it to the Waldsteins for signature?—Yes. He saw many contract drawings were there?—Not say.

Did you take the trouble to insert their name?—I am not sure.

In fact, you left it in blank? That may be. Did you think that was protecting your client's interest? Yes, because the drawings were signed. Continuing, he said his impression was that the contract drawings were signed by Professor Waldstein, but he could not say so definitely.

Should they be?—Yes. Did you look to see if they were?—I think not. I was under the impression they were signed, but I cannot recollect what transpired.

In the autumn of 1909 you had many conferences with Mr. and Mrs. Waldstein before they embarked on this building?—Yes, as far as I can remember.

Were they not most emphatic that, if they built, everything must be of the soundest and best? Yes.

I think they are both very artistic people. But did they not otherwise make it clear to you from the first that, if there was a question between sound work and decorations, the decorations must give way to sound work?—I have no distinct memory of any particular discussions at that point.

But they were very anxious and particular from the first as to what this building should cost?—Yes. Witness added, however, that he had no recollection of telling Mr. and Mrs. Waldstein that, in his opinion, it would cost about 7000*l.* to build a house from his plan. He might have quoted a rough sum. There were extras to bear in mind.

You always found Mr. and Mrs. Waldstein exceedingly courteous and friendly?—Yes, exceedingly.

Notwithstanding that, did they not complain of what I must call unbusinesslike conduct on your part?—I think not. In answer to further questions, Mr. Foster said he had no recollection of Mr. and Mrs. Waldstein saying they could not go beyond 12,000*l.* at the outside.

Did you not discuss with them, Mr. Foster, whether to have the tender reduced to 12,000*l.* by reducing what had to be done, and starting with a tender of 12,000*l.*, or to leave the tender as it was and effect reductions as the work went along?—I believe that was discussed.

Mr. Salter asked Mr. Foster whether, when he received a letter from the defendant's solicitors requesting him not to grant any further investigation on the part of Mr. Waldstein, he did not gather that Mr. Waldstein did not desire him to act further as architect in this contract.

Mr. Foster: No. I had no intimation that I was not to remain as architect. Perhaps I may add that eventually Professor Waldstein told me that, whatever happened in these proceedings, he hoped it would make no difference to our friendship.

In answer to further questions, the witness said that Mr. Minter called on him on January 20, when he gave him a certificate against Mr. Waldstein for 2,750*l.* He was perfectly aware that when he gave that certificate he was doing so in violation of the instructions of his client. Mr. Minter had told him on that occasion that it would be possible to sue him (the witness) if he did not grant him the certificate. But that statement had no weight with him, but he knew his position. He was advised that an amount was due to the contractor, and accordingly he had to issue the certificate and leave the client to withhold payment if he thought fit. Witness had acted on his own initiative, and had looked neither right nor left. He gave the certificate in accordance with the terms of the contract. He had no power to withhold it, otherwise he should have leant towards his client. Witness subsequently admitted that, when the defendant's solicitors wrote requesting him to hand over all his architectural documents and issue no further certificates until further notice, he practically understood that he was suspended from his duties as an architect.

Questioning Mr. Foster concerning the timber, Mr. Salter asked him what right had he to bind his client to accept only "good, sound quality" when he had stipulated on his behalf for the "very best."

Mr. Foster: "Good, sound" is a general term, having reference to building and framing purposes, but having no reference to any particular grade. Any architect in London will tell you that the difficulties of getting specified timbers are well-nigh insuperable.

The Official Referee: An ordinary man in the street like myself wonders, then, why you put "very best" in.

In answer to another question, the witness admitted that 10 or 15 per cent. of the timber was "a bit shaky." He had never had to build so large a house under such conditions before. Whatever defects there might be in this case he attributed to the extreme rapidity at which the work at Newton Hall had to be done. He had not, too, anticipated so much heat being applied for the drying of the house. Under

the circumstances, he knew that something would have to go.

Mr. Salter: When you allowed your client to stipulate that the work should be finished by August 1, did you warn him that something must go?—I think not.

Have you ever seen a new house that anybody built in such a state as this a year after completion?—I cannot call to mind any particular house.

The case was proceeding when we went to press.

HIGH COURT OF JUSTICE, CHANCERY DIVISION.

(Before Mr. Justice EVE.)

Injunction against Builders.

Nash v. Spencer, Santo, & Co., Ltd.

In this case Mr. Clayton, K.C. (with him Mr. Dighton Pollock) moved on behalf of Mrs. Nash and others against Messrs. Spencer, Santo & Co., Ltd., builders, of Westminster, for an injunction to restrain the defendants from causing a nuisance by noise and vibration proceeding from the defendants' works, which were the rear of the plaintiffs' houses in Paye-street, Earl-street, and Hudson terrace, Westminster. For some time the defendants had been carrying on their works during the whole of the night, and using an engine and stone-sawing and other machinery. It had created an intolerable nuisance, both by noise and vibration. The occupiers of the houses complained that they were rocked in their beds rather more than they liked, and the only answer the defendants made was that they were busy, and that they must complete their Law Courts contract, and must go on with day and night shifts.

Mr. Justice Eve said that the contract for the Law Courts did not seem to be going on very fast.

Mr. Clayton said that he had got evidence of several tenants of the most pathetic character as to the persistence of the nuisance. It was all small property, and let to weekly tenants, who were threatening to leave. He asked for the injunction.

Mr. Lawrence, K.C., said the defendants were working day and night to complete the contract at the Law Courts. They had told the plaintiffs that there would not be any night work after the 28th of July. Until that time they would have to work a night shift because they were under heavy penalties, and it would be a very serious matter to them if they were not allowed to do so. The damage to the plaintiffs would be very inconsiderable, because if the tenants left, the plaintiffs could only get fresh ones, as there was a great demand for the houses.

Affidavit evidence was read on both sides. The plaintiffs' evidence alleged that windows vibrated, and rest at night had been destroyed for over a fortnight. The defendants' affidavits showed that the plant was an electrical one, and that no engine had been worked for some months past, and that it would take four or five weeks to shift the electrical plant to another site. On the question of public convenience it was important that the contract at the Law Courts should be completed, and the defendants should not, therefore, be prevented from working. In the short time available, counsel added, the defendants had not been able to properly meet the plaintiffs' evidence.

Mr. Clayton submitted that no answer had been given to the plaintiffs' case, which showed *prima facie* that an intolerable nuisance existed. No amount of negative evidence could disprove the positive statements made on behalf of the plaintiffs. The defendants could not meet the plaintiffs' case as to damage by saying it was easy to get fresh tenants. The plaintiffs had rights which they were entitled to have protected.

Mr. Justice Eve said that even if he granted an injunction, he would probably suspend it to give the defendants an opportunity of remedying matters.

Mr. Lawrence said he was willing to give an undertaking not to work after 10 p.m. from July 28, if the plaintiffs would give an undertaking in damages.

In giving judgment, Mr. Justice Eve said that the defendants had to get rid of a large quantity of stone within a limited time, and in June last they had to start a night shift. It was quite clear that a great deal of the work of stone-cutting for the purpose of fulfilling the contract at the Law Courts was done during the night. The plaintiffs, who had not been precipitate in taking account, discovered that the rest of their tenants had been disturbed by the noise. Against the evidence of the plaintiffs, that of people who were not disturbed had been put in, but his lordship thought that there was a certain number of people whose consciences were either so blunted or so pure that they could get their rest at night, despite any noise. A con-

tractor's yard outside an open bedroom window was calculated to cause great annoyance and discomfort. Persons ought to conduct their businesses with due regard to the comfort of the average man or woman, and he thought there was sufficient evidence before him to prove a nuisance by noise at night. He did not attach much importance to the vibration complained of. The defendant company was being carried on by a receiver and manager appointed by the Court on behalf of the debenture holders, and while he sympathised with the plaintiffs, he must have regard to the interests of the defendants, and to the relative amount of inconvenience and loss involved. He thought the proper course to take was to grant an injunction to restrain the nuisance by noise at night, and to suspend the operation of it over the 28th inst., in order to give the defendants an opportunity of making some other arrangements. He further expressed the opinion that 10 o'clock at night was the latest hour at which the defendants ought to work noisy machinery.

The costs would be costs in the action.

(Before Mr. Justice EVE.)

Party Wall Dispute. Carden v. Layton.

On Friday, July 21, this case again came before his Lordship. The facts were fully reported in our issue of July 14.

Mr. Clayton, K.C., for the plaintiffs, said that Sir Alexander Stenning had now made his report, by which he found that the work already executed at 17 and 19, Goswell-street had been properly done, and in accordance with the requirements of the London Building Act, with the exception that the portion of the wall referred to in the writ had not been properly bonded into the party wall, and that in order to comply with the provisions of the London Building Act, such part of the wall as was not properly bonded ought to be taken down. Mr. Clayton submitted that on the report, the plaintiffs, who were quite satisfied with it, ought to have the relief they claimed. The defendants said it was an independent wall, but Sir Alexander Stenning had found it to be a party wall. If the defendants would give an undertaking to do what the report said ought to be done and pay the costs, the matter could be ended. There was a claim in the writ as to ancient lights, and the plaintiffs wanted to preserve their rights in this respect quite apart from the question of the wall.

Mr. Lawrence, K.C., for the defendants, said that his view was that the motion was misconceived.

Mr. Justice Eve said it appeared to him to be merely a question of costs now. The wall would have to be taken down.

Mr. Clayton said he was prepared to deal with the matter now, and all he wanted was an undertaking or a mandatory order.

Mr. Justice Eve asked whether Sir Alexander Stenning had made his report as third surveyor in the arbitration proceedings. He would like to have that report before him when he decided the motion.

Mr. Lawrence said he suggested there was no case against him to pull down. If the defendants did not comply with the London Building Act, it was for the authorities to interfere, and his case was that his clients had built under the supervision of the surveyors under the Act, and in a proper manner.

Mr. Clayton said he had a complete answer to that.

Mr. Justice Eve said that he would order the motion to stand over for a week, so that he could have the report of the third surveyor before him. When he got that he would decide all the points in the action.

Kensington Builder's Action:

A Remarkable Point as to a Contract.

In the King's Bench Division on Tuesday, July 18, before Mr. Justice Pickford, the non-jury action—Roodhouse v. Burt—came on for hearing. This was an action by the plaintiff, Mr. Robert Reginald Roodhouse, builder and estate agent, of 145, Hammer-smith-road, London, W., against Mrs. Edith Marie Stevens Burt, of Holland-road, Kensington, to recover 380*l.* 10*s.* 4*d.* for work done at the defendant's house, 94, Holland-road, consisting of alterations and repairs.

The defence set up was that the defendant did not enter into the contract with the plaintiff, but with his father, Mr. R. P. Roodhouse, trading as R. R. Roodhouse, and that the business carried on by R. R. Roodhouse was the business of R. P. Roodhouse.

Mr. G. Ricketts represented the plaintiff, and for the defendant Mr. Gore Browne, K.C., and Mr. Stuart Bevan appeared.

Mr. Ricketts stated that of the sums claimed, 14*l.* 12*s.* 2*d.* represented the balance due under the contract, and 365*l.* 18*s.* 2*d.* was for extras.

Counsel proceeded to explain that in regard to the large sum for extras, the contract had a clause which stated that the amount did not include stoves, kitcheners, and other necessary articles. The action arose out of an order of the Court of Appeal made by Lord Justices Fletcher Moulton, and Buckley, to the effect that in regard to the dispute between the parties, the evidence should be set down for trial as to whether the plaintiff was a person entitled to sue, and whether his father had authority to make a certain agreement, and whether the plaintiff was entitled to have an award set aside.

Mr. Ricketts said he would endeavour to show that the plaintiff was entitled to sue, and that his father had not authority to enter into the agreement.

Counsel proceeded to deal with the correspondence in the case, and said that at the end of 1904 the plaintiff had the business carried on at Hammer-smith by his father assigned to him. The work at the defendant's house was carried out by the plaintiff, and all the extras were ordered by Mrs. Burt, either through the plaintiff or his foreman. The work consisted of alterations and repairs to the defendant's house in Holland-road. The actual contract (it was admitted) was signed by the plaintiff, rather than his father's name, but the plaintiff had negotiated the contract, and he also carried out the work and frequently went with the defendant to various places of business to order goods for the equipment of the house.

Counsel explained that various letters in the case were written by the plaintiff's father, who had carried on the business up to 1904, and the plaintiff's father did interview the local surveyor at Kensington in regard to the work as affecting certain points under the London Building Act. In regard to the money in dispute, there had been arbitration proceedings, and a certain sum had been awarded, but this the plaintiff was not ready to accept, and he contended the award was not binding as he had not submitted to the arbitration. There had been an offer to pay half the amount of the award, a sum of about 83*l.*, but this plaintiff had refused to take. As the plaintiff could not get payment of his account, the writ was issued.

Counsel in his father had had no share in the business at all since the assignment to him at the end of 1904. His father now lived in the upper part of the office, and was 71 years of age. Witness received assistance from his father in the office, but he had never given him authority to bind him in regard to business transactions. The extra work at Mrs. Burt's house was carried on two months after the completion of the contract. When witness pressed for payment, Mrs. Burt said she had not got any money and could not pay him. He had no knowledge of his father signing any submission to arbitration. He heard that his father had done this when he came back from a summer holiday; but he declined to agree to what had been done, and he wrote to say the submission to arbitration had not been signed by him. He then gave instructions for his father to issue the writ.

Mr. Roodhouse said that the name "R. R. Roodhouse" was up in several places at his business, and also on his "Roodhouse" in one or two. The name "R. P. Roodhouse" was taken away when the business was taken over by witness.

Cross-examined, he said his father wrote all the letters and practically all the receipts for payments.

Mr. Gore Browne: Can you suggest any reason why he was signing the receipts when the contract was (as you say) with you?—I asked him to do so.

His Lordship: Why did you not sign receipts yourself?—I might have done so. Further questions were put to witness by counsel with a view to suggesting that his father was the principal and the plaintiff his manager. (Witness asserted that there was evidence in the documents that this was not the correct position.)

The hearing was adjourned. Further evidence was tendered subsequently, and on Friday his Lordship held that the plaintiff was the person entitled to sue, and ordered that the question of amount should be referred to a surveyor to be appointed by arrangement.

LONDON COUNCILS.

Berkhamstead.—Plans have been passed for Messrs. W. J. Wood & Son for an office, house, and music shop, etc., Lower King's-road, also for Mr. D. Pike for three warehouses.

Bermondsey.—The tender of Messrs. A. White & Co., at 87*l.*, has been accepted for the erection of a boiler house at the electricity works. The following plans have been passed:—Messrs. G. Potton & Son, 2 and 4,

Riley-street, Bermondsey, for the Govett of St. Olave's and St. Saviour's Grammar School, Tooley-street, S.E.; alterations to Parish-street; Messrs. Barlow & Roberts, 15, Redcross-street, Southwark, S.E., facade, Tower Bridge-road; Mr. J. M. Kenny, Tower Bridge-road; Mr. J. M. Kenny, Tower Bridge-road; Mr. J. M. Kenny, Tower Bridge-road, additions to 120, Tower Bridge-road.

Croydon.—Plans and estimates have been submitted by the Surveyor for making Florence-road, Sandhurst, at an estimated cost of 801*l.*, and St. Mary's-road at estimated cost of 738*l.* The Surveyor also submitted the final apportionment, making up Purley Knoll, Beddington, &c. he puts at 8*s.* 9*d.* per foot. The provision apportionment was estimated at 3*s.* 8*d.* tender of Messrs. E. & E. Iles, Wimbly has been accepted at 270*l.* for the execution of works in connexion with the new overhead at the Sewage Works at Merton. Plans and estimates submitted by the Engineer have been approved for construction of a sewer in Langdon-crescent, an estimated cost of 404*l.* The following have been passed:—Mr. E. J. Jenner, ten houses, Lancaster-road; Mr. J. Harri, five end-on—20, Ruarings, Barking-road; J. Clark, five houses, Kimberley-street. Plans have been lodged by Mr. A. J. Brer, for seven houses, Central Park-road, Gillingham.

Fulham.—The Borough Surveyor has been instructed to replace the pipes of Fulham road with 6 in. by 5 in. by 3 in. crocodile blocks at an estimated cost of 456*l.* Electric cables are to be extended to D Wharf, Rainville-road, at an estimated cost of 93*l.*

Hammer-smith.—The Borough Surveyor has been instructed to prepare plans and estimates for the making up of Standish. Tenders are invited for carrying out the work of extending the boiler house at the electricity works at an estimated cost of 456*l.*

Hemel Hempstead.—The Education Committee have accepted the tender of Messrs. P. Drew, of Kettering, at 3,238*l.*, for builder's work in connection with the school at Two Waters.

Leamington.—The District Council have passed plans submitted by Mr. F. Jones, four houses, Station-road, Chase B. Pinner.

Leamington.—The asphalt carriageway pavement at the junction of Tottenham Court-road and New Oxford-street has been taken up, and granite sets laid in lieu thereof at an estimated cost of 1,464*l.* Tenders are to be invited for the work. Parts of the asphalt carriageway pavements of Woburny, Kingsway, Kewell-street, Store-street, Russell-street, Broad-street, and Endell-street are to be re-laid at a cost not to exceed 2,510*l.* Plans have been passed for Mr. C. Waymouth for the erection of office warehouse premises on the site of 9, 10, 11, and 12, Lambeth.

Lambeth.—The 12-in. pipe relief sewer Bedford-road is to be extended at an estimated cost of 104*l.* The Council have decided to repair Cranmer-road with 18-in. asphalt, in lieu of broken granite macadam, at an estimated cost of 144*l.*, bringing the total to 310*l.* A plan has been passed for Messrs. Wakeford & Sons, on behalf of Mr. J. & R. Bax, for four buildings, Brixton, also for Messrs. Stringer Bros., for six bc Claverdale-road, Upper Tulse-hill.

Leyton.—The following plans have been passed:—Mr. J. Amis, nine houses, F road; Mr. C. W. Musgrave, addition to "Moorborough," Lemna-road; The J Construction Co., additions to Forest Lea Bridge-road.

Marylebone.—The tender of the P. Asphalt Paving Co., Ltd., has been accepted for the execution of asphalt works in Car street and James-street, at a cost of 1*l.* The Council have further accepted the tender of Messrs. Constable Hart & Co., and Mr. Smart & Sons, for tar macadam work 5,052*l.* and 441*l.* respectively.

Poplar.—Part of Gough-street, adjacent the Guardians' Offices, is to be paved with asphalt blocks at an estimated cost of 200*l.* A portion of the sewer in Leonard-street is to be reconstructed at an estimated cost of 840*l.* A plan has been passed for Mr. Harry Groves, on behalf Messrs. Fowler, Ltd., for additions to C house Wharf, Orchard-place.

St. Pancras.—The work of replacing Gordon-street with crocodile deal blocks, an estimated cost of 1,045*l.*, is to be put in hand at once, and carried out by labour. Information has been received of Messrs. Claudius Ash, Son, and Co., Ltd., to erect a new factory on the site of Nos. 4, 5, 6, and 6*a*, Anglers-lane; George A. Turner, 96, Gower-street, W.C., the architect.

Hamstown.—Plans have been passed as to Mr. H. G. Needham, three houses, venue; Messrs. H. Slow & Son, six Bellevue-road; Mr. W. J. Warboys, houses, Pembroke and Grove roads. A has been lodged by Mr. J. Dunn for hundred and fourteen houses in Elphinstone.

Lezworth.—Tenders are invited for paving-road, Springfield, and Guilders-road, Streatham, as new streets. The plan of Messrs. E. Parry & Co. has been at 312, for paving part of Edgley-Clapham, North, and laying Victoria road paving on footpaths. The following have been passed:—South London Streatham Estates, Ltd., eight houses, road, Streatham; Mr. D. Weston, vestry at Providence Baptist Chapel, road, Streatham; Messrs. Humm, Ltd., motor house, at No. 58, Upper road, Putney; Messrs. Humphreys, eight houses, Longstone-road, Streatham; Mr. K. J. Young, alterations and additions, No. 276, Baltham, High-road; Mr. H. L. motor garage, rear 140, Replingham-Southfield; Messrs. J. Garrett & Son, gymnasium, etc., at the premises at the Good Shepherd, St. Paul's Clapham, North; Mr. I. Davies, pavilion, High-street, Putney; Mr. Hammond, laundry, St. Ann's hill, Fair-

Ham.—The tender of William Griffiths has been accepted at 1,463, 11s. 8d. supply and laying of 8-in. cross-cut planks in Rathbone-street. Tenders are invited for wood paving a portion of the Dock-road at an estimated cost of £7. The following plans have been passed:—C. Watkins, alterations and additions, Ham Hospital, West Ham-lane; Stratford, Stratford; Mr. W. & T. R. Mil, alterations and alterations to Berwick Broadway, Stratford; Messrs. Burt, & Haywood, Ltd., offices, etc., Prince Street, Silvertown; Messrs. Cham-jett, & Ford, alterations to bakehouse, street, Silvertown; Mr. G. Allen, houses and shops, and altering four into shops, Rathbone-street, Canning Road. Plans have been lodged for Mr. W. C. for a cinematograph theatre, road, Custom House; also for Mr. for alterations and additions to and 5, Windmill-lane, Stratford.

Minster.—Repairs are to be carried out on Chester-road and Chester-square, at an estimated cost of 210, and 100, respectively. The Engineer has been instructed to tenders for paving the north portion of High-street with hard wood pavement, and pavement, and "strip" pavement. Plans have been passed for Mr. F. D. Ellmer, use on site of No. 70 and 71, York-Buckingham Gate.

Widen.—The Engineer has been instructed to prepare plans and estimates for the widening of Pound-lane. Plans submitted by the Engineer for the construction of a sewer in Neasden-lane, at an estimated cost of 470, have been approved. Tenders are invited for the culverting in of a course from Denzil-road to Dudden Hill. The tender of Mr. F. G. Brummell has been accepted for making up Coverdale-road (Herm-road). Designs are to be submitted by the Engineer at the next meeting of the Council for the construction of an under-convenience near the junction of Park-road with High-street, Harlesden. The main is to be extended at an estimated cost of 470.

TRADE CATALOGUES.

Messrs. Thos. Parsons & Sons have issued an ingenious device for showing their well-known "Endelline" and "Endellat" colours *in situ*. It is obviously an advantage to be able to see the effect of a decorative scheme without the expense of doing the work, and by means of the new contrivance any preliminary errors in taste may be avoided. The invention consists of a cover, 9½ in. by 11½ in., which stands up like a photograph frame. The oval centre shows the interior of a furnished room, with white walls and ceiling. By inserting slide-like cards, coloured in "Endellat" tints, the frieze, filling, and dado are seen with a variety of decorative effects. The idea is good, and as Messrs. Parsons suggest, other schemes can be made up to suit the requirements of architects.

Messrs. W. & J. George, Ltd., of Birmingham, send us a circular describing their improved theodolite, an instrument produced at very moderate cost and which is described as being sufficiently accurate for small land surveys. The horizontal circle is of 5 in. diameter, and has a vernier reading to four minutes; the vertical circle being also provided with a vernier. A special feature of the instrument is the new form of clamping arrangement, enabling the user to make a complete revolution of the instrument without moving the stand. The theodolite is furnished with compass and spirit level, and its low price brings the instrument within the reach of any student of surveying.

The Carron Company send us particulars of the new electric range which they have just placed on the market. The Carron electric combination cooking range consists of an oven, for roasting and baking, two hot plates, a double grill and toaster, and a hot closet. The hot plates and oven are each provided with two heats, by which the temperature may be forced at starting, and afterwards maintained at a lesser degree, with excellent economical results. The heating elements may be readily replaced without the necessity of returning the range to the makers. The oven of the 350 range is fitted with the "Carron" inner glass door, so that the food may be examined while cooking without loss of heat. Each range, besides being fitted with two switches for the oven, and one for each hot plate, has separate switches for the grills and hot closet, and two plugs and sockets for connecting to the main cable. The firm also manufacture electric radiators for the heating of private apartments, business premises, etc., where electricity is the lighting agent.

Twice to have borne a part in the pageantry of a Coronation is an achievement of which any firm might well be proud. The Tynecastle Co. of Tynecastle, Edinburgh, and 14, Rathbone-place, London, W., send us a specimen of the canvas hanging which they designed and manufactured for the interior decoration of the Annex of Westminster Abbey. Similar decorations were also carried out on the occasion of the Coronation of King Edward VII. The lengths of the material (No. 1,055, Tynecastle canvas) were sewed together to form large panels, which were hung loosely to the walls. The design has for its motive a conventional treatment of rose, shamrock, and thistle, and the whole surface is tinted in cindered ivory. The effect, to judge from the cutting before us, is excellent.

FOREIGN AND COLONIAL.

Labour in the Colonies.

From the Supplement to Circulars of Emigrants' Information Office, issued from 31, Broadway, Westminster, S.W., we learn that in New South Wales, in Sydney and suburbs, the following trades have been very busy:—Building, iron, furniture, timber, first grade labourers, and factory employees. In Victoria there has been plenty of work also for mechanics, such as builders, carpenters, and bricklayers, and there has been considerable scarcity of workers. In South Australia work of nearly all kinds is plentiful, and there is a good demand for bricklayers, masons, carpenters, plasterers, painters, blacksmiths, boiler-makers, and, in country districts, for unskilled labourers. In Queensland the Government is spending large sums of money on the construction of railways and other public works: there is, therefore, plenty of employment for most classes of labour and brickmakers are in demand in Brisbane. But at the same time there have been some labour troubles. In Western Australia there is a good opening for carpenters, trained mechanics for the construction of railway rolling stock, including carriage and wagon

builders, and plumbers. In the Transvaal the building trade continues brisk at Johannesburg, but there is no scarcity of white labour, and many carpenters, stonecutters, unskilled labourers, and men in the engineering trade are without work. In Cape Province there has been a demand at Cape Town for a few cabinet makers. The employment by the Isthmian Canal Commission of skilled labourers, clerks, and other higher-grade employees is now restricted to American citizens, except in cases in which American labour of the character required is not available. There is a surplus of skilled and unskilled labour on the Isthmus, and as the Canal Works are now within measurable time of being completed, it will soon be necessary to reduce the number of men employed. Intending emigrants are therefore warned not to proceed to Panama.

Timber for Furniture, Flooring, etc., Tunis.

H.M. Consul-General at Tunis (Mr. E. J. L. Berkeley, C.B.) reports that the owner of a property on which timber suitable for making furniture, flooring, etc., is stated to grow desires to get into touch with British firms who might be interested. The name and address of the inquirer may be obtained by British firms on application to the Commercial Intelligence Branch of the Board of Trade, 75, Basinghall Street, London, E.C. Any further communications regarding the inquiry should be addressed to the British Consulate-General, Tunis.

Tramway Stations, Austria-Hungary.
The *Oesterreichischer Zentral-Anzeiger* (Vienna) of July 9, announces that the communal authorities of Vienna have approved the plans for the erection of two tramway stations at a total cost of 3,731,000 kronen (about 155,000*l.*).

PATENTS.

APPLICATIONS PUBLISHED.*

- 15,314 of 1910.—Samuel Meador: Spanners or wrenches
- 15,485 of 1910.—John Barron: Water-closed basins.
- 15,832 of 1910.—Marie Louise Sophie Josephine Junaux: Wooden slab or parquet floors.
- 22,047 of 1910.—Friedrich Schofer: Combined smoke and ventilating shafts.
- 26,455 of 1910.—William Coates and Walter Horne: Straining or sifting vessels for domestic or other purposes.
- 27,776 of 1910.—Francis William Hummerstone: Supports for ladders.
- 1,952 of 1911.—Richard Gerling: Clips for roofing plates.
- 3,189 of 1911.—Stewarts & Lloyds, Limited, and John Graham Stewart: Facet-end for wrought iron and steel pipes and tubes.
- 9,138 of 1911.—Rutherford Coffron and Arthur Cowhill: Saw.

SOME RECENT SALES OF PROPERTY: ESTATE EXCHANGE REPORT.

July 1.—By H. W. & C. SPELMAN.	
Hennstead, Norfolk.—Manor House and Heath Farms, 371 acres, including two Manors	45,872
July 6.—By H. W. & C. SPELMAN.	
Brundall, Norfolk.—Banks of the Yare Estate, 76 acres, f.	8,100
By GRIMLEY & SON.	
Bordeley, Warwick.—1 to 11 (odd), Carlton rd., u.t. 76 yrs., s.r. 17 <i>l.</i> 14s., w.r. 9 <i>l.</i> 11s., Lifford, Worcs.—Lifford Cottages and Wharf, f. Hundsworth, Staffs.—248 and 249, New Johnston, West, u.t. 25 yrs., g.r. 10 <i>l.</i> 10s. 10d., w.r. 4 <i>l.</i>	230
July 7.—By ALFRED SAVILL & SONS.	
Passenham, Northants.—Two cottages and pasture, 60 a. 0 r. 16 p., f.	2,430
July 8.—By ALFRED SAVILL & SONS.	
Ingersby, Leics.—Ingersby Old Hall and 449 acres, f.	14,085
By H. W. & C. SPELMAN.	
Great Ryburgh, Norfolk.—Testerton and Ryburgh Estates, 2,068 acres, f.	28,757
July 12.—By SYMPKINSON & ALLEN.	
Llanbedock, Mon.—Mashmar Farm and accommodation land, 238 a. 1 r. 2 p., f.	5,995
By NICHOLAS.	
Westwood, Wilt.—Portion of Westwood Manor Estate, 238 acres, f.	5,286
July 13.—By KNIGHT, FRANK, & BUTLEY.	
Barham, Kent.—Barham Court Estate, 606 acres, f.	18,115
July 15.—By BIDWELL & SONS.	
Elm, Cambridge.—Freehold farm, 113 a. 1 r. 37 p., By T. W. GAZE & SON.	3,770
Fulham Market, Norfolk.—Elm Tree Farm, 64 a. 1 r. 15 p., f. and c.	925
By KNIGHT, FRANK, & BUTLEY.	
Princes Risborough, Bucks.—Stocken and Lane Farms, etc., 242 acres, f.	5,505
Misterton, Leicestershire.—Part of the Misterton Estate, 1,375 acres, f.	21,982

RECENT SALES.—continued on page 116.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

OBITUARY.

Mr. R. Durnell.

Richard Durnell, founder of the firm of R. Durnell and Co., and contractors, established upwards of fifty years ago, and at his residence in Paragon-road, on Wednesday, the 5th inst. Some principal residences and mansions of Durnell and Co. were also erected by Durnell's firm, as were also several public works, and, in addition, the firm successfully executed several large contracts in the north and in the north of England. Durnell served on the directorate of several public companies. The late Mr. Durnell would have completed a year had he lived until the 16th of last month, was a Freemason. For years he served on the old Highway Board, and was superseded by the present authority in 1881. He also served on the Braintree Parish Council, was one of the founders of the poor, and one of the founders of the local schools. The funeral took place at Brasted.

* * It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

BUILDING—continued.

date given at the commencement of each job is the latest date when the tender, or part of the bill, is to be submitted, and is sent in.

DATE. Bedwas, Mon. RESIDENCE.—Erection of a residence. Quantities, on deposit of 10s. 6d. from Mr. James T. Jenkins, M.S.A., architect and surveyor, Porth, Glam.

DATE. Bradford.—REBUILDING.—For rebuilding Albion Dyeworks. Plans with Mr. Holroyd, architect, 55, Tyndal-street, Bradford.

DATE. Bradford.—WAREHOUSE, ETC.—Erection of a mill and warehouse in Valley-road. Plans seen, and quantities from Messrs. Crabtree, architects, York-chambers, Bradford.

DATE. Buckhaven.—HOSPITAL.—For erection of a hospital at Camaron Bridge. Quantities from Mr. W. D. Telfer, Borough Surveyor, Perth, on deposit of 10s. 6d.

DATE. Cardigan.—IMPROVEMENTS, ETC.—Plans and improvements to the Council House. Plans and specifications seen, and particulars from Mr. Geo. Dickens-Lewis, County Engineer, Aberystwyth.

DATE. Chadderton.—TOWN HALL, ETC.—Erection of proposed Town Hall and Public Library. Quantities on deposit of 10s. 6d. from Messrs. Taylor & Simister, architects, Oldham.

DATE. Chesterfield.—ADDITIONS.—Alterations and additions to the Market Hotel. Mr. Wilcockson, architect, Chesterfield.

DATE. Conway.—HOUSE.—Erection of a house. Plans and specifications seen, and particulars from Messrs. Richard Davies & Son, Licensed Architects, Bangor.

DATE. Leeds.—HOUSE.—Erection of a house. Plans and specifications seen, and particulars from Messrs. J. E. Stocks, architects, 4, New, Leeds.

DATE. Little Dunham.—COTTAGES.—Erection of two cottages on the main road to Swaffham. Plans and specification from Mr. C. H. Swaffham, Norfolk.

DATE. Rhymney.—HALL.—Erection of a hall. Plans and specifications from Mr. J. Llewellyn Smith, M.S.A., architect, Glam.

DATE. Stockport.—SCHOOL.—Alterations to the Council School. Quantities from Mr. Arthur Lawton, Secretary to Education Committee, Town Hall, Stockport.

DATE. Totnes.—ADDITIONS, ETC.—Alterations and additions to the Totnes Post-office. Plans and specifications from Mr. W. G. G. architect, Paignton.

DATE. Walker.—VILLAS.—Erection of a semi-detached villas. Plans and specifications from Mr. J. V. F. Smith, M.S.A., architect, Merton-chambers, 1, High-street, Newcastle-on-Tyne.

DATE. Watford.—PREMISES.—New premises in Queen's-road. Plans and specifications with, and quantities from, Mr. J. Ayres, architect, 6, The Parade, High-watford.

DATE. Whittington.—ADDITIONS, ETC.—Alterations and additions to the Whittington Council School. Plans, particulars, and quantities from Mr. W. A. Derbyshire, architect, 4, Gluman-gate, Chesterfield.

DATE. Whitton.—SCHOOL.—Alterations to the Council School. Quantities from Mr. Arthur Lawton, Secretary to Education Committee, Town Hall, Stockport.

DATE. Totnes.—ADDITIONS, ETC.—Alterations and additions to the Totnes Post-office. Plans and specifications from Mr. W. G. G. architect, Paignton.

DATE. Walker.—VILLAS.—Erection of a semi-detached villas. Plans and specifications from Mr. J. V. F. Smith, M.S.A., architect, Merton-chambers, 1, High-street, Newcastle-on-Tyne.

DATE. Watford.—PREMISES.—New premises in Queen's-road. Plans and specifications with, and quantities from, Mr. J. Ayres, architect, 6, The Parade, High-watford.

DATE. Whittington.—ADDITIONS, ETC.—Alterations and additions to the Whittington Council School. Plans, particulars, and quantities from Mr. W. A. Derbyshire, architect, 4, Gluman-gate, Chesterfield.

DATE. Whitton.—SCHOOL.—Alterations to the Council School. Quantities from Mr. Arthur Lawton, Secretary to Education Committee, Town Hall, Stockport.

DATE. Totnes.—ADDITIONS, ETC.—Alterations and additions to the Totnes Post-office. Plans and specifications from Mr. W. G. G. architect, Paignton.

DATE. Walker.—VILLAS.—Erection of a semi-detached villas. Plans and specifications from Mr. J. V. F. Smith, M.S.A., architect, Merton-chambers, 1, High-street, Newcastle-on-Tyne.

DATE. Watford.—PREMISES.—New premises in Queen's-road. Plans and specifications with, and quantities from, Mr. J. Ayres, architect, 6, The Parade, High-watford.

DATE. Whittington.—ADDITIONS, ETC.—Alterations and additions to the Whittington Council School. Plans, particulars, and quantities from Mr. W. A. Derbyshire, architect, 4, Gluman-gate, Chesterfield.

DATE. Whitton.—SCHOOL.—Alterations to the Council School. Quantities from Mr. Arthur Lawton, Secretary to Education Committee, Town Hall, Stockport.

diameter cast-iron piping and tracks, and a quantity of valves, with casements and covers, together with other relative materials and works. Plans and specification seen, and quantities from Messrs. George Gordon & Co., civil engineers, Inverness, on deposit of 10s. 6d.

August 3. Tiverton.—BRIDGE.—For widening the bridge over the River Lowman. Plans and specifications with, and quantities from Mr. J. R. Siddalls, Borough Surveyor, Town Hall, Tiverton.

August 5. Wallaseid.—BRIDGE.—Erection of a ferro-concrete bridge over the Wallaseid Burn. Conditions of contract at the Borough Surveyor's Office, Town Hall, Wallaseid. Deposit of 10s. 6d.

August 15. Erith.—WIRE FENCING.—The London C.C. invite tenders for wire fencing to approach road to Crossness Precipitation Works (in the parishes of Plumstead and Erith). See advertisement in this issue for further particulars.

No DATE. Bishop Auckland.—HEATING.—For fitting heating apparatus in church and school. Plans and specifications from Mr. Joseph Henderson, Tindale-crescent, Bishop Auckland.

FURNITURE, PAINTING, MATERIALS, ETC.

July 29. London.—PAINTING, ETC.—Cleaning, painting, and repairing at the Eastern Fever Hospital, Homerton-grove, Homerton, N.E., and at the head office, Victoria-embankment, London, E.C., for the Metropolitan Asylums Board. Specifications by Mr. W. T. Hatch, Engineer-in-chief, Specification and quantities at the office of the Board, Embankment, E.C., on deposit of 10s. 6d.

July 31. Bridlington.—PAINTING.—For painting and distemping interior of Bridlington Grammar School. Specifications at the school.

July 31. Doncaster.—PAINTING.—For painting interior of the Market Hall. Specification from Mr. F. O. Kirby, Borough Surveyor, Mansion House, Doncaster.

July 31. Mereworth.—PAINTING, ETC.—For painting and repairs at the Mereworth Council School. Specifications, the Committee's Architect, Mr. W. H. Robinson, Caxton House, West-minster, with Miss K. Morton, West Pavilion, Mereworth, Castle, Maidstone.

August 1. Dundee.—PAINTING.—For painting at King's Cross Hospital. Specifications seen, and quantities from Mr. J. Thomson, City Engineer, 91, Commercial-street, Dundee.

August 1. Epsom.—PAINTING, ETC.—For whitewashing, painting, varnishing, etc., at the Workhouse. Specification at the Workhouse.

August 2. London.—CLEANSING.—For cleansing wards, etc., at Infirmary, High street, Homerton, N.E. Specifications at the Guardians' Offices, Sydney-road, Homerton.

August 2. London.—PAINTING, ETC.—For painting, cleansing, and repairs at branch school, 2628, Lower Clapton-road, N.E. Specification seen, and particulars from Mr. F. J. Smith, architect, Parliament-mansions, Victoria-street, S.W.

August 3. Carrickfergus.—PAINTING, ETC.—For painting outside of Town Hall, painting railings and public lamps. Specification at the Town Hall. Mr. D. Law, Clerk, Town Hall, Carrickfergus, Ireland.

August 3. Coope.—PAINTING.—For painting wood and iron work at the fire station and cottage. Particulars from the Town Surveyor.

August 5. Sunderland.—PAINTING.—For painting the Borough Sanatorium. Specifications seen, and form of tender from the Borough Surveyor, Town Hall.

August 5. Weymouth.—PAINTING.—For cleaning and painting at various schools. Particulars from the Borough Surveyor, Municipal Buildings, Weymouth.

No DATE. Cardigan.—For painting the Council schools. Specifications seen, and particulars from Mr. Geo. Dickens-Lewis, County Architect, Aberystwyth.

No DATE. Peterborough.—PAINTING.—For painting at the Crownwell-road and the Lincoln-road schools. Particulars from the City Surveyor, Broadway, Peterborough.

No DATE. Risca.—PAINTING.—For painting, cleaning, and repairs to the Pontyvaun County School. Particulars from Mr. N. Wade, Newport, Mon.

ROADS, SANITARY AND WATER WORKS.

July 29. Uttoxeter.—SEWERAGE.—For construction of glazed pipe sewer. Plans and specification seen, and quantities from Mr. J. R. Hadfield, Surveyor, Town Hall, Uttoxeter.

July 31. Brierfield.—STREETS.—For private street works. Particulars from Mr. B. Halsehead, Surveyor, Town Hall, Brierfield.

July 31. Barby.—PAVING, ETC.—For flagging, etc., in Victoria-road and Water-street. Plans and specifications seen, and quantities from the Surveyor's Office, Colne-road, Barby.

August 1. Ormesby.—WHITESTONE.—Supply of whinstone and whinstone chips. Conditions seen, and form of tender from Mr. Chas. Hearder, Surveyor, High-street, North Ormesby.

August 1. Brownhills.—SEWAGE WORKS.—For laying mains, etc. Plans and specifications seen, and particulars from Mr. J. H. Shaw, Surveyor's Office, Public Buildings, Brownhills.

August 1. Epsom.—SCREEN.—For laying about 5,000 sq. yds. of granite tar macadam at East-street. Particulars and form of tender from the Surveyor to the Council, Mr. Edward R. Capon, Bromley Hurst, Church-street, Epsom.

August 1. Fyde.—PIPES.—Supply and delivery of cast-iron pipes and specials. Specification and quantities from Mr. J. Cook, Engineer, Sefton-street, Blackpool.

August 2. Luddenden.—PAVING, ETC.—For the excavating, draining, concreting, and paving with granite setts a portion of roadway. Plans and specifications seen, and quantities from Mr. F. Clayton, Surveyor, Council Offices.

August 2. Pontypool.—ROAD.—Construction of roadway, pipe sewers, inspection chambers. Specifications from the Surveyor to the Council at his offices, Town Hall, Pontypool. Deposit of 10s. 6d.

August 3. Didsbury.—STREET WORKS.—Drainage, kerbing, flagging, and cinderling. Plans, sections, and specifications seen, and quantities from the Surveyor to the Committee, Town Hall, West Didsbury.

August 5. Berkhamstead.—DRAINAGE.—For drainage, etc., at the Workhouse. Plan and specification at the Workhouse.

August 5. Greenford.—PLINTS.—Supply of chalk flints. Form of tender from Mr. W. H. Read, F.S.I., Surveyor, The Avenue, West Ealing.

August 7. Falmouth.—ROADS.—For making good roads. Plans seen, and specification and quantities from Mr. J. S. Walton, Borough Engineer and Surveyor, Municipal Offices, Falmouth.

August 9. Surbiton.—SEWAGE.—For sewerage and sewage disposal works. Drawings and specification, quantities, and form of tender from the Surveyor to the Council, Mr. Henry T. Mather, Council Offices, Ewell-road. Deposit of 10s. 6d.

August 14. Dumfries.—SEWERAGE.—Construction of sewers and sewage purification works at Kirkcubbin. Plans seen, and quantities, on deposit of 10s. 6d. from the engineers, Messrs. Crouch, Hogg, & Easton, C.E.E., 14, Blythwood-square, Glasgow.

August 15. Lincoln.—ROADS.—For road-making, sewage disposal, etc., at the Elkesley Pumping Station. Specification and quantities from the Engineer, Mr. Neil McK. Barron, Waterworks Engineer, Lincoln. Deposit of 10s. 6d.

August 17. Shrewsbury.—PIPES.—Supply of cast-iron pipes. Specification and quantities, on deposit of 10s. 6d. from Mr. W. Chapple Eddowes, Borough Surveyor and Waterworks Engineer, Borough Surveyor and Waterworks Engineer's Office, The Square, Shrewsbury.

August 24. Essex.—ROAD.—For making-up Theydon Park-road, Theydon Bois. Plans and specification seen, and quantities from Messrs. Tooley & Foster, surveyors, Buckhurst Hill. Deposit of 20s. 6d.

August 24. Theydon Bois.—MAKING-UP ROAD.—The Epping R.D.C. invite tenders for making-up of Theydon Park-road, Theydon Bois, Essex. See advertisement in this issue for further particulars.

No DATE. Cardiff.—NEW ROAD, ETC.—For new road and drainage works at Inglesfield-avenue, The Heath Estate, Mr. J. A. Sant, architect and surveyor, St. John's-square, Cardiff.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
OF WORKS	Southall-Norwood U.D.C.	3l. 3s. per week	Aug. 4

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
CONTRACTOR'S PLANT & STOCK IN TRADE. GRANTHAM.—On the Premises	Escribt & Barrell	Aug. 1
CONTE'S STOCK, PLANT & EFFECTS. SOUTHEND.—On the Premises	W. Smith	Aug. 1
FLBE'S STOCK, PLANT, ETC., LITTLE JAMES-ST., W.C. On the Premises.	H. W. Smith	Aug. 3
OLD PROPERTY, HANTS	James Harris & Son	Sep. early date

Per gallon.

HALFWAY.—For proposed new Council school at Halfway, near Llanelly.		Mr. W. Vincent Morgan,
County Architect, County Offices, Carmarthen:—		
G. Mercer.....	£3,647 0 0	W. Morgan £3,528 15
T. & J. Brown	3,633 0 0	B. Howell &
Rees Davies	3,542 10 0	Son, Ltd.,
		Llanelly* 3,520 0

TO CORRESPONDENTS

KEIGHLEY.—For erection of a new school, for the Education Committee, Mr. A. P. Harrison, M.S.A., architect, 136, Highfield-lane, Keighley:	
Jotas & Co., H. V. Robinson, Ltd.,	£810 0 0
Messrs. H. V. Robinson, Ltd.,	2,520 0 0
Keighley*	387 0 0
Pain & Thrupp, Cononley	231 0 0
Plasterers: C. P. Brierley, Keighley*	218 2 11
Painter: E. Thompson, Keighley*	26 10 7
Windows: Chadcock Ventilation Co.*	225 10 0
Heating: Bailey & Clapham, Ltd., Keighley*	130 18 0
Architect's estimate, £4,800. 1.	

responsibility of signed articles, letters, and
had at meetings rests, of course, with the

KING'S LYNN.—For construction of a picture-			
theatre. Mr. F. Burdett Ward, M.S.A., architect,			
8, South Brink, Walsbach. Quantities by the architect:—			
W. W. Barnes		Williamson & Son	41,439 12s
& Co	£1,650 0	F. S. Dickerson	1,300 0
W. F. Smith	1,650 0	F. & S. Dickerson	1,285 0
Ives & Son	1,400 0	Read & Wildbur	1,285 0
Hall & Lawson	1,360 0	Dye & Allen	
Parren & Son	1,350 0	King's Lynn*	1,284 0
Tash & Langley	1,330 7		

TENDERS.

KING'S NORTON.—For erection of a lodge. Mr.	
Ambrose W. Cross, Engineer and Surveyor to the	
Council, 23, Valentine's-road, King's Heath.	
A. S. Bowden	£58 8
H. Morgan	549 11 9
A. Curson	530 0
J. Dawson	513 11 5
C. Robinson & Son	495 18 2
W. Roe	£454 10 0
W. T. Ingram & Sons, Bourn- brook, Bir- mingham*	449 15 0

CHESHAM. For erection of

LLANON.—For the erection of a police-station, for the County of Cardigan. Mr. David Davies, architect, Mynyhyd, Felinbach:—

L. Davies & Son	£793 0
Edwards & Davies	674 10
J. J. Edwards & J. Evans, Queen-street, Aberystwyth*	626 0

CROYDON. For constructing in concrete the walls and channels of a new contact bed. Mr. R. M. Chart, surveyor to the Council:

LONDON. For alterations, etc., at Nos. 1 and 35, Moor-lane, E.C., for Messrs. Merritt & Hatchor, the Mr. Arthur C. Russell, M.S.A., architect, 13, Basinghall-st., E.C., for alterations by Messrs. Andrews & Read, 13, Basinghall-st., E.C.,
 J. H. Holloway £1,547 J. Greenwood, Ltd. £1,280
 J. Marsland & Sons 1,573 T. D. Leng 1,129
 F. W. Wood 1,165

LONDON. For the Ada Lewis Lodging House, Women, New Kent-road, S.E. Messrs. Joseph Smithen, architects and surveyors, 83, Queen-street, E.C.,
 Hugh & Hill £23,940 J. Marsland & Son £22,561
 J. Curmischall 23,460 C. Wall, Ltd. 22,260
 J. Gurrett & Son 23,547 Holiday & Green 22,069
 J. W. G. Jackson 23,547 W. Wood 22,073
 P. G. Minter 22,879 W. Lawrence 21,413
 W. Gals & Sons 22,743

Stephens	£325 0	W. Bayliss.....	£200 0
E. Chandler ...	238 0	W. F. Blay, Ltd.,	
Bevan	208 0	Dartford.....	194 15

LONDON.—For construction of footpaths on "Whitbread Hill Farm" Estate, Tottenham, Messrs Stanley Palmer & Sons, surveyors, 816, High-road, Tottenham.

W. Griffiths & Son	£ 256 14 6	
E. Knifton	£ 256 14 6	
Grounds & Newton, Tottenham*	247 15 11	

LONDON.—For the structural improvements to the Peckham park School, Peckham, for the London County Council.

W. Smith & Son	£15,316	McLaughlin &	£13,440
W. Smith & Son	14,568	Harvey, Ltd.	13,140
W. Akers & Co.		J. D. M. Patrick	13,151
Ed. J. Appley & Sons	14,195	E. Lavance	13,070
J. Appley & Sons	14,152	Sons, Ltd.	12,816
J. Garrett & Son	14,145	Hobday & Green-	
Kirk & Randall	13,979	wild	
Ed. J. Appley & Sons	13,951	Longborough-	
W. Johnson & Co.	13,477	park Works,	
H. J. & G. Cowley	13,458	Bruton	12,190

The Architect's estimate, comparable with the tenders, is £12,632.

S. L., Adelphi Terrace-house, Adelphi, W.C. :-		
E. Turner & Sons	£17,524	17 2
Higgs & Hill, Ltd.	16,798	0 0
J. Parnell & Son	16,497	0 0
Wm. Thornton & Sons	16,279	0 0

LONDON—For repairs to the paving of Blackwall and Greenwich Tunnels, for the London County Council

..... Peters	£686 8 7
W. H. Wheeler & Co., Ltd.,	606 19 8
J. Mowlem & Co., Ltd.,	581 0 0
G. J. Anderson, Poplar, E.,	580 11 8

[The estimate of the tenderers is £250.] comparable with the tenderers, is £250.]

LONDON—For electric lighting at the Stoke Newington Fire Station, for the London County Council.—

Lund Bros. & Co.,	£239 0 0
Waring & Withers	214 0 0
W. J. & S. Lloyd,	214 0 0
E. Lawrence & Sons, Ltd.,	185 0 0
Footo & Milne, Ltd.,	176 12 2
W. J. Fryer & Co., Barkington Works,	169 15 8

LONDON.—For electric-light installation at the Shadwell Fire Station, for the London County Council:—
 Tredegar & Co., £290 4 0
 G. Harland Bowden & Co., 280 0 0
 E. Newbald & Co., 236 0 0

Tilley Bros., £206 9 0
 Ltd., Kingsway House, W.C., 202 15 9

LONDON.—For installation of electric light at the Keenington Fire Station, for the London County Council:—
 J. Bryden & Sons, £314 0 0
 Fincham & Walton, 287 12 6
 Tilley Bros., 269 15 0
 [The Chief Engineer's estimate, comparable with the tenders, is £260.]

G.E. Taylor & Co., £269 15 0
 W.J. Fryer & Co., 242 18 0
 S.E. & Sons, 229 0 0

LONDON.—For extending to the roof-playground the boys' staircase at the Hagreave School, Bethnal Green, for the London County Council:—
 J. Grover & Son, £676
 McCormick & Sons, 618
 C.R. Price, 583
 Brand, Pettit, & Co., 575
 J. Stewart, 363
 W. Lawrence & Son, £561
 Ltd., 539
 Stevens & Sons, 404
 33, Crouch-hill
 [The Architect's estimate, comparable with the tenders, is £484.]

W. Lawrence & Son, £561
 Ltd., 539
 Stevens & Sons, 404
 33, Crouch-hill

LONDON.—For enclosing, draining, and tar-paving land adjoining the County Secondary school, Stockwell, for the London County Council:—
 J. Ford & Sons, £873
 W. V. Good, 845
 H. H. Hollingsworth, 787
 Lathby Bros., 763
 W. Hammond, 755
 Rice & Son, 735
 H. King & Son, 728
 J. Garrett & Son, £707
 Laphorne & Co., Ltd., 700
 H. Essey & Sons, Ltd., 687
 W. A. King, Melbourn-square, 677
 [The Architect's estimate, comparable with the tenders, is £700.]

J. Garrett & Son, £707
 Laphorne & Co., Ltd., 700
 H. Essey & Sons, Ltd., 687
 W. A. King, Melbourn-square, 677

LONDON.—For construction of the substructure of the new County Hall, for the London County Council:—
 J. Carmichael, £84,587
 F. & H. Higgs, 62,313
 H. L. Holloway, 59,998
 Holland & Hansen, 59,515
 G. E. Wallis & Sons, Ltd., 59,485
 Higgs & Hill, Ltd., 57,668
 Foster & Dickson, Ltd., 54,526
 Kirk & Randall, 54,000
 [The Architect's estimate, comparable with the tenders, amounts to £56,000.]

H. L. Holloway Bros. (London), Ltd., 51,720
 Leslie & Co., Ltd., 52,639
 Holloway Bros. (London), Ltd., 51,720
 C. Wall, Ltd., 47,738
 E.C., 47,738

LONDON.—For erection of a cooking centre at the Hungerford-road School, Islington, for the London County Council:—
 Treasure & Son, Ltd., £998
 J. Stewart, 821
 McCormick & Sons, Ltd., 906
 Thomas & Edge, 872
 L. H. & R. Roberts, 872
 G. S. S. Williams & Son, 860
 Stevens & Sons, 859
 W. Reason, £840
 G. Neal, 786
 P. & T. Thorne, 784
 McLaughlin & Harvey, 750
 E. Lawrence & Sons, Ltd., 704
 City-road
 [The Architect's estimate, comparable with the tenders, is £770.]

W. Reason, £840
 G. Neal, 786
 P. & T. Thorne, 784
 McLaughlin & Harvey, 750
 E. Lawrence & Sons, Ltd., 704
 City-road

MIDSOMER NORTON (Somerset).—For the erection of house and shop at Westfield, for Mr. H. Selway, Mr. William F. Bird, M.S.A., architect, Midsomer Norton:—
 J. C. Badman & Co., £358
 S. Smith, 323 15
 O. C. G. Tovey, Mid-somer Norton, £322 10

O. C. G. Tovey, Mid-somer Norton, £322 10

MOSSLEY.—For the erection of Milton Council School, for the Mossley Education Committee, Mr. F. Quastrey Farmer, architect, 39, Sir Thomas-street, Liverpool:—
 W. Batley & Son, Micklehurst, Mossley, £5,741

OXFORD.—For the erection of a dwelling-house in Woodhurst lane, for Mr. S. G. Cunningham. Mr. Albert W. Venner, M.S.A., architect, Redhill:—
 Brazer & Son, £1,295
 Williams & Sons, 1,375
 Alcorn & Son, 1,143
 North Downs Building Co., Ltd., 1,131
 J. P. Cook, £908
 Head Bros., 899
 G. Martin, Redhill, 870

J. P. Cook, £908
 Head Bros., 899
 G. Martin, Redhill, 870

PEASDOWN ST. JOHN (Somerset).—For the erection of a village hall and rifle range, for Mr. E. Keel, Mr. William F. Bird, M.S.A., architect, Midsomer Norton:—
 W. Webb, £289 0 0
 G. & A. Ashman, 658 7 6
 Coles Bros., Peasdown St. John, £640 0 0

ROTTINGDEAN.—For repairs to groyne, for Newhaven Rural District Council, Dr. J. S. Owens, engineer, 47, Victoria-street, Westminster, S.W.:—
 Holloway Bros., Belvedere-rd., London, S.E., £173 6 3

SLEAFORD.—For the erection of new cells, etc., at police-station, Mr. J. Clare, County Architect, Sleaford:—
 J. W. Sharp & Son, £1,040 0 0
 W. H. Maxey & Son, 1,020 0 0
 Walhead Bros., 829 17 6
 J. Banks & Son, Sleaford, 845 17 7

STRAND-ON-THE-GREEN.—For the renovation of schools, Strand-on-the-Green, for the Chiswick District Council:—
 H. Fowler, £138 14

SWANSEA.—For erection of additions to the electric power station, Mr. Glendinning Moxham, architect, 13, Castle-street, Swansea:—
 R. Billings & Sons, Swansea, £3,987 10

WALTHAMSTOW.—For the renovation of the interior and exterior of the Chapel End Schools, for the Walthamstow Education Committee, Mr. H. Prosser, M.S.A., Architect to the Committee:—
 Contract No. 1, for Three-Floor Block.

A. G. Barton, £496 0
 F. E. McBride, 380 7
 Webb & Co., 348 0
 Stephens & Sons, 338 0
 D. W. Lucas, £330 0
 J. F. Penn, 305 15
 Hammond & Son, 305 15
 Romford, 273 10

Contract No. 2, Infants' Block.
 Willett & Son, £150 0
 A. G. Barton, 142 0
 F. E. McBride, 129 16
 J. F. Penn, 107 5
 Stephens & Sons, 106 0
 D. W. Lucas, £100 0
 Hammond & Son, 98 5
 J. Sands, Walthamstow, 98 0
 Webb & Co., 98 0

WOOLWICH.—For office extension work at the Workhouse, Plumstead, Messrs. Church, Quick, & Whinnop, architects, Woolwich. Quantities by architects:—
 Stephens & Son, £305
 Proctor & Son, 290
 F. & G. Foster, 289
 Douglass, 289
 Sanford, £268
 Thomas & Edge, 208
 C. J. Arnold, Woolwich, 243

WILMINGTON BIRCHWOOD.—For Council for Kent Education Committee, Mr. W. Robinson, M.S.A., architect:—
 Abbott & Charlton, £3,600 5 8
 A. J. Buckingham, 3,004 0 0
 S. R. Spinner, 2,800 0 0
 S. E. Moss, 2,800 0 0
 J. & M. Patrick, 2,773 0 0
 W. T. Burrows, 2,760 0 0
 T. Crossley & Son, 2,750 0 0
 J. Howard, 2,713 0 0
 W. F. Blay, Ltd., £2,713 0 0
 W. J. Norris, 2,713 0 0
 D. Godden & Sons, 2,713 0 0
 Friday & Ling, 2,713 0 0
 G. Bowes & Sons, 2,713 0 0
 C. E. Skinner, 2,713 0 0
 J. Podger & Sons, 2,713 0 0
 Kent, 2,713 0 0

YORK.—For erection of a new battery-room electric-lighting station, Mr. F. W. Spence, Engineer:—
 Messrs. Fairweather & Son, Spence lane, York, £408

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Ltd. (Incorporating the Ham Hill Stone Co. and C. Trank The Doulting Stone Co.).

Norton, Stoke-under-Ham, Somers
 London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallurgical Asphalt Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, war floors, flat roofs, stables, cow-sheds and rooms, granaries, tin-rooms, and for Asphalte Contractors to the Forth Bridge.

SPRAGUE & CO., Ltd., LITHOGRAPHERS AND PRINTER.

Estate Plans and Particulars of Sale prepared and executed.

4 & 5, East Harding-st., Fetter-lane.

JOINERY

of every description and in any kind of wood.

CHAS. E. ORFEUR, L.

ESTIMATES OF APPLICATION.
 COLNE BANK WORKS.
 COLCHES.

Telephone: 6166. Telegrams: "Orfeur, Colchester."

PILKINGTON & CO.

(ESTABLISHED 1838),
 DEPTFORD WHARF,
 190 & 192, CREEK ROAD, DEPTFORD,
 Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.

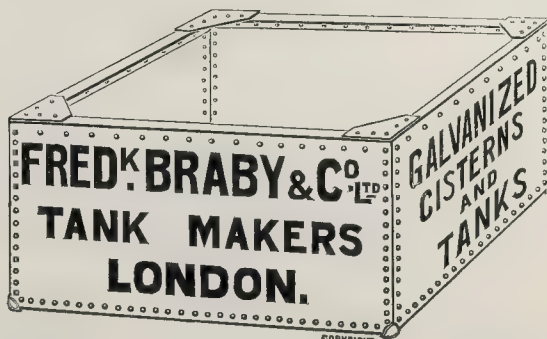
Polonceanu Asphalt

PATENT ASPHALTE AND FELT ROOFING.

ACID-RESISTING ASPHALTE, WHITE SILICA PASTE.

SEYSSSEL ASPHALTE (Direct from the Works).

ALSO AT DEPTFORD,
 LIVERPOOL, BRISTOL.



Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

GLASGOW, FALKIRK,
 BELFAST, & DUBLIN.

THE BUILDER

VOL. CI. No. 3374.

AUGUST 4, 1911.

CONTENTS.

PAGE	PAGE	PAGE	PAGE
PAST SESSION OF THE R.I.B.A. 119	MONTHLY REVIEW OF CIVIC DESIGN (continued) :—	LONDON COUNCILS 146	OBITUARY 146
REPORT QUALIFICATION FOR SURVEYORS 120	SANCTUARIES FOR WILD LIFE (WITH MAP) 136	FOREIGN AND COLONIAL 146	TRADE CATALOGUES 147
REAL (WITH ILLUSTRATIONS) 121	TOWN PLANNING CONFERENCE, WEST BROMWICH	PATENTS 147	SOME RECENT SALES 147
R.I.B.A. RESULTS OF EXAMINATIONS 124	L.C.C. WHITE HART LANE ESTATE, TOTTENHAM:	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ... 148	PRICES CURRENT 150
LECTURAL SOCIETIES 127	VIEW OF TOWER GARDEN FROM THE TERRACE . 137	TENDERS 151	
OLOGICAL SOCIETIES 127	NOTES (WITH ILLUSTRATION) 138		
ROYAL ARCHEOLOGICAL INSTITUTE IN SOUTH	THE BUILDING TRADES :—		
ERS. 130	SOME LEGAL QUESTIONS ABOUT EXTRAS 140		
AL NEWS 131	BUILDING PLANS AND BUILDING PROSPECTS 141		
ITION NEWS 132	LONDON ASSOCIATION OF MASTER STONEMASONS		
SPONDENCE 132	NATIONAL FEDERATION OF BUILDING TRADES		
COMMUNICATION COLUMN 133	EMPLOYERS 141		
IAL SUMMARY 134	GENERAL BUILDING NEWS 142		
ING 134	APPLICATIONS UNDER LONDON BUILDING ACTS,		
ORDON COUNTY COUNCIL 134	1894 TO 1909 142		
TO ILLUSTRATIONS 134	PROJECTED NEW BUILDINGS IN THE PROVINCES		
	WESTMINSTER CITY COUNCIL 141		
	METROPOLITAN WATER BOARD 144		
	MIDDLESEX COUNTY COUNCIL 144		
	LEGAL COLUMN 144		
	LAW REPORTS 144		

Illustrations.

THE TEMPLE OF ARTEMIS (DIANA) AT EPHESUS :
RESTORATION OF THE HELLENISTIC (IVTH CENTURY B.C.)
STRUCTURE, MR. ARTHUR E. HENDERSON, F.S.A.,
ARCHITECT; MR. G. BATES, SCULPTOR.

CANADIAN BANK OF COMMERCE, MONTREAL. MESSRS.
DARLING & PEARSON, ARCHITECTS.

LE CREDIT FONCIER, FRANCO-CANADIEN, MONTREAL.
MESSRS. COX & AMOS, ARCHITECTS.

THE ROYAL BANK OF CANADA, MONTREAL.
MR. H. COLTON STONE, ARCHITECT.



School for Technical Education, Montreal. (See page 122.)
Messrs. Saxo & Archibald, Architects, Montreal.

THE PAST SESSION OF THE R.I.B.A.

WITH the advent of August there is a momentary lull in affairs architectural, or, at any rate, that aspect of them which comes daily under the head of architectural ics. The work of Committees suspended during the supreme holiday of the year; sessional meetings prorogued until October or November; and the action of movements various kinds remains to all appearance stationary. This cessation of flow of the political hour-glass is, ever, more apparent than real. day-time, in fact, provides much of oil for the political machinery; it provides opportunity for travel, recreation, and reflection: away from the din of mediate affairs the mind becomes more

susceptible of liberal views and more detached; the march of events is observed in something like its true perspective; physical energy is engendered, which makes for clearness of thought, for future steadfastness and progress. And out of the tumult of the busy six or nine months which have sped it enables one to distinguish the factors in the architectural world which have made either for advance or retrogression. It enables one to sum up the cost.

If we cast our mind back for a moment briefly to review the more important events of the past session we find that they arrange themselves under two heads, which we may style, broadly, domestic politics and public politics. We shall speak first of those which bear upon

matters of public importance. The outstanding event of the year under this heading was certainly the holding of the Town Planning Conference. The Institute of Architects has seldom, if ever, intervened so successfully in a matter which was, as it were, just on the threshold of popular interest. And it intervened at the psychological moment; at a moment indeed when the importance of the architect in a movement in which he should have been directly concerned was, if not quite overlooked, at any rate in danger to some extent of being disregarded. So far as the Town Planning movement had a following in this country, it was largely considered as an offshoot of the garden city movement! That is to say, it was looked upon first

of all as a sociological affair, as the means for the amelioration of the conditions of a class of people with small incomes. With that view we are, and always have been, heartily in sympathy. But the position of the architect in the scheme was not regarded as an essential element in its success. He was accepted, no doubt, as a person ultimately to be called in, as a useful man to measure up the site and make things look pretty. The Conference happily had the effect of changing all that; it broadened the basis of the popular view. And in this view we include the attitude of the daily Press, which had usually displayed deplorable unintelligence as to the position of architecture in any matters of the kind. Since last October there have been unmistakable signs of greater enlightenment in this respect. The value of the Conference so far as architecture is concerned was that the subject of Town Planning happened to strike the public imagination; its proceedings obtained wide circulation, and, above all, Town Planning became definitely associated in the general estimation with the work of the architect. Even more than that: we are inclined to believe that the Conference achieved, more or less fortuitously, an aim which has occupied the minds of those who have been concerned for some time in architectural progress. We cannot now cover the ground of the history of architectural politics during the last fifty years or so further than by indicating that there emerged out of what seems in later times to have been the somewhat absurd conflict known as the "battle of styles" a feeling that has gathered strength and conviction in recent years that before there could be a general levelling up in architectural practice there must be some development in the general understanding of architecture as a fine art. For, after all, during the latter half of the Victorian era the Mistress Art was certainly the Cinderella of the arts; the extremely humble sister, for instance, of the "subject" picture and romantic novel. We do not wish to enter into the arena of polemics, particularly in regard to ground of so wide an area, beyond affirming that we consider the absence of any general appreciation of the art of architecture to have been due in a large measure to the archaeological attitude and detachment of the architect himself. However this may be, the Town Planning Conference, in our opinion, had the effect of stimulating beyond the scope of its programme comprehension of an art to which the public were not so much indifferent as of whose scope and possibilities they were largely ignorant. This has been, we think, plainly evident in two recent matters of no less public than architectural importance. We refer to the St. Paul's Bridge and the King Edward Memorial. In each of these instances both the Press and public have realised the importance of the rôle that architecture should play in the development of the various schemes which have been prepared, and Parliament itself went so far in the case of the bridge as to refer back for further consideration the recommendations of the Parliamentary Committee. That the solution of either problem, as it stands, remains far from

satisfactory cannot be attributed to a lack of appreciation of the æsthetic stakes at issue by the unofficial layman. It would almost seem indeed as if opinion were gradually being formed outside official and expert circles in advance of that held by those with whom at present the final decision with regard to City improvements and public memorials rests. And the growth of this opinion was, no doubt, to some extent assisted by the discussions at the Town Planning Conference. This is a healthy sign, and will, we daresay, in the course of time make itself felt at the election of candidates for public bodies. When "the man in the street" once begins to be seriously interested his influence usually counts against the Philistines.

With regard to domestic politics, much of importance has occurred during the past session. The Copyright Bill at present before Parliament, although far from being an ideal measure, protects in its provisions architectural design against unfair piracy; we can only hope that it may not turn out to be a formidable instrument in the hands of the merely litigious person. The foundation of a British Architectural School at Rome has, too, come within closer view, and we wish the scheme every success. It will probably be many years before any organisation equal to that which is in operation at the Villa Medici will be effected, but the mere fact of the existence of the school, even in its initial stages, will give impetus to architectural education. When a distinction equivalent to the Grand Prix becomes the ultimate goal, the blue ribbon of student life in this country, there will, beyond question, be a general enlargement of the student's point of view. He is at present provided perhaps with too many distractions in the matter of bursaries and prizes, which carry equal weight in reward and appreciation. The value of the Grand Prix is that it centralises the aim and ambition of all the most able architectural students in Paris, without limiting the gift for original design, if we may judge by the work carried out in later life by the *anciens pensionnaires* of the Villa Medici. The Board of Architectural Education has during the past year advanced beyond the first stages of its formation, always a difficult time, and is formulating a practical system which will tend to improve the examinations as a test of the architectural qualifications of the students. We say qualifications rather than knowledge, because it is not so much by book learning, by sketching, or by memorising the features of such and such ancient buildings (important as these may be), as by the gift of design controlled by a grasp of the guiding principles of proportion and form that the future of our younger men as architects will depend.

Progress in the Registration movement has for the moment come to a standstill, in consequence of the new Charter which must be obtained by the Institute before any amalgamation with the Society of Architects can occur. There has meanwhile been a large accession in the number of Licentiates of the Institute, and if this class further increases it will operate largely in the same direction as an Act of Registration. We do not

anticipate any difficulty in the case of the Institute securing the approval of the Fellows and Associates for the Charter; but it would be a mistake to recognise that there is a considerable influential body of opinion within the Institute that is opposed to any sale amalgamation with any society—a body of opinion that prefer alliance to incorporation. If this opinion were to prevail in voting it would not necessarily mean a throwback to Registration. In view of the influences outside architecture, will, in any case, be brought to against a Registration Bill, it would carry optimism beyond the limits of practical politics to suppose that the Act of the sort could come into operation before many years of organised opposition. It would be absurd, therefore, to suppose that if, by a hazard of the draw, the amalgamation of the Institute and the Society is blocked, that a joint committee of both bodies could not agree on the principles of a Bill promoting the advance the interests of a common cause. In this event, when the new Statute Book we have a class of Registered architects which would necessarily, in the instance, include many men whose qualifications for practising architecture would be largely negligible, and a further class of men who would be able to add to their status that the law gives them a degree of this or that society. In the case of the Institute, the degree was conferred within the powers of a Charter, supported by a historical tradition which is, among modern architectural corporations of the world, the oldest and best established.

STATUTORY QUALIFICATION FOR SURVEYORS



CONFERENCE which has attracted the attention of the importance of its proceedings was held in

June at the Surveyors' Institution has recently issued its Report.

It was attended by representatives of the Commonwealth of Australia, New Zealand, New South Wales, Victoria, Queensland, Western Australia, Tasmania, Canada, the Ordnance Survey, the Institution of Civil Engineers, and the Surveyors' Institution.

Briefly, the object of the Conference was to examine the possibility of a uniform standard of qualification for surveyors throughout the British Empire. The proposal first emanated from the Government of New Zealand, and was submitted to the Colonial Conference in 1907 a resolution that reciprocal arrangements should be established between examination authorities throughout the Empire, that qualifying tests should be uniform, subject only to further tests as to Acts or regulations. This proposal, after being reported on by the Council of the Surveyors' Institution, was finally adopted by the Colonial Conference.

This eventually led to the official invitation for this year's Conference, and came to the conclusion that the method of procedure was the formation of a Central Board, comprising representatives from the various colonies, and

Institution of Civil Engineers, the Surveyors' Institution, the Ordnance Survey, and the Colonial Office.

The duties of this Board would be:—To peruse the examination papers set in any part of the Empire, and to call the attention of the Government of such part to any which appear to fall below the prescribed standard.

To consider appeals as to the bodies whose examinations might be regarded as exempting from the preliminary stage.

To consider any proposals for improving the working arrangements for reciprocity.

The Conference was of opinion that the position of this Board would preclude meeting frequently, but that the work of its work might be carried out by correspondence, and that meetings, say, in four years would probably suffice. Report also compares the various systems of examination at present in use, suggests the course of training and examination tests that would be generally applicable.

The surveyors may fairly claim that, the proposals of this Conference are, they will be in the forefront of the professions in respect of statutory regulation, for, with a qualification recognised throughout the British dominions they become the peers of any other profession in this respect. We do not fail to appreciate the fact that, as regards the purely scientific profession of surveyor, it is much easier to formulate a satisfactory test of competency than the case of one involving the practice of art, but at the same time the lesson is clear enough: if architects are to obtain official recognition as to their status, it is desirable that such recognition should extend to all English-speaking communities on a basis as uniform in its character as local circumstances will permit.

NOTES.

RIGHT: THE The discussions of Parliament on the Copyright Bill are not at the moment writing brought to a conclusion. It makes interesting reading because of new directions in which the inherent right principle (an artist's right of property in his work for all commercial purposes) will have to be applied—for instance, to gramophone records as well as to architectural design—and because of the great variety of points of view in which the matter may be regarded. There was considerable opposition to the right in architecture, Mr. Joynson Hicks heading the opposition mainly on the ground that it was undesirable, as it would stultify architectural development, and in support of his contention used a letter from Professor Beresford Fox, who regards the new extension to architecture as impossible, or, if possible, useless. Two or three members concentrated on the theme of the endless litigation which must ensue. Mr. Pringle was of opinion that it had never been the practice of the House to legislate on grounds of expediency, that here there was no practical reason, that no architect had suffered or feared complaint.

The Government View. MR. BURNS was hardly up to his usual standard when he said that the reference to authority did not appeal to him at all. "We had been accustomed to do things in this country as we thought proper, and he was going to follow the good old rule"—a sentiment now quite discredited. The Ministerial view, apart from the consideration that we are, in a sense, committed to inclusion of architecture by the decisions arrived at by the Berlin Convention (it is found feasible in Germany), as expressed by the Solicitor-General, is that unless the thing was too difficult to accomplish it was absurd to say that an artistic and original idea, as expressed in a building, if it could be proved, was not a thing for which the architect was entitled to just as much protection as his plans of construction and directions to the builder. Which, having regard to the opening proviso, seems sound. He added further, in order to clear away the misconceptions which sprout on every side, that "It was not always realised that copyright was not the protection of ideas. They could not protect ideas, but the original and artistic form in which the ideas were expressed. Nothing that he was urging on the House in the least prevented a style of architecture, or a mode of arrangement, or a new general view from being reproduced, as it ought to be, with the greatest ease, just as a new kind of poem or picture was constantly reproduced. It was designed to stop the rare but very gross cases of palpable, obvious plagiarism. . . ." We quote from the *Times* report.

The Profession. THE underlying theory of the matter is difficult to arrive at. The way of analogy will hardly bring us to it, because except for devices in the shape of clever plans for little houses, already sufficiently protected (they might even in some cases be patented), the work of an architect has nothing in common with that of a writer or dramatist in this connexion. A certain architect is not likely to be employed because he alone is able to reproduce a feature, when architects are expected to evolve original design and engaged for that purpose. When his work is done his whole monetary direct profit should be gained, whereas the reward of other artists depends on their work being spread and repeated—painters and sculptors, too, as far as copyright is concerned. But what is clear is that the onus of proof will rest with the architect who deems himself wronged, that it will be exceedingly difficult in the eyes of the law and a jury to prove that his work was original in its artistic essence, and further that it is of vast importance that the first few litigants should have an incontrovertible case, to secure which end, and consequent success, official action on the part of the Royal Institute of British Architects might not be improperly used. Granted success at first, and with it the foundation of prestige, legal recognition of the mere existence of individual design, apart from any right of property in it, cannot fail to augment the standing of the profession with the public at large.

Llangollen's Town Planner. WE see that the Llangollen Town Council has received applications for the post of surveyor, rate collector, water inspector, nuisance inspector, and town planning officer. While surveying the town, collecting the rates, and inspecting the water and the nuisances the town planning officer will certainly have a unique opportunity for collecting information for a town-planning scheme. Should he ever find time, in the intervals of his other activities, to prepare a plan for the improvement of Llangollen, at any rate he can rely on the cordial co-operation of the surveyor, the rate collector, and the inspector of water and of nuisances. This is so much to the good, for, as is now generally recognised, town planning is by no means a one-man job.

Presentation to M. Daumet. THE accompanying illustration shows the commemorative tablet presented to M. Daumet by past students of his atelier on the fiftieth anniversary of its foundation. M. Daumet met his old students at Saint-Germain-en-Laye.



Tablet by M. Denys Puech and M. D'Espouy presented to M. Daumet.

(From *L'Architecture*.)

and explained his work in the restoration of the Château there, after which M. Charles Girault made the presentation, and following a few remarks by M. Jausseley the master replied, giving an interesting résumé of his professional career. The intimate relationship and sympathy between master and pupil, one of the most delightful features of the atelier system, is happily illustrated by such an incident as this.

MONTREAL.

MONTREAL, the largest city and principal port of the Dominion of Canada, is situated on an island formed by two branches of the Ottawa River at its junction with the St. Lawrence. This island was first known in the XVIth century, when Jacques Cartier ascended the St. Lawrence from Quebec and discovered an Indian town at the foot of Mount Royal. Champlain, who visited the spot some seventy years later, found this town deserted as the result of intertribal warfare.

The original town of Ville-Marie de Montreal was founded by Paul de Chomedey, Sieur de Maisonneuve for "La Compagnie de Montreal," as the result of religious enthusiasm—an expedition having been fitted out in France for the purpose of founding in America a Kingdom of God upon earth. The first settlement was a fort on the north bank of the river protected by a wooden palisade.

During the early years of its existence it was engaged in a constant struggle with the neighbouring Indians, who, in 1660, overran the whole of the island outside the actual fortifications. In 1670, with a population of 1,500, the town had become the centre of the fur trade with the west, and the starting point of exploring and military expeditions. In 1721 the citadel was built and the wooden fortifications replaced by a bastioned wall and ditch. The position of this wall is now indicated by Fortification-lane, between Victoria-square and Viger-square, from which points it returned to the river-bank.

Montreal was the last town in Canada to be held by the French. It was surrendered by

them in 1760 shortly after the capture of Quebec. At the present day more than half of its population are French, who occupy the eastern part of the town, and do not mix freely with the Anglo-Saxon element. The dividing line geographically is St. Lawrence Boulevard running down to the river from the eastern side of Mount Royal.

In 1809 *The Accommodation*, the second steamship to be built in America, began to run between Montreal and Quebec, and in 1825 the Lachine Canal was opened. The construction of the Champlain and St. Lawrence Railway in 1832, the Grand Trunk Railway in 1852, the formation of the Allan Line of ocean steamships in 1856, and the final completion of the Canadian Pacific Railway in 1886, giving railway communication with the Pacific Ocean, attest the steady growth and prosperity of the city.

Montreal was at one time the seat of the Canadian Government, but, owing to riots in 1849 during which the Parliament buildings were destroyed by the mob, this privilege was taken away and the Government finally placed at Ottawa.

The population in 1800 was about 10,000, by 1850 it had risen to 37,000, and by 1890 to 216,000. It is now probably approaching 500,000, and is growing at the rate of 30,000 per year.

Being situated at the head of the Atlantic Ocean navigation, 1,000 miles inland from the Straits of Belle Isle, and at the outlet of a system of river, lake, and canal waterways extending inland to Port Arthur at the head of Lake Superior, a distance of some 1,200 miles, Montreal is a great shipping centre, and commands the traffic of the north of the continent.

Not content, however, with being a natural outlet for the produce of Western Canada, the city, by reason of its geographical position and waterway facilities, has become the chief port of exportation for the Western States of America and for the grain export business of the continent. It already does more shipping business in seven months of open navigation than is done at San Francisco or Philadelphia during the whole year, and it is now second only to New York in the monthly volume of its trade.

Apart from its shipping and carrying, however, the city is a large manufacturing centre. There are approximately a thousand factories representing a capital investment of \$100,000,000, which support a large working class population, the bulk of whom are French Canadians.

Though not quite of equal antiquity to Quebec, the present condition of Montreal is very different from that of the provincial capital. During the long period in which industrial progress of Canada was stagnant the two cities were in an equilibrium condition, but since the greater of the country has begun to open up Montreal has much more than her neighbour on the flowing tide of the country's general prosperity, and her present rapid increase in population and wealth is phenomenal. Its proximity to New York, Boston, Toronto, and Ottawa by rail makes a convenient central point of observation for the investor and the capitalist, and frequently said that there is no city of the same size in which so many millionaires reside.

The city is placed on the south-east side of the island, and extends for about five miles along the north bank of the St. Lawrence. It is built on a series of terraces sloping from the river to the foot of Mount Royal, a mass of eruptive trap rock breaking through the limestone and rising to a height of about 700 ft. above sea level, a distance of two miles from the river, and dominates the town.

The general idea of the lay-out of the city is a modification of the gridiron system, with the peculiarities of the site. In the part of the city—the original fortified position—the streets are narrow and somewhat tortuous, but in the rest of the city they have greater width and a regular lay-out. The inadequate paving, however, is responsible for a condition of dirt and mud in wet weather which, considering the size, wealth, and importance of the city, is certainly most surprising.

The business centre of the city is by the river, while the principal residential quarters are to the west adjoining the slopes of Mount Royal, the summit of which is preserved as a public park and has been laid out and improved by Mr. F. L. Olmstead.

Montreal seems to be much in need of a general plan for the lay-out of the town to remedy the worst defects of the gridiron system. This need is felt by those interested in the question, and it is probable that in the near future steps will be taken towards this end, as public interest is already beginning to be aroused and schemes are mooted for garden suburbs. Extracts from a recent report by Mr. Olmstead on the lay-out of the city were published in our last *Review of Civic Design*.

The lack of any definite city plan is to be regretted for two reasons in particular. In the first place Montreal, by reason of its comparative antiquity, its site and surroundings, and its large number of ecclesiastical and other public buildings, would, if rightly handled now, acquire an air of distinction not usually to be found in the cities of the American continent. In the second place, Canada during the last few years has grown rich and has now arrived at that stage of national growth when an era of expansion and building development may be confidently anticipated. The rebuilding of large towns to suit the altered conditions



The Canadian Bank of Commerce, Montreal. Entrance to Banking-room.
Messrs. Darling & Pearson, Architects, Toronto.

ness imperative, and in Montreal this has already begun. The buildings erected during the last few years show a decided advance over those they replace, and they possess considerable architectural merit. It is to be regretted, therefore, that this process of rebuilding should be allowed to proceed in a haphazard manner without any general preconceived scheme, the need of which is most pressing.

At the present moment, while few of the principal buildings have much architectural merit, a comprehensive scheme could be carried out at a reasonable cost and without any opposition from property owners, it is evident that the longer it is put off the more difficult it will be to avoid the erection of modern buildings of costly and inferior nature.

One of the buildings we illustrate are situated in St. James-street, between

Victoria-square and the Place d'Armes, which is the principal business street of the city. It is noticeable that, although this street is already too narrow for its present requirements—so narrow that it will only accommodate a single line of the street cars that are a feature of the principal thoroughfares of all Canadian towns—yet we find buildings of this size and architectural importance being erected without any apparent provision for the future.

Although Montreal, being the seat of the principal churches, universities, convents, and seminaries of the Dominion, has its full complement of public buildings, yet it so happens that the more recent buildings with which we are chiefly concerned—modern in style and sentiment as well as in date of erection—are mostly commercial; and among the commercial buildings the banks are the most noticeable.

The Bank of Montreal, which was already domiciled in a fine classic building with a portico of Corinthian columns 40 ft. in height, extended its premises seven years ago by building in rear what is proudly pointed to as the finest banking hall in the world, designed by Messrs. McKim, Mead, & White, of New York, and one of the most excellent examples of the severe and "grand manner" of that distinguished firm. The Canadian Bank of Commerce about a year ago opened its new office in Montreal in a building by Messrs. Darling & Pearson, of Toronto, an imposing and well-designed structure, a worthy second to that of the Bank of Montreal. The Royal Bank of Canada, the Eastern Townships Bank, the Bank of Toronto, and the Bank of Nova Scotia are amongst the banks that have recently been trying to excel one another by the splendour and solidity of their buildings.



The Eastern Townships Bank.
Messrs. Cox & Amos, Architects, Montreal.

As Canada is principally engaged in developing her natural resources and building up her commercial prosperity, the banks have a more prominent position in public life than in the case in an older civilisation, and this prominence is fitly expressed in the size and architectural importance of the buildings.

These buildings may be roughly divided into two classes—on the one hand the revenue-producing building erected as a commercial investment, such as the office of the Eastern Townships Bank, the greater part of which is let off as offices, and on the other hand the building erected solely for the use of the bank, such as the office of the Canadian Bank of Commerce.

In both cases the lay-out, disposition, and general appearance of the buildings are naturally governed by these considerations. In the first case the predominance of general office accommodation leads inevitably to the production of a building which is not distinctively characteristic of a bank—which might equally well have been erected by an insurance company or a trust corporation; in the second case the conditions give more scope for characteristic architectural expression and fine monumental design.

The head office of the Canadian Bank of Commerce being at Toronto, it is perhaps a little surprising to see what is after all only a branch office treated with this degree of magnificence, and it might perhaps be considered that the accommodation provided, with its fine suite of rooms on the first floor suitable for board meetings, is really more characteristic of a head office. Indeed, had this been the head office it is probable that, with the exception of a little more accommodation for the headquarters staff, the arrangements and general treatment would have been practically the same.

Be this as it may, the result is a fine monumental building big in scale and broad in treatment, worthily representing, in the commercial centre of the Dominion, the standing of the second largest bank in Canada, and expressing the great value and importance of banking in the present development of the general life of the country.

With regard to the plan of such buildings it may be noticed that the arrangements generally accepted here are reversed. In a building of similar character and size in England the public would probably enter direct into the banking hall, the clerks would be grouped in the centre with the public outside, and the manager placed at the back in a retired position where he would not be readily accessible to the general public.

In Canada the public space is in the centre, and the manager is at the front, easily accessible to everyone. The staff being supervised by the accountant, the manager can devote himself to his customers, and is placed where he can see everyone who comes in and all that goes on at the counters. This arrangement on an enclosed site necessitates placing the banking hall at the back, and leads to a comparatively shallow block of several stories going perhaps to the full height of the street front and screening the hall at the back, so suggesting an interesting architectural problem in the expression of this hall on the front elevation.

In other directions the buildings of the city are being renewed to suit the new conditions of the population. Rents have risen very high owing to the shortness of housing accommodation, but during the last two years much has been done to remedy this, and great suburban districts have been incorporated in the city during the last year. The towns of Outremont and Westmount, separate corporations, practically insulated within the city of Montreal, are chiefly occupied by dwellings of the middle-class.

The School Commissioners are kept busy building new schools and find it difficult to accommodate all the children. Two schools of the largest size are now being completed, and several smaller ones are in course of erection.

In a country whose natural water powers

and mineral resources entitle it to a high place amongst industrial manufacturing communities, mechanics are in demand. The system of apprenticeship is almost a thing of the past. Hence the efforts put forth to furnish schools of technical training represented in Montreal by the School for Technical Education in Sherbrooke-street, which is to be opened in September next. This has been built and equipped by the Government of the Province of Quebec at a cost of something like three-quarters of a million dollars. The Government is to supply \$20,000, and the city \$25,000 annually towards maintaining it. Within its walls are contained pattern-making shop, foundry, machine shop, forge shop, chemical and other laboratories, classrooms, and lecture theatres, besides a separate department for a school of domestic science. The architects are Messrs. Saxe & Archibald, of Montreal. Mr. Alphonse Venne being consulting architect. A view of this building is given with this number. Externally the materials used are a very pale drab brick from Pittsburg and Indiana limestone dressings.

Many new offices and store buildings have been completed within the last two or three years. At the present moment the city bristles with the steel frames of those in course of erection, and those about to arise are being loudly advertised. For these the use of dull-glazed terra-cotta of creamy tone is being introduced in a number of cases, the extension to the Lake of the Woods Milling Company's building, the Royal Bank of Canada in Outremont, the immense Jacob's building in St. Catherine-street, and others being faced externally therewith. The limitation as to height imposed by the city by-laws, which, by the way, are at present under course of revision, is that no building shall exceed ten stories or 130 ft. in height, and this limit has formed the point of arrest of many existing structures. It is even said that some of these have been prepared with substructures, calculated to carry several more stories in the anticipation of a day when this limit may be expanded. This would be a change to be deplored, as many of the Montreal streets are legacies from the bad old times when the town was crowded within a fortification wall and streets were accordingly narrow. In spite of the sparkling atmosphere which is one of the glories of the city ten-story buildings cannot but make such streets, or indeed streets of any width, unnecessarily gloomy, with a corresponding depressing effect on the poor humans cased within them.

The estimated value of the buildings for which civic permits were issued during 1910 was in the neighbourhood of fifteen million dollars, and the indications are that a greater amount of building will take place in 1911. Some of the buildings contemplated are of considerable magnitude and public importance, and we hope to be able to give particulars of some of these in future numbers.

As the eastern port of Canada, Montreal is destined to be one of the three great cities of the Dominion and one of the principal seaports of the Empire, but if she is to be worthy of this high destiny something more will be required than excellence of design in the individual buildings. Fortunately there is every reason to anticipate that her citizens, having once realised the fact that a well-arranged city facilitates business and pays from every point of view, will not be content till Montreal rivals the large American cities in charm and convenience of arrangement as she now rivals them in natural situation and material prosperity.

ST. KEW CHURCH, NEAR WADEBRIDGE, NORTH CORNWALL.

A window, consisting of four lights and tracery, has just been filled with stained glass by Messrs. Percy Bacon & Brothers, of London. The window, which is in the south sanctuary of the church, is treated in the XVth-century style, with rich diaper work on the background.



SPECIAL EXAMINATION LICENTIATES TO QUALIFY CANDIDATURE AS FELLOWS R.I.B.A.

THE question of establishing the Examination required by clause 2 of the Supplemental Charter to be passed by Licentiates, being otherwise qualified, desire to be admitted to Fellowship of the Institute has been for some time under consideration of the Council. The matter having been referred to the Board of Architectural Education, a scheme has been drawn up which received the approval of the Council, and arrangements are in progress for holding examination at an early date.

The candidate will be required to submit for the approval of the Council working drawings of one or more of his executed buildings which may be supplemented by photographs thereof, and by original sketches or measurements of drawings of actual work. Should the work submitted be, in the opinion of the Council, of sufficient merit, the candidate may be exempted from any further examination. Should the work so submitted be, in the opinion of the Council, inadequate, application will not be further entertained. If the drawings submitted are approved by the Council, the candidate will be required to submit himself to an examination, which will be held on the premises of the Royal Institute of British Architects, or elsewhere, as may be appointed by the Council of the Royal Institute.

Ten days before the examination is a list of subjects will be issued to all candidates, and from this list each candidate will be required to select one subject, and announce to the Secretary of the Royal Institute, five days before the examination, the subject he selects. When the candidate attends at the appointed place of examination, he will be furnished with particulars of the selected subject, and he will have to prepare a set of working drawings of the subject and such details as may be required, together with full descriptive notes. The candidate will also be required to write a short report on a subject previously selected by himself and approved by the Council. Ten days will be allowed for the examination of the candidate may be required, at the discretion of the Council, to attend subsequently to an oral examination on his papers. Candidates must provide their own drawing boards and instruments. The fee for the examination will be six guineas, which sum must be paid to the Secretary R.I.B.A., with the candidate's announcement of the subject which he selects. If the candidate fails to pass the examination the fee will not be returned to him, but he will be allowed to sit for subsequent examination without payment of any further fee.

Should a candidate be admitted and he will be qualified, subject to the selection of the Council, for candidature as Fellow.

Should a candidate not be passed by the Council, he will be informed of the fact the names of unsuccessful candidates will be announced or published.

THE SUMMER EXAMINATIONS

The Preliminary.

The Preliminary Examination, held for registration as Probationers R.I.B.A., held in London and the provincial examinations indicated below on June 12 and 13. Of 146 candidates admitted, claims for exam-

sitting were allowed to the number of four, and the remaining 102 candidates examined, with the following results:—

Centre.	Total Examined.	Passed.	Relegated.
London	50	36	14
Bristol	12	11	1
Leeds	8	7	1
Manchester	27	23	4
Newcastle	5	4	1
	102	81	21

passed candidates, with those exempted altogether—are as follows:—

City, Manchester	C. H. L. Kelham, Epsom
Alfred, Leigh, Lancashire	N. Kelley, Lytham
Ashtenden, Canterbury	F. H. Lambert, Lowestoft
Adlin, Sheffield	C. W. Langlands, Epsom
Aspley, Huddersfield	J. A. Lapiere, Oldham
G. Backhouse, W. S. S. Bailey, W. Baldwin, Kent	J. F. Lawson, Cirencestre
Baldwin, Sale	W. A. Ledger, Leeds
Beaverstock, Nottingham	H. A. Lister, Shrewsbury
W. Begley, High Wycombe	A. Lloyd, Swansea
B. Bell, Manchester	J. Logan, Newcastle-on-Tyne
Bonsor, London	E. C. Lomer, Southampton
Bowes, Manchester	S. H. Loweth, Hackney
Brough, Croydon	G. McBeath, Sale
Briggs, Manchester	R. N. H. MacKuller, Glasgow
E. Brinckman, Sunderland	G. M. Mackenzie, Aberdeen
Bucknole, Hants	M. Elgin Macpherson, G. A. Marshall, Canonbury
Bull, Green	A. A. Mather, Manchester
Burnett, Hastings	J. N. Meredith, North Wales
Burnett, Melton	W. A. Morris, Ramsgate
W. Burton, W. Capes, Kensington	A. L. Mortimer, Liverpool
Byrt, Bristol	D. J. Moss, Peckham
Chack, Balham	T. W. Moss, Leeds
Christie, Paisley	B. Newbould, Shipley
Clough, Sheffield	J. Norman, Halifax
Cough, Sunderland	W. R. Owens, Liverpool
McD. F. Cooke, Epsbury	W. G. Parkin, Bloomsbury
D. Cooper, St. George's	L. H. Partridge, Forest Hill
De Crouch, Rottingden	F. B. Percival, Wimbledon
Davies, Weston-super-Mare	R. W. Pickin, Kirby-in-Furness
H.M. Office Works	J. Radcliffe, Oldham
Johnson, Southport	C. B. Ragner, Windsor
Doddington, Stockley	V. Ragunath, Finsbury Park
Edwards-Evans, Birmingham	F. W. Rees, Pontypriid
Evans, Liverpool	E. A. Reeve, Margate
Evans, Fulham	G. C. Ridge, Barnstable
Leigh, Bridge	E. F. Rolfe, London
Farrer, London	G. A. Rose, Wimbledon
F. Foale, West-ern Park	G. Rowatree, Southall
Forster, York	J. N. Rutherford, Harrington
Water, Belfast	L. H. Sacré, Chelmsford
Goodyear, Hythe	J. L. P. Sage, Taunton
G. Gostling, Ware	P. C. Schulte, Islington
M. Graham, New-Grice, Ealing	P. Skelding, Bristol
Grice, Ealing	F. R. Stobart, Newcastle-on-Tyne
R. Griffiths, Car-lingham	E. T. Stythe, Carnarvon
Gush, Taunton	M. C. Swallow, Letchworth
Hall, Leeds	M. B. Taylor, Birmingham
A. Harding, Glas-gow	R. Thornburn, Methil
Hatherrell, Dul-ham	G. J. Trigg, Wickham
J. Hayton, Man-chester	W. M. Tripp, Altrincham
Head, Cricke-wood	G. O. Yenn, Warrington
Keenwood, Bolton	A. Waterlow, Hampstead
Knorr, Stockwell	S. G. Wilson, Manchester
C. Horsley, Emu-rith	G. P. Wineham, Bethel Green
Hamstead	C. A. Wingrove, Beaconsfield
E. Jarvis, Rother-ham	R. G. Worth, Bushey
H. Jenkins, andor	S. Wright, St. Anne's-on-Sea
J. Jones, Cardiff	L. M. Yetts, London
Jones, Llandudno	
D. Jones, Port-land	
L. Jones, Carnar-on	
John, Teacrey	

June 12, 13, 15, and 16; 127 candidates were examined, with the following results:—

Centre.	Total Examined.	Passed.	Relegated.
London	85	37	48
Bristol	15	9	6
Leeds	5	3	2
Manchester	13	4	9
Newcastle	9	6	3
	127	59	68

The passed candidates, given in order of merit as placed by the Board of Examiners, are as follows:—

W. Park, London	W. L. Semple, New-castle
T. A. Page, South Shields	E. Willson, Southport
J. B. March, Somerset	A. S. Burnett, Shaw-ford Down
J. B. Matthews, Cardiff	H. M. Archibald, Paris
B. Donaldson, New-castle-on-Tyne	W. A. Banks, Staf-ford
J. A. Clarke, Man-chester	N. S. Benison, London
R. W. Ferguson, Edin-burgh	G. Bramwell, Leeds
P. D. Bennett, Bir-mingham	T. H. Broomhall, T. Barnsley
P. H. Wyatt, London	C. N. Chard, Bridge-water
T. Chalkley, Ber-mondsey	T. S. Copplestone, London
R. W. Long, Woodford	L. R. G. Errington, Exeter
H. Crone, Hove	Regent's Park
C. W. Craske, East Dereham	E. C. Francis, Haver-stock-hill
L. Y. Harris, Notting-ham	C. W. B. Godwin, Bir-mingham
C. W. Brown, Blooms-bury	J. G. Hands, Kensing-ton
A. L. Freaker, Clap-ton	E. J. Hickman, Bir-mingham
R. McLachlan, Lewis-ham	T. Jenkins, Swansea
H. A. Thomerson, Clapton	C. H. Ledger, Epsom
H. B. Fisher, Brixton	T. E. Legg, Woodford Green
J. E. Marchinton, Shef-field	S. D. Meadows, East Ham
J. H. Odum, Sheffield	H. E. Moore, Rugby
W. Holden, Bishop Auckland	S. Morley, Becken-ham
F. B. Last, Crayford	C. E. Newton, Sheffield
F. Clomes, Weston-super-Mare	R. Nandi, London
R. Phillips, Parsons Green	B. G. Norton, Leam-ington
W. H. Price, Bridge-water	W. E. Terrell, Reading
D. H. Walker, Hull	R. G. R. Topham, Greenwhich
W. Allison, Wanda-sworth	A. E. Townley, Bir-mingham
J. Weinberg, London	R. K. Young, South Kensington
M. M. Love, Derby	

The following table shows the number of failures in each subject of the Intermediate Examination:—

I. Classic Architecture	41
II. Medieval Architecture	47
III. Renaissance Architecture	66
IV. General Questions	48
V. Theoretical Construction	36
VI. Descriptive Geometry	31
VII. Applied Construction	41

Colonial Examination.

The following Candidate passed the Inter-mediate Examination held in Sydney in January last, viz:—

G. S. Keesing, Sydney, N.S.W.

Exemptions from the Intermediate Examination.

The following Probationers, possessing the qualifications required by the regulations, have been exempted from sitting for the Intermediate Examination, and have been admitted as Students R.I.B.A.:—

P. J. Adams, Buck-hurst Hill	C. A. Harding, Glas-gow
P. M. Andrews, London	H. E. Moss, Putney
G. A. Arvin, Surrey	W. R. Owens, Liver-pool
N. M. M. Blomquist, Kensington	I. M. Pritchard, Isle of Anglesey
D. M. Griffin, Birken-head	

The Final and Special.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from June 29 till July 7. Of the 136 candidates examined, fifty-nine passed, and the remaining seventy-seven were relegated to their studies. The passed candidates are as follows, the 'r' prefixed to a name signifying that the candidate entered for the Special Examination, which is designed for architects in practice and chief assistants exempted by the Council from the Preliminary

and Intermediate Examinations, and from sub-mitting testimonies of study:—

M. S. R. Adams, Chis-wick	P. J. Logan, Bristol
L. M. Angus, Hamp-stead	C. W. Long, Stratham
E. E. Barks, Chelsea	W. Lucas, Hammer-smith
P. L. Baxter, London	M. R. Martin, Ealing
H. J. Benians, Goud-hurst	F. E. Mennis, Mile End
W. T. Benslyn, Cam-bridge	H. I. Merriman, Ken-sington
J. A. Bessant, Haver-stock-hill	A. H. Mottram, Hamp-stead
R. H. Bevis, Southsea	G. B. Owen, Hamp-stead
A. G. Blackford, Ealing	T. A. Parker, Lan-cashire
K. S. Broad, Putney	J. W. Paterson, Edin-burgh
B. Brown, Bradford	I. M. Pritchard, Isle of Anglesea
M. Brown, London	H. L. Samson, Streat-ham
J. E. Bullock, Black-neath	B. W. H. Scott, Clap-ham
L. H. Clarke, Harro-gate	C. Swannell, Mus-well Hill
J. C. G. Davies, Glamorgan	F. H. Swindells, Pres-ton
W. F. Davies, Chester	M. J. Tapper, London
C. Davis, Shepherd's Bush	H. Thornton, Dewa-bury
C. A. Edeson, Derby	A. G. W. Tickle, London
A. F. Evans, Prescot	H. West, East Dul-wich
J. Finning, Pinhoe	T. J. Westbye, Prim-rose Hill
T. Garbutt, Brad-ford	A. E. M. Whitehouse, Heaton Moor
B. M. Goodwin, Croy-don	N. Wiggall, Sunder-land
W. S. Gorringe, Sea-ford	L. E. Williams, Purley
G. D. G. Hake, Lam-beth	A. J. Wilson, Pejer-borough
C. A. Harding, Glas-gow	C. R. Winter, Bourne-mouth
G. W. Home, Kensing-ton	H. Wornald, Leeds
T. C. Howitt, Hucks-nall Torkard	C. Wright, London
F. W. Kessley, Redhill	A. M. Young, Wim-bledon
F. W. Knight, Chelsea	
W. Lawson, Gates-head-on-Tyne	
A. D. Leroy, Hackney	

The following table shows the number of failures in each subject of the Final Examination:—

I. Design	57
II. Principles of Architecture	54
III. Building Materials	15
IV. Principles of Hygiene	47
V. Specifications	24
VI. Construction, Foundations, etc.	48
VII. Construction, Iron, and Steel, etc.	52

Election of Licentiate.

At the Council meeting of July 20, the following candidates were elected Licentiate R.I.B.A. in accordance with the provisions of by-law 12:—

F. Abbey, Huddersfield	H. S. de Bertodano
J. S. Adam, Sydney	C. H. Bidulph-Pinchard
N.S.W.	E. F. S. Biram, St Helena
J. M. Alexander, Greenock	P. J. Black
H. W. Allardyce, Ilford	J. F. Blackwell, Ket-tering
F. J. Almond, Man-chester	H. Blagrove
W. J. Almond	W. J. Blain, Glasgow
W. H. Alton	W. W. Blair, Winnipeg
H. Ambler, Leeds	A. W. Blomfield
A. E. Anderson, Mon-treal	R. C. W. Blyth
F. W. Anderson, Bir-mingham	G. A. Boswell, Glasgow
J. Anderson, Well-ington, N.Z.	G. P. Bowie, Van-couver, B.C.
G. Anderton, Man-chester	W. C. Boyd, Glasgow
R. Angell	H. Bragg
T. G. Angell	H. C. W. Bramell, Sheffield
A. Appleby, Sheffield	A. O. Breeds
A. Appleby, Sheffield	G. W. Brennan, Oban
E. Ardley	H. G. C. Brewer
J. Armstrong, Oban	M. M. Bricknell, Gla-morgan
N.B.	T. R. Bridson
J. Arthur, Glasgow	F. Broadbent, Leeds
F. M. Arthur, Glasgow	E. W. Brook-Greaves
W. H. Ashford	A. Brown, Luton
C. J. Ashworth, Winni-peck	A. R. Brown, Man-chester
N. H. Atkins, Fareham	J. Brown, Northampton
H. E. Ayrie, Carlisle	P. E. Brown, Sheffield
E. E. Baker	F. Browne
F. E. Baker, Cardiff	D. Bruce, Glasgow
F. Ball, Nottingham	F. S. Brunton
J. E. Barker	G. R. Bryce
J. Barlow-Smith	A. F. S. Bryden, Glasgow
A. H. Barnes	R. H. Bryson
C. A. Bassett-Smith	W. H. Buck, Montreal
R. B. Batchelor, Car-diff	E. H. Bullock
R. H. Baxter, Rochdale	J. C. Bune
G. G. Beard, Kendal	C. F. Burden, Ontario
N. Beattie, Glasgow	H. S. Burdwood
W. Beatrice-Brown, Edinburgh	H. Burgess
A. F. C. Bentley	J. G. Burgess
E. Bentley, Grimsby	J. E. Burton, Norwich
R. Bentley, White-haven	E. Bush, Preston
F. F. Beaumont, Hali-fax	E. N. Butler, Alberta
	T. Butterworth, Mar-chester

The Intermediate. The Intermediate Examination, qualifying registration as Student R.I.B.A., was held in the undermentioned provincial centres on

- C. V. Cable, Hartley
 Wintry
 J. D. Cairns, Edin-
 burgh
 R. M. Cameron, Edin-
 burgh
 D. W. Campbell,
 Lockerbie
 H. Campbell, Glasgow
 W. T. Campsall, Shef-
 field
 R. Carr
 W. A. L. Carrick,
 Glasgow
 J. Carruthers, Glasgow
 R. Carswell, Glasgow
 T. M. Cassels, Ayr,
 N.B.
 F. Callias
 C. A. Cator, Bulu-
 wayo
 E. Chambers, Goole
 H. G. Cherry
 J. Christie, Shanghai
 J. A. Chubb
 J. J. Clark
 H. F. Clark, Man-
 chester
 W. Clarkson
 T. K. Cobb, North-
 ampton
 J. Cobban, Aberdeen
 M. M. Cook
 J. W. K. Coddington
 J. Collins, Oldham
 W. Constable, Edin-
 burgh
 P. R. Cooke, Johannes-
 burg
 G. Cooper, Rotherham
 G. W. Cooper, Sleaford
 G. D. Copland, Glasgow
 J. N. Cornack, Pot-
 chestroom, Farnval
 G. Cotman, Norwich
 J. S. Courtauld
 C. H. Cousins, Swansea
 H. L. Cowell, Newquay
 G. Craig, Leig
 J. H. Craigie
 A. R. Crawford,
 Glasgow
 F. Greiner
 J. G. Crisp, Chelten-
 ham
 C. Croft, Northampton
 J. B. Cromb, Hamil-
 ton, N.B.
 J. Crossland
 A. E. Cuddy, Liverpool
 A. E. Culpin, Halifax
 T. H. Cunliffe, Man-
 chester
 S. E. Cunningham,
 Pretoria
 H. W. Currey
 M. Cuthbert, Perth
 H. Dan, Glasgow
 A. R. Dannatt
 R. T. Davey, Chatham
 A. Davidson, Cost-
 bridge
 G. Davidson, Bridge of
 Allan
 J. Davidson
 J. Davis, Lincoln
 H. Dawson
 H. Dawson Pearce,
 East London, S.A.
 B. S. Dean, Man-
 chester
 H. Denton, Sandal,
 Wakefield
 A. G. Dewar, Fife
 G. S. De Wilde
 E. C. R. Dibdin
 H. H. Dodd, Dover
 L. S. Dodge, Leeds
 S. Dodson, Peter-
 sborough
 T. G. Donaldson
 Selby
 E. G. R. Downer, New-
 port, Mon.
 W. B. Y. Draper,
 Singapore
 E. Drew, Swindon
 W. Driffield, Knares-
 borough
 A. F. Duncan, Glasgow
 W. L. Duncan, Turriff
 E. E. Duncanson
 W. J. Dunham, Nor-
 wich
 J. G. Dunn, Cambus-
 lang
 E. F. Durlacher
 A. Durst
 D. Dykes, Glasgow
 V. A. Edlin
 F. Ellis, Stonehaven,
 N.B.
 T. B. Ellison, Wake-
 field
 R. K. Ellison, Hunting-
 don
 J. Eltringham, Sunder-
 land
 T. A. Emmett
 E. S. England, Oldham
 H. Smith, Etherington
 G. De L. Evans, Mel-
 bourne
 C. V. Evans, Ponty-
 pridd
 J. M. Evans, Neath
 Glamorganshire
 N. Evans, Southend-on-
 Sea
 W. Fairbairn, Edin-
 burgh
 G. Farquhar
 P. I. Farrer, Salisbury
 J. N. Faskin, New-
 castle-on-Tyne
 F. Penn, Manchester
 W. Ferguson, Glasgow
 E. R. Fern, St. Albans
 W. H. Fleming,
 Wolverhampton
 G. G. Fleming, Pre-
 toria
 F. H. Floyd, Newbury
 A. Forrester, Middles-
 brough
 R. R. Foster, Montreal
 T. J. Fox
 E. Foxall, Carlisle
 J. H. France, Man-
 chester
 H. Frost, Gosport
 A. A. Gagnon, Mont-
 real
 E. S. Gale
 W. W. Gale, Carshalton
 J. H. Gall, Inverness
 J. T. Galletly, Edin-
 burgh
 D. W. Galloway,
 Brechin
 W. Gannon, Petersfield
 E. M. Gannon, Syd-
 ney, N.S.W.
 A. Gardner, Glasgow
 A. Gardner, Gard-
 ner
 G. T. F. Gardner,
 Oxford
 M. T. Garrod
 C. George, Aberdeen
 W. H. George, Chelten-
 ham
 R. C. Ghose, Chin-
 surah, India
 W. G. Gibson, Crawley,
 Sussex
 W. S. Gibson, Coat-
 bridge
 W. E. Gill, Bury
 J. Gillespie, Edinburgh
 J. J. Glendinning,
 Halifax
 F. F. Glennie
 H. Goodman,
 Reading
 H. R. Goodrich
 J. P. Goodair, Falkirk
 B. L. Goodwin, Edin-
 burgh
 F. A. Goelling
 J. H. C. Goelling, Port-
 smouth
 P. H. Graham, Glas-
 gow
 A. Grant, Toronto
 W. A. Grayson, Brown,
 Ontario
 D. P. Green, Bolton
 F. L. Green, Market
 Harborough
 A. Greig, Edinburgh
 G. G. Griffith, Victoria,
 B.C.
 T. H. Griffiths, Stoke-
 on-Trent
 Allan
 K. Griffiths, Port-
 land, Mon.
 K. Grimshaw, Stock-
 ongham
 A. Grove
 R. T. Grove
 A. G. Hagger, Worthing
 D. P. Hall, Edinburgh
 C. R. Hall, Leicester
 C. R. Hall, Congleton
 H. W. Harding, Bristol
 R. R. Harding,
 Leicester
 C. R. Harrison
 R. J. Harrison
 F. Harrison, Leicester
 H. E. Harrison, Bloem-
 fontein
 L. Harrison, Denili-
 quin, N.S.W.
 R. A. V. Harrison
 G. A. Hartley, Oldham
 E. A. B. Hay, Glasgow
 B. Haylor
 J. H. Ector
 D. E. Herald, Alberta,
 Canada
 A. G. Hewitt, Hong
 Kong
 H. Hicks, Broadstairs
 E. J. W. Hider
 A. Durst
 C. H. Higginsbottom,
 Manchester
 C. H. Higgins
 E. Higgins
 T. J. Hill, Manchester
 G. Hindmarch,
 Stockport
 V. P. Hodson
 G. S. Hoffman
 W. J. Hogg, Newcastle
 W. H. Hogg, York
 A. H. Holland, Shef-
 field
 G. E. Holman
 C. D. Holt, Manchester
 P. V. Holway, Sheer-
 ness
 E. F. Hooper, Exeter
 A. J. Hope, Bolton
 W. H. Horsfield, Man-
 chester
 W. Houlter, jun.,
 Nelson, N.Z.
 J. G. Houlter
 F. Howarth, Twyn
 W. H. Howie, Glasgow
 A. J. Hoyland, Man-
 chester
 D. Hucker
 A. Huddart, White
 haver
 E. C. H. Hughes, Wolver-
 hampton
 W. A. Hughes
 E. Hume, Liverpool
 H. S. Hunt
 J. M. Hunter, Montreal
 F. J. Huntington,
 Montreal
 F. A. Huntley, Bristol
 J. Hutton, Kendal
 E. S. Iles
 A. Inglis, Hawick
 H. C. Ingram
 B. T. Irvine, North
 Shields
 S. A. Jackson, Lan-
 caster
 J. B. James
 A. G. James
 J. S. Jarvis, Perth
 J. J. Jenson, Manchester
 J. Jordan, Edinburgh
 J. V. Johnston,
 Londonderry
 J. M. Johnston, Leith,
 N.B.
 F. Jones, jun., Man-
 chester
 R. C. Jones, Blaenau
 Festiniog
 W. A. Jones, Leeds
 S. T. Jordan
 J. W. Juritz, Cape
 Town
 C. J. Kay, Horsham
 C. H. Kempthorne,
 Cardiff
 W. J. Kennedy, Edin-
 burgh
 A. Kent
 J. Kerr, Lanark
 W. E. Kerr
 W. A. Kidd, Glasgow
 G. W. King, Toronto
 J. K. King, Walsley
 H. Kirk, Dewsbury
 W. Kirk, Withyham
 F. L. Klingender, Mel-
 bourne
 H. L. Knapman,
 Northampton
 T. H. Knapman, Koch,
 Hobart, Tasmania
 W. A. Kyle, Durham
 A. E. Lacey
 W. Laird, Glasgow
 W. P. Lambert,
 Alberta, Canada
 J. Langschire, Sheffield
 C. S. Langham,
 Leicester
 W. Langley, Leicester
 F. Lansdown, Edmon-
 ton, Alta
 E. Lavenstein, Johan-
 nesburg
 G. Norman
 J. H. Morris, Godal-
 ming
 H. Nowell, Sheffield
 G. Nussack, Sheffield
 J. P. Ochilvie, Perth,
 N.S.W.
 H. Ogden, Sheffield
 G. B. Oliver, Bath
 B. N. H. Orphoot,
 Edinburgh
 J. B. Orwin, Southend-
 on-Sea
 G. Osborn, Sheffield
 V. G. Osborn, Chip-
 penham
 H. Ovenden, Preston
 C. P. Page, Newport,
 Mon.
 J. Page, Leeds
 F. C. Pain
 B. H. Palmer, Exeter
 E. H. Palmer, Exeter
 F. C. R. Palmer
 A. J. Parker, Leves
 P. Parker, Letchworth,
 Herts
 S. Parker
 G. Paterson, Hamilton
 G. A. Paterson, Glas-
 gow
 W. Patterson
 A. G. B. Paul, Edin-
 burgh
 T. S. Peace, jun.,
 Orkney, N.B.
 E. A. Pearce
 J. H. Peacock,
 Arbroath
 F. Peeden, Montreal
 J. Perrault, Montreal,
 Canada
 M. B. Perry
 S. F. Peters, Winnipeg,
 Manitoba
 J. Peter, Yeovil
 G. S. Phillips
 S. Philpot, Tunbridge
 Wells
 F. J. Pickcock
 W. E. Pinkerton
 P. L. Pittter
 H. S. Porter, Man-
 chester
 H. M. Potter, Worthing
 G. S. Phillips, Prince
 Rupert, B.C.
 W. Potts, Sheffield
 D. Powell, Liverpool
 J. Preece, Pontypridd
 G. D. Macniven, Edin-
 burgh
 A. J. Macrae, Edinburgh
 E. J. Macrae, Edin-
 burgh
 J. C. H. William, Edin-
 burgh
 E. C. H. Maidman,
 Edinburgh
 A. N. Malcolm,
 Grangemouth
 G. W. Manning
 W. C. Miles
 F. J. Manning, New-
 market
 G. F. M. Marriam
 J. W. Marston, Sutton
 Coldfield
 H. W. H. Marston,
 Sutton Coldfield
 G. D. Marwick, Edin-
 burgh
 M. W. Matis
 J. H. May
 J. H. Maybury, Man-
 chester
 R. V. Mayor, North-
 ampton
 E. Meggitt, Sheffield
 J. A. Meikle
 J. M. Miles
 T. A. Miller, Glasgow
 C. G. Miller
 H. W. Morrison, Dianzond,
 Chaudhary Ford
 E. H. Mills, Landlodes
 A. M. Mitchell, Coat-
 bridge
 H. Mitchell, Glasgow
 R. M. Mitchell, Crieff
 B. B. Moffat, Biggles-
 wade, Beds.
 E. E. Mooney, Reading
 R. P. Morgan, Broad-
 W. B. Morris, Bolton
 J. M. Morrison, Edin-
 burgh
 L. A. Morrison, Biggar
 R. B. Morton, Montreal
 H. M. Moye
 D. Murdoch, Wel-
 lington, N.Z.
 S. B. Murphy, Edin-
 burgh
 T. H. Murray, Consett,
 Co. Durham
 A. E. Musto
 H. N. Myers
 H. N. Myersbank
 W. A. Newman
 J. H. Nicholls, Sunder-
 land
 E. C. Nisbet
 B. Nisbet, Edin-
 burgh
 G. Norman
 J. H. Norris, Godal-
 ming
 H. Nowell, Sheffield
 G. Nussack, Sheffield
 J. P. Ochilvie, Perth,
 N.S.W.
 H. Ogden, Sheffield
 G. B. Oliver, Bath
 B. N. H. Orphoot,
 Edinburgh
 J. B. Orwin, Southend-
 on-Sea
 G. Osborn, Sheffield
 V. G. Osborn, Chip-
 penham
 H. Ovenden, Preston
 C. P. Page, Newport,
 Mon.
 J. Page, Leeds
 F. C. Pain
 B. H. Palmer, Exeter
 E. H. Palmer, Exeter
 F. C. R. Palmer
 A. J. Parker, Leves
 P. Parker, Letchworth,
 Herts
 S. Parker
 G. Paterson, Hamilton
 G. A. Paterson, Glas-
 gow
 W. Patterson
 A. G. B. Paul, Edin-
 burgh
 T. S. Peace, jun.,
 Orkney, N.B.
 E. A. Pearce
 J. H. Peacock,
 Arbroath
 F. Peeden, Montreal
 J. Perrault, Montreal,
 Canada
 M. B. Perry
 S. F. Peters, Winnipeg,
 Manitoba
 J. Peter, Yeovil
 G. S. Phillips
 S. Philpot, Tunbridge
 Wells
 F. J. Pickcock
 W. E. Pinkerton
 P. L. Pittter
 H. S. Porter, Man-
 chester
 H. M. Potter, Worthing
 G. S. Phillips, Prince
 Rupert, B.C.
 W. Potts, Sheffield
 D. Powell, Liverpool
 J. Preece, Pontypridd
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field
 J. Thomson, Aird
 J. Thomson, Dun-
 dee
 F. J. Rayner, New-
 barch
 P. W. Reed
 P. Reid, Kirkcaldy
 W. Reid, Glasgow
 N. Rev. Great
 Berkhamstead
 J. Rhodes, Leeds
 J. V. Richards, Crick-
 howell
 L. L. Richards, Wel-
 lington, N.Z.
 W. A. Richards
 J. Richardson
 W. T. Ricketts, Tulsebury
 C. H. Riley, Aylesbury
 G. H. Riley, Accrington
 H. Rimmer, Ormskirk
 H. Robb, Wellington,
 N.Z.
 E. Roberts, Oldham
 A. Robertson, Inver-
 keithing
 A. K. Robertson, Edin-
 burgh
 J. P. Robertson, Johan-
 nesburg, S.A.
 A. J. Roddis
 J. Roddis, Aberdare
 J. H. Rogers
 J. E. Roper, Leicester
 R. T. Ross, Coatbridge
 G. Rowbottom, Staly-
 bridge
 A. Rowley, Bristol
 H. D. B. Rowley
 J. Russell, Oldham
 E. Sage
 H. B. Scott, Glas-
 gow
 W. S. Seaton, Dundee
 B. Sanderson, Bucking-
 ham
 J. Savage
 W. W. Scandlers
 J. Scotland, Airdrie
 A. H. Scott, Paisley
 A. C. Scott
 C. M. O. Scott
 T. H. B. Scott, Wards,
 Shields
 G. A. Sexton
 A. Sharp, Bradford
 E. H. Sharp, Hall
 R. Sharp, Ceylon
 W. Sheen
 R. Sheppard, Wellin-
 gton, N.Z.
 D. Shennan, Montreal,
 Canada
 E. Shennan, Oldham
 G. Simpson, Glasgow
 H. D. Simpson
 J. H. Smith, South-
 ampton
 D. Smith, Dundee
 E. A. Smith
 E. E. Smith, Brisbane
 W. M. Smith, Johan-
 nesburg
 J. S. Snell
 T. Snowden, Hull
 A. V. de Souza, Ran-
 coon, Burma
 V. G. Spangnovics,
 Edinburgh
 H. Spink, Windsor
 T. Stalybrass
 B. E. Stamford
 Beverley
 S. C. Stephens, Bir-
 mingham
 A. Stevens, Exeter
 E. Stevenson, Pretoria,
 S.A.
 J. Stewart, Glasgow
 E. E. Stoke, Bourne-
 mouth
 E. Stones
 E. F. W. Streeter
 D. F. Strong, Pretoria
 W. Stroud
 D. Sturrock,
 Glasgow
 A. Sutherland
 T. Swales, Rangoon
 B. Swales, Perth, W. Austr
 E. J. Swan
 E. J. Swindells,
 Leicester
 W. C. Symes
 D. C. Symes, Grange-
 mouth
 J. Taylor, London
 J. E. Taylor, Man-
 chester
 T. Taylor, Oldham
 T. Taylor, Anfield
 C. O. Durham
 J. C. A. Teather,
 field
 J. W. Thackray,
 H. W. Thomas
 H. Thompson, B
 G. H. Rawcliffe, Shef-
 field

ARCHITECTURAL SOCIETIES.

Royal Institute of the Architects of Ireland.

A special meeting of the Council of this Institute was held on July 26 at 31, South Merrick-street, Dublin, the President, Mr. E. Murray, R.H.A., F.R.I.B.A., in the chair.

Some correspondence was dealt with, including two letters from the Royal Institute of British Architects, which were referred to the Examination Committee and Professional Practice Committee. Mr. J. P. MacGrath, of London, was elected a member of the Institute.

Applications for permission to sit for the Fellowship Examination were under consideration.

A resolution, proposed by the President, congratulating Sir Thomas Manly Deane on having recently conferred upon him by His Majesty, was passed unanimously.

A report was read from the Arts Committee relative to portraits of the Past Presidents.

Nottingham Architectural Society: Visit to Windsor and Eton.

The Nottingham Architectural Society this week selected Windsor Castle and Eton College as the places to visit on their annual summer excursion, and a large party of members and friends joined in the outing on July 27. The Society greatly regretted, owing to family bereavement, the President, Mr. Robert Evans, was unable to join the party, which included Mr. E. R. Sutton, President; Messrs. A. Marshall, W. P. S. W. D. Pratt, W. R. Gleave, F. W. Sperry, R. S. Spencer, W. H. Taylor, S. G. Ker, and the Hon. Secretary, F. M. de la.

Mr. Nutt, the resident architect of the castle, kindly met the Society and personally pointed out the many interesting architectural details. A visit was first made to the quaint timbered horseshoe cloisters built by Edward IV., and then the party went over the curfew tower constructed by Henry III. The chapel contains a peal and clock over 300 years old, and the famous curfew bell; St. George's Chapel, a magnificent specimen of perpendicular architecture, was then fully examined.

The banners and crowns of King George, Queen Mary, and the Prince of Wales, which have been recently added to the White Chapel, were pointed out. With other helms, crests, and banners they form a beautiful and impressive specimen of heraldry. The Royal Mews, which covers an area of 4 acres of ground, are very interesting, containing the semi-State carriages and tilion landaus. The party were then conducted through the State apartments, which contain priceless pictures and magnificent specimens of arms and armour.

A visit was then paid to Eton College, which was founded in 1440 by Henry VI. It is a school for twenty-five scholars, and it is interesting to note that there are now over 100. Through the courtesy of the Provost, the Society were shown the School Chapel, which contains many beautiful memorials of distinguished Etonians; the quaint old dining-hall, with its three fireplaces, iron reading-desk; and the Library, which contains a very valuable collection of books and documents from the time of the foundation of the College.

On return to Windsor was made through the historical "playing fields of Eton," from which the best views of Windsor Castle can be obtained. Mr. Nutt then conducted the party through the Albert Memorial Chapel, dedicated by Queen Victoria into one of the most magnificent memorials ever dedicated to the illustrious dead, and in the crypt of King Edward the Peacemaker is interred. During dinner at Windsor a telegram was received from the President, and a reply sent, the thanks of those present were given Mr. Spencer, to whose exertions the successful programme of one of the most interesting summer excursions of the Society is due.

THE ROYAL ACADEMY EXHIBITION.

It is the intention of the Royal Academy to continue this winter the series of exhibitions by old masters and deceased British artists.

ARCHÆOLOGICAL SOCIETIES.

Surrey Archaeological Society.

This Society held its annual excursion on the 16th ult., when visits were made to Guildford, Woking, Shere, and Albury. The party drove to Great Tangle Manor House, where the members and friends, numbering about two hundred persons, were received by Colonel E. H. Kennard, F.R.G.S., who said that this estate was formerly the hunting ground of the Norman and Saxon kings and had only changed hands by sale three times since the Norman period. Edward the Confessor's daughter married Earl Godwin's son, who was first lord of Tangle at that time, and he lived at the same house. In 1575 it passed into the hands of the then Duke of Norfolk. Afterwards it came into the possession of the Grantley family, Sir Fletcher Norton, afterwards Lord Grantley, buying it while Speaker of the House of Commons. The Grantley family sold the house to Mr. Wickham Flower, and after his death he (Colonel Kennard) bought it. The party next proceeded to Woking, where the church and its restoration were described by the Rev. A. L. Brown, Vicar, from notes supplied by Sir Charles Nicholson, Bart., F.R.I.B.A. The great interest of this building is its state of preservation. The church escaped the risks of repair in the XIXth century. The north wall and part of the chapel were Norman. In 1793 the church was in a ruinous condition, and was then completely transformed at a cost of 600l. The work was well done, and remained in a good state of repair for a century. The church registers dated back to 1533, and were nearly complete.

Mr. Philip Johnston referred to the underground chamber. This was commonly called a crypt, but he had reasons for believing it was an old charnel house, which had been very much curtailed in the alterations which had taken place from time to time. Mr. Ralph Nevill called attention to the old-world cottages at Woking and Shamley Green.

At Farley Heath, Mr. H. E. Malden, M.A., made some remarks on the important Roman remains, ranging from flint arrowheads, scrapers, knives, and tools, to bronze objects, and a cake of copper for making bronzes, and certain bronze brooches and ornaments which had been found. The bronzes are now in the British Museum.

At Shere, Mr. P. M. Johnston said the place had always been a place of importance, and none could beat it in Surrey for those qualities which seem to make up the ideal village. For that and other reasons Shere was a haunt of painters. The church was mentioned in Domesday Book survey, and was second to none in Surrey in antiquarian interest. Some of the materials of which the church was built were possibly derived from Roman buildings on Farley Heath. They saw in this case an exception to the unhappy mistakes of our early church repairers of paring the walls inside and out. What mischief had been done was mostly traceable to the church warden period or even earlier. The plan offered many interesting problems, several of which he proceeded to explain. The font was one of the most beautiful in Surrey and in England. The church is very rich in monumental tombs.

Albury Park and Church were also inspected by kind permission of the Duke of Northumberland, K.G. Mr. P. M. Johnston here described the old church of St. Peter and St. Paul, which he said had been out of use for a great many years. The old disused building was kept up after a fashion, but within the last twenty or thirty years the chancel had become roofless. The most interesting parts of the building were roofed in, and the walls were intact. The tower had a most picturesque dome of melon or pumpkin shape, which was very unusual. The doorway was a foot long.

ALL INDIA MEMORIAL TO KING EDWARD, DELHI.

Sir Thomas Brock, R.A., is commissioned as the sculptor of the colossal bronze equestrian statue of Edward VII., which will be erected upon a red sandstone pedestal between the Jama Masjid and Alexandra Gate, Delhi Fort.

THE ROYAL SANITARY INSTITUTE CONGRESS, BELFAST.*
ENGINEERING AND ARCHITECTURE.

The sittings of the Section of Engineering and Architecture opened on July 26 under the presidency of Mr. W. Kaye Parry, M.Inst.C.E., F.R.I.B.A.

The Chairman, in opening the proceedings, said they must all realize that a great change had taken place in Ireland during the last quarter of a century, and it was a subject of congratulation that, although in the matter of public health administration they were not what they ought to be, and they were not what they hoped to be, yet they could thankfully add that they were not what they were. Having regard to the fact that the population of the country was decreasing, the increased expenditure on engineering work in the interests of public health furnished remarkable evidence of the activity of the sanitary authorities under the Local Government Act.

Town Planning of a Modern City.

Mr. Charles Brownridge, M.Inst.C.E. (Borough Engineer and Surveyor, Birkenhead), in a paper on "Town Planning of a Modern City from an Engineer's Point of View," said many people advocated the taking of workpeople to live further out in the country. If factories and workshops were placed in the suburbs this would be a feasible suggestion, but the ordinary industrial worker desired to live within reasonable distance of his work, and he considered that this was an arrangement which should be fostered rather than deprecated, as it enabled the breadwinner to go home for meals. Where the manufacturer, as at Port Sunlight, Burnesville, Earswick, etc., took his factory or works some short distance out of town, and in conjunction with the manufactory or works dealt with the housing of his workpeople, an ideal condition was achieved; but, as existing conditions would, in most instances, for many important and evident reasons, have to be accepted, it must be their duty, while doing what was possible to ameliorate and reduce any disadvantages arising from such conditions, to so plan and extend their towns as to obtain from the powers available every advantage from a health, housing, and sanitary point of view, and it was the various points necessary to attain this result that those having to deal with the question of town extension and town planning would have to concentrate their serious attention and energy. The author proceeded to deal with the conditions obtaining at Birkenhead and Cloughton, which, he said, offered an excellent illustration of town planning. In 1833 Birkenhead, which then had a population of 3,000, was placed under the control of Commissioners with powers for providing such arrangements as usually belong to rapidly-developing districts. A scheme for the laying-out or planning of the area in question in a most complete manner was decided upon and adopted, based chiefly upon the block or rectangular system, which at that time was considered the most desirable and up-to-date method of town planning. A considerable mileage of roads was at once laid out and formed, and the remainder laid out and formed as the town increased in population. With regard to the extent of a district for which a town plan should be prepared, various suggestions had been made to the effect that probable development for twenty to thirty years should be provided for, but naturally this would greatly depend on local conditions. Whatever the extent decided upon, the scheme should be so designed and arranged as to form part of a scheme of practically illimitable extent, in order that if a further belt of land had at a later date to be planned, this additional area would work in and adapt itself to the portion already executed. Some authorities advocated the preparation of a plan for the complete laying-out or development of an area, including not only the main and secondary roads, but the detailed planning of all the land included in the scheme; whilst others (and he himself) preferred that the scheme should provide for the laying-out or planning of the main lines of communication, both direct and transverse, leaving the detailed filling in or development of the land between to be carried out by private enterprise. This

* Continued from last week (see p. 98).

latter method would be the one most generally adopted, as it would not appear fair to bind the landowner (possibly some considerable time before he was prepared to develop his estate for building purposes) to a specific detailed scheme. This arrangement would also leave some scope for the initiative of the architect and surveyor to whose domain this work properly belonged, and possibly prevent a monotony of type in estate planning. The local authority should, however, take powers to have full and effective control to ensure that the arrangements suitably conformed to the general scheme, and that the means of intercommunication were satisfactory and ample. It was not possible to make all districts, as the physical condition and the configuration of the land, together with local conditions and, possibly, drainage considerations would materially influence the general planning of a district; and different areas within the same district might require different treatment. In preparing the scheme it would be advisable to be ambitious and look well ahead, keeping in mind the fact that "construction" was more satisfactory and cheaper in the end than "reconstruction," and in preparing any scheme good, sound common sense, associated with all the assistance that practical knowledge and science would supply, should be exercised. The scheme should be clothed with all the lines of beauty and ornament that artist or nature could suggest, and all the advice and assistance possible should be obtained from those capable of rendering it, in order that the scheme, when completed, might be the best that could be devised, both from a practical and artistic standpoint; and it should take into account all means of transportation, both by land and water, utilisation of water frontages, etc., and the allocation of land for recreation-grounds, playgrounds, parks, sites for schools, baths, allotments, etc. Play-grounds for children should be fairly frequent and convenient to the areas to be served, but there does not appear to be any great objection to recreation-grounds or playing-fields for seniors being some moderate and reasonable distance away. In considering both the improvement of existing and the planning of new areas adequate means of access to railway-stations should be provided. There was much to be said in favour of the Continental argument that the railway-stations, being the principal approach to a town, should be suitably designed and placed. Railway companies might also be urged to pay some little attention to beautifying their stations and approaches in industrial areas similar to that frequently adopted with success at a number of suburban stations. The desirability of providing additional station facilities for suburban traffic must be borne in mind, and if distributing centres for goods were opened in conjunction with certain of these suburban stations it would materially reduce traffic congestion in the central area. For the purpose of preserving records for future reference photographs should be taken of old houses, old lanes, or characteristic features which will be transformed or altered by the scheme.

Dealing with the question of roads, the author said that the improving and extending of the existing main roads, and the provision of ample cross-communication roads would require careful consideration. He thought it would also be advisable on public grounds if building by-laws could be simplified and revised so as to operate more stringently against the jerry builder, and give some little advantage to the conscientious and sound builder.

Mr. J. Munce, M.Inst.C.E. (Belfast), contributed a paper on "How a Town has Succeeded Without the Town Planning Act." He exhibited a number of lantern slides showing plans of Belfast about 150 years ago, when the population was under 8,000, and of the city at various dates since, which enabled these present to see the great improvements gradually carried out under powers contained in different local Acts. The Corporation had power to fix frontage lines of new buildings 35 ft. back in all streets less than 70 ft. wide. If this power were put in force the distance between the buildings in new streets of minimum width would be 100 ft., but this was not carried out as a rule, for every case was carefully considered on its merits. The author showed how, owing to a definite

plan formulated many years ago, the Corporation had been enabled to widen streets at a very small cost.

Mr. E. Welch thought that in Belfast they suffered from the fact that the town was laid out on Scotch rather than English lines. In some of the towns in England they would see a liberal provision for gardens, but in Irish towns which were Scotch settlements they found the houses extremely mean, for there was not a house in Belfast up till quite recent years which was built on the generous lines of the ordinary residential houses they would, for instance, see at Tralee. In many of the little towns of Ireland, and particularly in County Cork, there were most delightful houses on the English system, but in Belfast there was only a little bit of the centre of the town planned in that way. They could brag in Belfast of single houses, but they had nothing else. They had long streets and nowhere for the children to play except the open street. It was exactly the same idea which led to the building of labourer's cottages on the very edge of the road, instead of placing them back. The result was that in these days the children got all the filth of the roads. The Scotch idea was, of course, the small house—thrifty and economic, of course, but with no idea of what they might call the refinements of life. The Englishman, however, did have some idea of the refinements of life, and he tried to get a garden, and he was very sorry that this English influence, which they saw in the eastern and south-eastern counties or Ireland, did not get to Belfast.

Mr. Luke M. Hill (George Town, British Guiana) said he had been the engineer of the town for thirty-two years, during which the population had increased by 50 per cent., and he had laid out four new districts containing twenty miles of streets. Their streets were all laid out rectangular, which, although rather monotonous, was a convenient way. None of the streets laid out under his supervision were less than 60 ft. wide, and many were 100 ft. wide. They had difficulties in the fact that their average level was 4½ ft. below sea level, and they had to make large provision for storage of rainfall by canals and reservoirs, which discharged into the river by sluices. These canals were laid down either the centre or the side of the roadway, and the widths of the streets he had mentioned were exclusive of these canals. The reservoirs not used for drainage purposes were planted with aquatic plants, which added much to the beauty of the town, and had caused it to be named the Garden City of the West Indies. Unfortunately, they had recently received a visit from Sir Rupert Boyce, who had condemned this street planting as harbouring mosquitoes. He had had rather a hard fight to save the trees, which he had been planting for thirty years.

Mr. S. Brodie (Blackpool) said that when he was in Liverpool many years ago they used to be filled with despair when they considered the beautiful laying-out of Birkenhead. In many respects, however, Birkenhead was in ideal town, and Mr. Brownridge had brought before them a counsel of perfection. Mr. Munce had told them how Belfast had succeeded without Town Planning Acts, but, as a matter of fact, every local Act which Belfast had obtained was a Town Planning Act.

Mr. W. Whitaker said he would like to say something as to the fetish of broad roads and straight roads, and give an example of a town in the kingdom which owed a great deal of its beauty to not having all its roads straight and not having all of them broad. The town he meant was London. He ventured to say that some of the beauties of London would be spoilt if too much street widening and straightening was done there. Was there any street in the world so well known for good shops as Bond-street? But that road was not 50 ft. wide. Why was that? One reason was that it was a great deal easier to cross a road 50 ft. wide than one of 100 ft. He was a man who liked to see both sides of a question, and liked also to see the shops both sides of a street. He allowed that some parts of Bond-street did want widening, but he hoped it would not be extended far. Of course, for main lines of communication they wanted broad streets, but he did not think it was necessary that every street should be at least 50 ft. wide.

A city might, in that way, be made frightfully monotonous and confoundingly ugly. He was happy to say that, in Croydon, owing to the blessed intervention of the Local Government Board, they had succeeded in defeating a street widening which would have destroyed one of the few old quaint buildings in the town. They had gloriously defeated the Corporation, and they blessed the President of the Local Government Board for helping them.

Mr. Brownridge, in reply, said that engineers would agree with all Mr. White had said. The engineers did not want to destroy any of their historical or picturesque spots, and he had emphasised the point in his paper. They must utilise all the art features there were in their districts. The case of Bond-street could be illustrated almost every city. In Liverpool they had broad streets, whilst in Dublin the best shopping street was a narrow one. He thought they must accept it as an actual fact that narrow street was the best for shopping, and that was why he had drawn attention to the necessity for having shopping centres. Mr. Munce said they had not gone in for very straight roads in Belfast, and if they rode on the tramcars it would be not how they twisted round buildings. He particularly wanted to see was the horse back from the roadway. They did not particularly want the space in the roadway because it greatly increased the cost of scavenging.

The Laying and Testing of Earthenware Sewers and Drains.

A very practical paper was read by Mr. Sayers (Belfast) on "The Laying and Testing of Earthenware Sewers and Drains," which led to a considerable discussion. The author drew particular attention to the urgent need there is for standardising of pipe laying for inspection. Regarding pipe laying it he said it was surprising that even at present day much of this class of work done by casual labour. Did it not seem less writing books or lecturing about laying and sewer construction if the details of the actual works was left in the hands of every Tom, Dick, and Harry. He suggested that it was of the first importance that the pipe-layer should be an experienced and competent workman, possessed of not only practical skill, but also of such a measure of theoretical and technical knowledge as would enable him to interpret instructions and overcome the many difficulties that were encountered in everyday practice. The pipe-layer should be a properly qualified and skilful workman of the first class, belonging to a particular recognised body of tradesmen, all others should be prohibited from laying new or altering or interfering with existing sewers or drains.

Mr. A. J. Martin asked whether the author would join with neat cement or with concrete and sand. He always insisted that the wet test should be applied before a trench was filled in, and that the test should continue until the trench was filled in.

Mr. P. C. Cowan thought the use of the phrase "earthenware" was far too indefinite for there was widespread confusion between the various pipes used by the engineer. Scotland and the north of Ireland fire pipes were commonly used, and they were good deal cheaper than stoneware. Engineers, however, were prejudiced against their use. A friend of his at Glasgow would not use either, but said that iron pipes in long run cost very little more.

Mr. Cotterill (Bristol) touched on the importance of greater care in the laying of pipes, and on the attention required after they were laid and suggested that some certificate of efficiency in pipe laying might be issued either by the Institute or by an engineering body.

Mr. J. Sloan (Cork), as the result of twenty-eight years' experience, considered that clay pipes were unsuitable for house drains.

Mr. Sayer, in reply, said he hoped the question would call attention to what was very important matter in regard to the laying of the community.

Municipal Hospitals.

Dr. P. Boobyer (Medical Officer of Health, Nottingham), in the course of a paper on "Municipal Hospitals," pointed out the

of the trend of legislation local authorities would be called upon in the future to provide greatly increased hospital accommodation, and, basing his conclusions on experience for the last fifteen years at Nottingham for successful treatment in the open air for infectious diseases, he suggested that the extension of isolation hospitals and sanatoria in the future could advantageously take the form of inexpensive open-air pavilions.

Foundations.

An interesting discussion arose in the Architectural and Engineering Section of the Royal Society on a paper dealing with the geology of Belfast and neighbourhood, read by Mr. S. Munce, A.M.Inst.C.E. The author pointed out that Belfast was almost entirely built on alluvial deposit, consisting of a material which looked like a blue clay. On being exposed to the air it was of an extremely solid appearance, but on being wet it became a semi-fluid, oily material, which would find its way back to the trench from which it may have been brought in, if left near the edge. The usual method of supporting large buildings was by the foundations, the method of carrying down concrete pillars or other similar construction to the underlying solid stratum being much too costly owing to the depth to which the latter was usually found. As a rule the piles were of larch. Over the top the piles were fixed whole timbers, and between and over these was placed concrete, which in effect the buildings were carried on.

Mr. W. Whitaker pointed out that Belfast was not the only city built on "squash," for great deal of Westminster was also built on it. When engineers and architects were consulted by the geologists that they had to build on "squash" they were quite capable of doing so. In the case of the Government buildings in Parliament-street, Westminster, they went down to solid ground for the foundations, and the distance they had to go down varied from 10 ft. to as much as

Mr. Brodie (Blackpool) remarked that in the district they called such material "slob," and reinforced concrete piles of 60 ft. in length, which were less expensive and more spring than timber.

Mr. E. T. Hall, who referred to the alluvial deposit as "sludge," described a building he erected in the Thames-embankment, where no solid foundation could be found at less than 42 ft. He laid a raft of reinforced concrete on the sludge, and built on it successfully.

Mr. Whyatt (Borough Engineer, Grimsby) pointed out that in his town they called such deposit "slop," and they had found it absolutely necessary to use piles. In the case of a building built there a steel and concrete raft was used, but the building tipped before the piles were down, and the whole thing had to be pulled down and reconstructed on piles.

Mr. C. W. Ferguson (Belfast) said he had built on the "squash," which was also known as "slop." After negotiations with the adjoining owner a party wall was decided on, built on piles which were 30 ft. long, but the adjoining owner built on concrete, with the result that his building was dragged down. He maintained that the principle of building was right.

Influence of Building Regulations on Architecture.

Mr. H. D. Searles-Wood, F.R.I.B.A., in a paper on this subject, said the earliest building regulations were found in the laws of Khammurabi. They were over 4,000 years old, and were as follows:—
viii. If a builder build a house for a man to complete it, he shall pay two shekels of silver for each sar of surface. cccxix. If a man build a house for a man and has not laid his work strong, and the house has fallen and killed the owner of the house, that builder shall be put to death.
ix. If it kill the son of the owner of the house, the son of that builder they shall kill.
xi. If it kill the slave of the owner of the house, a slave equivalent to that slave the owner of the house he shall give.
xii. If the property of the owner of the house it destroys, whatsoever it destroys he shall make good, and as regards the house he shall build it, and it fell, with his own property he

shall rebuild the ruined house. cccxxiii. If he build a house for a man and did not set his work strong, and the walls topple over, that builder from his own money shall make that wall strong.

These Babylonian laws were based on the *jus talionis* principle. A life for a life, an eye for an eye, a tooth for a tooth was the natural law of life, and it was found in all communities.

He thought, therefore, he was justified in saying that the first designer of the pyramids had these laws in his mind, and he was not going to take any chances. Under this code the builder's family were very directly interested in the stability of the work, and it must have required an heroic effort to introduce a new feature that had the slightest appearance of disturbing the repose of the structure. Buttresses were popular, as might be supposed, and recessed panels. These early people used hollow walls to keep the rooms in their dwelling-houses dry and cool, built staircases, and, although it was not quite germane to the subject, it was interesting to note that the bricks they used were made to a standard size, ranging from 8½ in. by 5½ in. by 2½ in. to 9½ by 4½ by 3 in.

When they were working out the Royal Institute of British Architects standard size for bricks, these were considered, and their standard size, 8½ in. by 4½ in. by 2½ in. to 9 in. by 4½ in. by 2½ in. was very nearly the same. What this really meant was that the handiest size for a Babylonian bricklayer to handle all day long was the same as the British bricklayer found the easiest to handle to-day.

The XII. tables of Roman law contained several building regulations, and as they were drawn up by a commission that collected statute laws from Greece and other foreign countries, they might be taken as the standard for the period. Only fragments of them were known, and they chiefly related to easements such as you were not allowed to have, dripping eaves, etc., and they did not appear to have made much mark on Roman architecture. In mediæval England the domestic houses were built on traditional lines, but how far these traditions were regulated by by-laws he could not say.

The overhang, which was a common feature, and which was first used in town houses to protect the goods exposed on stall boards, and afterwards copied in the country, where there was no likelihood of the houses having stall boards; this overhang was regulated by by-laws, so that the projection should not interfere with people riding through the streets on horseback. In modern building regulations three things were considered:—(1) The prevention of the spread of fire; (2) the construction of the building to guard the safety of the public; and (3) public health. It was the regulations that dealt with the prevention of the spread of fire that had had the greatest influence on the architecture of the period.

The regulations based after the Great Fire of London set the fashion for brick and stone-fronted buildings, which altered the appearance of all the towns in the kingdom, and in more recent times the Metropolitan Building Act, which was the first set of building regulations that seriously dealt with the problem of the prevention of the spread of fire, made marked changes in the architecture of the XIXth century. The 4½-in. reveal to all windows and doors, and the restrictions as to barge boards and wooden cornices, and the parapets to the party walls were the marks of this set of regulations.

The rules laid down in the Metropolitan Building Act of 1854 for dealing with the rights of the building and adjoining owner of a party wall had worked so well that it was surprising no other city or town had adopted the same system. There was a tendency nowadays to complain that the model by-laws were too severe, and that they prevented the building of cheap cottages and elementary schools. At the first exhibition of cheap cottages at Letchworth the cottage that won the first prize was in accordance with the model by-laws in every particular. In going round the numerous garden city developments the only two things in the by-laws that appeared to increase the cost were the height of the bedroom stories, where 9 ft. was insisted on, and the height of the studded walls, which was also regulated by this by-law. In places where the story was 8 ft., the

available area was also increased, and there did not appear to be any serious sanitary point in requiring 9-ft. stories. The Building Acts and model by-laws were all based on brick construction, and the introduction of skeleton steel construction and reinforced concrete necessitates some changes in these Acts and by-laws. The Royal Institute of British Architects had just issued a second edition of the regulations for reinforced concrete construction, which were the standard for such method of building in the British Empire. This revised edition would be the basis of the regulations about to be issued by the London County Council, and would be dealt with very much on the lines of their regulations for skeleton steel construction, which were in their Act of 1909. The principle was that the calculations on which the steel construction had been designed were submitted, with the drawings, to the district surveyor, who checked the calculations before the plans were approved. These calculations could be made in any form that was recognised by the profession; but a good method of tabulating the calculations had been drawn up by the District Surveyors' Association and approved by the Royal Institute of British Architects, and it was a great saving of time and labour if the information was given by the architect to the district surveyor in this form. The regulations for reinforced concrete gave the tests to be applied in selecting the materials and the methods of calculating the various parts of the building, the method of mixing the materials, and the precautions that had to be taken in preparing the centring and carrying out of the work. Some people were of the opinion that the time had come when there should be a general Building Act for the whole country; let them hope, if this came to pass, that it might be so drawn as not to stereotype existing methods of construction, but stimulate new and better methods than at present. It might be a good thing to encourage architects to work out the strains and stresses in their structures by making a law that the methods of calculating the designs should be submitted to the district surveyor, and if found correct the construction should be allowed, and thus do away with all those cast-iron schedules and rules that so often hampered an original design. It might be said that these were matters which did not directly influence architecture, but with the introduction of new materials and methods of construction, new means of expression must be found. It was true that over 4,000 years ago men were using the same materials as were now commonly in use, but during that time what varied expression had been given to the use of these materials. Each succeeding race had written its history in monumental works that were our most cherished possessions, and they in their time must strive to leave behind them some monuments worthy of the age in which they lived.

Mr. John Slater said, as architects, they might congratulate themselves that the stringent laws which existed in Khammurabi's time did not now exist, or he was afraid the profession would not have many people come into it. Mr. Searles-Wood had referred to mediæval regulations and talked about the construction of overhanging eaves, but there was one very curious fact he had not alluded to. In a great many places they were required to have overhanging eaves at the side of the building, and the same thing applied to the building next door. The old regulations required that a certain space should be left between the side wall of one house and the side wall of another, and the consequence was that instead of a party wall they had a party open space, and this had remained in some cases up to now. The expression used for the space between the building was "twichel."

Mr. Brodie (Borough Engineer, Blackpool) said he would welcome anything which would simplify the laborious duty of specifying by-laws, for it often happened that in the most carefully-drawn-up building by-law points which arose were not covered. It would be a great mistake for any new Building Act to come up for the whole of Great Britain and Ireland which laid down minutely what ought to be done. All they could attempt was general principles covering the safety of a structure, and also the health of the people who had to occupy the building, whether it

be a dwelling-house, or a large meeting place, or a warehouse.

Mr. E. T. Hall said that the subject brought up by the author was one of very great importance. He thought if they were going to lay down cast-iron rules they would prevent experiments in new forms of building, and by stereotyping rules and regulations they would render it very difficult for the architect who had got some new method of expressing himself to give effect to that. The gravest objection he had ever heard to the present system was that if they left it to the discretion of those who were carrying out the Act they were leaving it to an unknown quantity. The great majority of the men who had the final carrying out of the Act were men of great common sense and great experience, but it was within the knowledge of everybody that occasionally they came across men who had not the training and who were not gifted with common sense, and these men were obstructive and troublesome. It was because of such men that many persons had sought refuge in having strict regulations laid down. He had had experience of one or two such men, and must confess that it was a great trial to the flesh. But, on the whole, he must say that 99 per cent. of the surveyors to local authorities who administered the laws were considerate and sensible in dealing with them. He felt with the author that it would be a great blessing if they could get rid of the costly litigation and obstruction and confusion which arose from light and air cases. In Scotland they had the Dean of Guild Court before whom such matters were settled. The Royal Institute of British Architects drew up a Bill to get rid of "light and air," but when the decision was given in the *Cells* case in the House of Lords it was felt that no new law was necessary, as the judgment was founded on what they considered to be magnificent common sense. Unfortunately, however, since then some of the judges had interpreted the law in a different way, and things were almost as bad in some courts as if the House of Lords' decision had never been given. He confessed that he considered it iniquitous that a man should acquire rights of light over his neighbour simply because the neighbour—often for the amenity of a district—had chosen to keep his land vacant. He understood Mr. Searles-Wood to say there was no building law until after the Great Fire, but unless his memory served him false William the Conqueror laid down some laws. As regarded air and light matters, they might be dealt with in the same way as party-wall questions.

Mr. Cutler (City Surveyor, Belfast) said that he recognised the advent of ferro-concrete building was enormously increasing the surveyor's labour. It was not possible for the ordinary staff employed in the inspection and supervision of buildings to have the necessary knowledge to make the calculations which must be gone through to see that any design was safe. He knew that such buildings had come to stay, and if there were many buildings of ferro-concrete put up in Belfast he would have to have an addition to his staff to deal with the scientific problems which arose. With regard to the building by-laws in general, he considered the more cast-iron they were the better, and he did not believe there were many by-laws for ordinary buildings which interfered with architectural practice. They must not forget that the bulk of the buildings in any town or city were not put up for architectural beauty, although he admitted they might well be. Building by-laws were absolutely necessary for the control of those who were not accustomed to architectural problems as were those present. He could quite understand the architect's point of view, but when they had to deal with the jerry builder, and with the many men who did not even employ a builder, but put up buildings under their own supervision, then the more cast-iron the rules were the better. Occasionally they might operate rather harshly in cases where a fully-qualified architect was concerned, but, on the other hand, they operated very beneficially in dealing with the class of men he had referred to. Another point was this. A surveyor might disapprove of a plan, and the person concerned might try and get behind the surveyor's back and go to the Committee. If the rules were strictly laid down the

Committee could do nothing. In Belfast, although they had no by-laws for regulating steel and ferro-concrete buildings, yet they had used such discretion as was necessary in dealing with these structures. They had not enforced the by-laws with regard to the thickness of walls, and they had given facilities to those who wished to use such materials, and the Committee had met every case in a reasonable way.

Mr. Lacey (Oswestry) said there was nothing in the building by-laws which had any bad effect on architectural features. He did not think the by-laws for brick and stone buildings were too severe, for they only took the minimum so far as the safety of the building was concerned. Certainly, they were below what the minimum ought to be with regard to air space and sundry other matters which would affect the health of those who had to live in the buildings. At the same time he agreed that statutory powers should be given to local authorities, which they had not at present, to allow for steel construction and ferro-concrete buildings.

Mr. W. H. Wyhatt (Grimsby) remarked that, whatever they put in by-laws, there were some builders who would try to get below them, and he quite agreed with the views of Mr. Cutler. London differed from the provinces in building, especially with regard to the quality of the bricks used, and the code as to the thickness of brick walls was probably correct for London. The model by-laws were, however, too severe for the provinces, and they felt that they could build a 9-in. brick wall 8 ft. or 9 ft. higher than could be safely done in London. In London most of the houses were three or four stories, and it was necessary to carry the party wall through the roof as a protection from fire. In the provinces the houses were two or three stories, and it was quite unnecessary that there should be the great cost of carrying the party wall through the roof. The Local Government Board had been getting out a new code of by-laws for five or six years, but had not made up their minds when they were going to promulgate them. Personally, he felt it was a great mistake to give the officials any discretion at all with regard to the enforcement of by-laws. A builder would come and plead a special case, and the surveyor might feel inclined to give way on a point, but they knew perfectly well the builder would tell somebody else, and then others would come and want a relaxation of some other rule. Therefore, he felt that the by-laws should be as definite as possible.

Sir Henry Tanner said that he was practically free in all his building construction from by-laws, but he would rather go for latitude as far as possible in all by-laws, and allow plenty of elasticity. As to reinforced concrete, he did not think they could make any rules which would cover everything, and thus, as far as possible, that should be left an open matter. He would not like to concern himself trying to fill in the form which the author had handed round, and he thought there would be a great many mistakes made in trying to fill it up. Still, they did not seem to have mistakes in construction for the buildings stood right enough. On the whole he preferred that each case should be dealt with as it arose. Even if they took the rules which the author had handed round, they only applied to particular points as to corridors and columns, and so on, but no mention was made of any sort of connexion between the several things, and yet it was one of the most essential things in reinforced-concrete construction.

Mr. P. C. Cowan (Irish Local Government Board) said on his shoulders lay the duty of revising the general building by-laws of Ireland, which followed the English code very closely. Mr. Searles-Wood did not tell them what grievance the architect had, or what effect the by-laws had on architecture. He ventured to submit that the building by-laws of Ireland could have no prejudicial effect on any reputable architect's practice, and he was absolutely certain from experience that any relaxation with regard to common ordinary buildings would be a great and gross mistake. He agreed that it was not possible to put into short, crisp by-laws regulations for reinforced-concrete buildings, and that the submission of the full plans with full calculations for revision and approval by the local authority was the proper line to take. Except in one or two large towns,

there was no power for a local authority in Ireland to waive its by-laws; but he was sorry to say some authorities did so, although it was unlawful. They might take it that practically every case where this was done was a deterrent to the public.

Mr. J. Munce (Belfast) said he never knew what jerry building was until he went to London. In Belfast they would see actual houses, so far as construction was concerned, as anywhere. Sir H. Tanner represented the Government, and had unlimited money at his disposal. [Sir H. Tanner: "You are very there."] And he was not asked to build a house for 3000. on which if he had his way he would spend 6000. or 7000. In fact they had gone on the principle of building houses for people to live in, and not look at. People spent a large part of their lives in their houses, and they tried to make them comfortable. In Belfast they went to Parliament for powers to deal with concrete buildings, and hoped to get them passed in a few days.

Mr. Searles-Wood said he would attempt to answer the points raised, but had been successful in disguising his feelings in regard to by-laws. As a district surveyor for twenty-eight years was quite in favour of by-laws, and he never found any difficulty in meeting with reasonable requirements of by-laws.

Our report will be continued next week.

THE ROYAL ARCHAEOLOGICAL INSTITUTE IN SOUTH WALES

In deference to the wishes of many members of the Council of the Royal Archaeological Institute to hold its annual meeting this year in South Wales. And in order as far as possible to do justice to so interesting a district in the short time available the earlier part of the meeting has Cardiff for its centre, while the latter days are to be worked from Llandudno. Under the unfortunate circumstances of the death of a member of the Council, who was assembled at the City Hall at noon on Tuesday July 25, when Alderman Bevan, in the unavoidable absence of the Lord Mayor, formally received the party and welcomed them to Cardiff. Sir Edward Bouverie returned thanks on behalf of the Institute to the kindness of the authorities the Corporation and pieces of plate (all recent gifts) exhibited, as well as an interesting series of charters, with good heraldic seals, granted to the town by former Lords of Glamorgan and other Royal confirmations. After luncheon the reassembly (by permission of the Marquis of Bute) at Cardiff Castle, the history of which was described by Mr. J. S. Corbett and John Ward. The site, which is a square plan, was at first a Roman fort, defended originally by earthworks, but later by a stone wall, to which towers were afterwards added. By the Normans the area was converted into a castle, by the throwing up of a mound for a great tower in one corner and burying the ruined remains of the Roman wall and under a high bank of earth and gravel obtained by the deepening of the surrounding ditch. These works, which were, no doubt, strengthened by wooden defences, are usually ascribed to Robert Fitzwarren, Earl of Gloucester, in 1093. The mound was subsequently covered with a polygonal great tower in mass the banks crested by walls, and the area divided into an outer and an inner bailey with an intervening gatehouse. The hall and its adjuncts were built against the west wall and are now represented by the Marquis of Bute's residence. The restoration and decoration of this were executed by the late Mr. J. W. William Burgess, and no more noble example exists of the extraordinary genius and versatility of that gifted artist. Every day was afforded the party for inspecting Cardiff Castle, and the Roman remains now in position of "restoration" were pointed out by Mr. Ward. A visit was also paid to the remains of the adjoining Black Friars monastery. A move was next made to St. John's Church, which was described by Dr. C. T. Venn. Its most noteworthy feature is its west tower, which is of the Somerset type, and dates from 1473. Under the guidance of Mr. J. W. William Burgess, and the other members of the Grey Friars monastery, excavated in 1897, were also examined. At the evening meeting in the City Hall an address was

been delivered by the Earl of Plymouth, president of the meeting. Owing, however, to a political crisis the Earl was detained in London, and at very short notice his place was taken by Mr. J. W. Willis Bond, F.S.A., who read an interesting paper on the historical and geological differences between the counties of Devon and Cornwall.

On the morning of Wednesday, July 26, the party departed on an excursion to Caerphilly, which involved a short railway journey to Cardiff. On arrival at the Castle Mr. F. St. John Hope took charge of the party, and from the platform that formed the outer wall, just within the great gatehouse, pointed out the main features that differentiated this fortress from every other in South Wales. Apart from its exceptionally large size, it is said to include with the outer works an area of 30 acres, the Castle is peculiar in having been originally surrounded, like Berkhamsted, by a large and deep artificial lake, formed by raising up the waters of two small streams by a long stretch of walling, strengthened by small buttresses or towers, and backed by high earthen platforms. This forms all the eastern side of the outer defences, and has the great advantage in the middle and a broad wet ditch formed by the barbacan and bridge over the arms of the lake. At the northern end is a minor gatehouse, and at the south end a series of towers and bastions to defend the vulnerable sluice-gates of the lake. On a square island in the middle, strengthened by walls and by bounded bastions at the corners, are placed the main buildings of the Castle. It is formed a square with a round tower at each corner, with a lofty gatehouse with four towers in the middle of the east side, reached from another gatehouse in front forming the entrance to the island. This is reached only by a bridge from the bailey before it, and the space within it, which also extended along the north and west sides of the island, formed the middle bailey. The walled enclosure formed the inner bailey, and within it along the south side the great hall with the buttery and pantry, with chapel on the east, and the great chamber and lodgings on the west. The kitchen occupied two stories of a projecting tower on the north, and, with the bakehouse, etc., filled the middle of the west side of the inner bailey. Having before it an outer gatehouse, and that on the east. These formed the bases of a bridge approach from a second island to the west, forming a large polygonal ground, strengthened by a wall all round and probably by another gatehouse and tower from the mainland to the west. The other feature to be noted is a narrow passage extending from the outer bailey to the north side of the main island, but at a distance from it, to the parade ground, which seemed also to divide the lake into a northern and a southern section. All the ruins of the Castle are of one date, beginning with their foundation by Gilbert of Clare, Earl of Gloucester, about 1267, and ending with the partial rebuilding of the great hall in 1310, when its north wall was reconstructed with a richly ornamented doorway, a porch, and three large and lofty windows, decorated with the ball-flower, and clustered piers to support the new roof inserted in the old wall. The Castle seems to have been destroyed during the insurrection of Owen Glou, about 1405, and in the following year a grant was made to a neighbouring landowner of leave to quarry building material from the Castle. The wholesale wrecking of the walls and gatehouses seems to have been effected by undermining them rather than by the usual accepted use of gunpowder. After a minute examination of the buildings under Mr. Hope's guidance the party returned to Cardiff.

On the morning of Thursday, July 27, the party began the day with a journey by train and by motor-car to St. Donat's Castle, the residence of Mr. Godfrey Williams. The building was described by Mr. Hope as a fortified house, begun probably in the XIIIth century, but considerably altered by Henry VII., consisting of the usual hall and living-rooms, arranged about a courtyard entered by a tall gatehouse. This in turn was covered by a small outer court and gate. Through the care of the late Mr. Morgan Williams, the last purchaser of the house, all the ancient features of the building had been scrupulously retained, and only restored when absolutely necessary; the house, consequently, still presented its original appearance to an unusual extent. The beautiful gardens, laid out in a series of terraces down the slope of the cliff on which the Castle stands, descend on to a large quadrangular parade ground at the sea-level. This has at the land end a long range of stabling with dwelling-houses at the ends and along part of the west side, all of Elizabethan date, and forming a unique example of Tudor barrack accommodation.

St. Donat's Church was next visited, and described by the Vicar, the Rev. L. E. Richards. It stands at the side of the castle cliff, and consists of a chancel and nave of XIIIth century foundation, with north porch, western tower, and an added chapel north of the chancel containing numerous monuments of the Strudling family. The Norman font is carved with rows of overlapping scales. In the churchyard is an exceptionally well preserved tall XVth century cross on a flight of steps.

From St. Donat's the journey was continued to Llantwit Major, when, after luncheon in the Town Hall, a quaint early Tudor building, a visit was paid to the parish church of St. Illtyd, which was described by the Rev. H. Morris. The building is of somewhat unusual plan. The chancel of the pre-Norman church which first occupied the site was replaced in the XIIIth century by (practically) another church, consisting of a nave and aisles of four bays and a chancel with south chapel (now destroyed). At the junction of the churches a tower was built. A south porch was also added to the old nave, which was also continued westwards by a curious building, or chapel of three bays, with wide doorways in the middle of each side, and having in each of the western angles an ascending staircase to a former gallery across the westernmost bay. This unusual arrangement seems to have been for the convenience of pilgrims to some shrine or relic which was displayed on an altar that stood in another gallery in the easternmost bay. In the XVth century the old nave, except its south doorway, was rebuilt and a two-storied porch for a priest added on the north-east part of the western annex. The church retains a fine XIVth century reredos with two side altars, with a vestry space behind, and in the old west

towards the end of the XIIth century, and the nave entirely rebuilt in two sections with features reminiscent of Wells and St. David's. The work also included two western towers. About the middle of the XIIIth century a strong tower with a vaulted basement, now used as a chapter-house, was begun on the south side of the presbytery, and somewhat later the beautiful eastern Lady Chapel was added. During the XIVth century the aisles were rebuilt, with butting arches across them for a proposed vault to the nave; this, however, was never added. The north-west tower was rebuilt in the XVth century, at the charges of Jasper Tudor, Duke of Bedford, and the south-west tower, together with its spire, in the XVIth century, as part of a very extensive series of repairs from 1536 to 1589, by which the church was finally rescued from a dilapidated and degraded condition of long-standing. After an inspection of the church and its fine series of tombs and monuments the journey was continued to St. Fagan's Castle, the residence of the Earl of Plymouth, who was still unavoidably absent. The house, which was described by Mr. Harold Brakspear, is now a many-gabled house of the XVth century, with rather staring modern brick chimneys, but occupies the site of an older building, to which the circuit wall belonged. The house contains some good panelling and carved overmantles, and in the courtyard in front is a large circular leaden cistern, richly decorated with oblong panels, with the Royal Arms, etc., and the date 1620.

At the evening meeting a paper, illustrated by lantern slides, was read by Mr. J. W. Rodger on the incised stone slabs of South Wales.

On Thursday, July 27, the party began the day with a journey by train and by motor-car to St. Donat's Castle, the residence of Mr. Godfrey Williams. The building was described by Mr. Hope as a fortified house, begun probably in the XIIIth century, but considerably altered by Henry VII., consisting of the usual hall and living-rooms, arranged about a courtyard entered by a tall gatehouse. This in turn was covered by a small outer court and gate. Through the care of the late Mr. Morgan Williams, the last purchaser of the house, all the ancient features of the building had been scrupulously retained, and only restored when absolutely necessary; the house, consequently, still presented its original appearance to an unusual extent. The beautiful gardens, laid out in a series of terraces down the slope of the cliff on which the Castle stands, descend on to a large quadrangular parade ground at the sea-level. This has at the land end a long range of stabling with dwelling-houses at the ends and along part of the west side, all of Elizabethan date, and forming a unique example of Tudor barrack accommodation.

St. Donat's Church was next visited, and described by the Vicar, the Rev. L. E. Richards. It stands at the side of the castle cliff, and consists of a chancel and nave of XIIIth century foundation, with north porch, western tower, and an added chapel north of the chancel containing numerous monuments of the Strudling family. The Norman font is carved with rows of overlapping scales. In the churchyard is an exceptionally well preserved tall XVth century cross on a flight of steps.

From St. Donat's the journey was continued to Llantwit Major, when, after luncheon in the Town Hall, a quaint early Tudor building, a visit was paid to the parish church of St. Illtyd, which was described by the Rev. H. Morris. The building is of somewhat unusual plan. The chancel of the pre-Norman church which first occupied the site was replaced in the XIIIth century by (practically) another church, consisting of a nave and aisles of four bays and a chancel with south chapel (now destroyed). At the junction of the churches a tower was built. A south porch was also added to the old nave, which was also continued westwards by a curious building, or chapel of three bays, with wide doorways in the middle of each side, and having in each of the western angles an ascending staircase to a former gallery across the westernmost bay. This unusual arrangement seems to have been for the convenience of pilgrims to some shrine or relic which was displayed on an altar that stood in another gallery in the easternmost bay. In the XVth century the old nave, except its south doorway, was rebuilt and a two-storied porch for a priest added on the north-east part of the western annex. The church retains a fine XIVth century reredos with two side altars, with a vestry space behind, and in the old west

end is collected a very interesting series of early crosses and grave-stones.

The ruined XVth century manor house of the Bassetts at Old Beaupre was next visited, and described by Mr. D. Alexander. Its chief features are the gateway of the courtyard in front, with the Bassetts arms and the date 1586, and the richly ornamented three-storied porch to the hall door, which bears the following inscription on three panels:—

SAY COWLDST TIOV EVER FYND
OR EVER HEARE OR SEE
WORLDY WRITCHE OR COWARD PROVE
A FAYT FVLL TRYND TO BEE
RYCHARDE BASSETT PAYING TO WYF
KATH ERINE DOVGILT TO SIR THOMAS IOINS
KNIGHT BWYLT THIS PORCE WITH TIE TONNES
IN ANO 1600 HIS YERES 57 I IS WIFE 55.

The "tonnes," or chimneys, have, unfortunately, utterly perished.

After viewing Cowbridge Church and the remains of the town walls and gate the party returned to Cardiff.

At the evening meeting Mr. F. King read a paper on the excavations on the Roman sites at Caerleon and Caerwent.

GENERAL NEWS.

Professional Announcements.

Mr. Roy Young and Mr. Cecil Masey, architects and surveyors, have dissolved partnership, and Mr. Cecil Masey is continuing the practice at the same address, 4, Holles-street, Cavendish-square, W.

Essex County Architect.

The Essex County Council have resolved to establish a county architect's department, to cost about 1,600*l.* a year, under the superintendence and control of a county architect at an annual salary of 800*l.*, with two assistants.

St. Paul's Bridge.

The Corporation of London (Bridges) Bill, authorising the construction of St. Paul's Bridge and the rebuilding of Southwark Bridge, has been withdrawn from the consideration of the Select Committee of the House of Lords. It has been referred to the Chairman of Committees of the House of Lords as an unopposed measure, and has been passed and ordered to be reported, with amendments, to the House of Commons for third reading. Additional protective clauses have been inserted.

Teaching and Examination in Art: New Government Scheme.

The Board of Education have constituted for a term of three years, from next September 1, a Standing Committee of Advice for Education in Art, amongst whose first members are already appointed Mr. E. K. Chambers, Chairman; Sir E. J. Poynter, P.R.A.; Sir C. Holroyd, Sir Cecil Smith, Professor R. Blomfield, A.R.A., Mr. G. Clausen, R.A., Mr. A. S. Cope, R.A., Professor Selwyn Image, Mr. S. J. Cartledge, and Mr. S. J. Solomon, R.A. In 1913 will be brought into force a comprehensive scheme of examinations to take the place of the current elementary examinations for art-class teachers' and art-masters' certificates, as well of the minute subdivision of art studies, the Board being of opinion that such stimulus and control as may be properly applied to the teaching of art by a central authority can be exercised best in visits of inspection, and that the teachers of the schools rather than external examiners should be charged with the duty of applying tests by examination. The Board will invite experienced headmasters of schools of art and others to consult with them for the establishment of a reformed course of national competition.

Memorial to William Penn.

After the Harvard Window in St. Saviour's, Southwark, comes the Penn Memorial in All-hallows, Barking. The former, designed by John La Farge, was the gift of Mr. Choate, when American Ambassador to Great Britain; the latter, which has just been placed, has been erected by the Pennsylvania Society through the generosity of its Vice-President, the Hon. W. A. Clark. Such associative memorials add greatly to the interest of London churches, and the new one, recalling the fact that William Penn, "an exemplar of brotherhood of peace," was baptised in the church on October 23, 1644, is welcome.

The design was originally undertaken by the late Charles F. McKim, but his untimely death prevented the realization of his plans. The design was finally prepared by his firm, Messrs. MacKinn, Mead, & White, New York.

Usher Hall, Edinburgh.

The leaden casket used in connexion with the laying of the foundation-stone at Usher Hall by King George V. on July 19 was made by Messrs. Morrison & Son, Randolph-place, Edinburgh, contractors for the plumbing work, to a special design by the City Architect, Mr. Williamson. In recent times there has been a revival of the art of lead-work, a material which possesses many artistic qualities, and in this case an endeavour has been made to adapt the material to the purpose in view on simple and sound lines of design. The casket is about 17 in. by 14 in., and is 4½ in. deep. The junction of the corners has a raised band, the edges of which are scalloped and perforated with a representation of the thistle at each angle of the cover. Banding the casket crosswise are broad bands of lead having stamped depressions, and at the point of junction there is imposed an ornamental device having a semicircular field carrying an impression of the City Arms, while on each quarter of the cover are the King's Cypher and the date, 1911.

A Central Imperial Board for Surveyors.

The Conference of Delegates which sat in London in May-June, under the chairmanship of Colonel Sir Duncan Johnston, have made a report upon the subject of reciprocity throughout the Empire in the examination and authorisation of surveyors. It was suggested that a Central Board should be set up to consist of representatives of every province, dominion, or state which licenses land surveyors, and of the Institution of Civil Engineers, the Surveyors' Institution, the Ordnance Survey, and the Colonial Office, to exert its influence in maintaining a uniform standard of examination under any arrangements for reciprocity that the several Governments of the Empire may adopt.

The New Guildhall, Londonderry.

The Irish Society have undertaken to defray the cost, estimated at 24,000l., of rebuilding the Guildhall, which, the tower excepted, was destroyed by fire three years ago. Some of the London Livery Guilds have agreed to contribute stained-glass windows to the new structure. The Mercers' Company offer 350l. for the filling-in of the principal three lights of the window in the Assembly Hall, provided that the five other lights are filled in by other Companies, and the Grocers', Girdlers', and Glaziers' Companies will share in the gift, which will constitute a memorial to King Edward, and mark the time-honoured association of the City and Guilds of London with Ireland and the plantation of Ulster.

Parish Church, Puddletown.

The Bishop of Salisbury has consecrated the new work for the restoration and enlargement to its former extent of the XVth-century chancel of Puddletown Church, which, together with an extension eastwards of the north aisle, has been carried out under the directions and superintendence of Mr. Ponting, diocesan architect. The *Builder* of August 7, 1897, contains some illustrations, after drawings by Mr. Roland W. Paul, of the Athelhampton Chapel, with two or three of the monuments, and in a "Note" in our issue of March 12, 1910, p. 287, we gave a short historical account of the fabric and antiquities of this highly-interesting Dorsetshire parish church.

Ceilings.

Mr. Werner Laurie is publishing a new library to be called "The House Decoration Series." The series will deal with such subjects as chimneypieces, staircases, porches, windows, etc., each written by a specialist. The volume just ready is "Ceilings and Their Decoration, Art and Archaeology," by Mr. Guy Cadogan Rothery. It deals with ceilings as an important medium for the expression of art, and treats of the origin of the vaulted, coved, and primitive ceilings; Greek, Byzantine, and Arabesque types, Mediaeval and Renaissance; Tudor period of fine plaster work; use of rose centres, mouldings, etc.; illumination—application to the decoration of the modern houses, etc. The book is fully illustrated.

Church Building Society.

The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its usual monthly meeting on the 20th ult. at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W., the Hon. Sir E. P. Thesiger, K.C.B., in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Bristol, St. Ambrose, 50l. for the first portion; Harrow-on-the-Hill, St. Peter, Middlesex, 150l.; and Skirbeck Quarter, St. Thomas, Lincs, 100l.; and towards enlarging or otherwise improving the accommodation in the churches at Cricklewood, St. Peter, Middlesex, 60l.; Dinnington, St. Leonard, Yorks, 20l.; Hendon, St. Paul, near Sunderland, 20l.; Higbgate, All Saints, Middlesex, 50l.; Hoxton, Christ Church, Middlesex, 50l.; Luckington, St. Mary and St. Ethelbert, Wilts, 20l.; Shadingfield, St. John the Baptist, Suffolk, 20l.; Walton, St. Mary, Suffolk, 15l.; and Ipswich, St. Bartholomew, 60l. Grants were also made from the Special Mission Buildings Fund towards building mission churches at Canford Cliffs, Church of the Transfiguration, near Bournemouth, 25l.; and Bournemouth, Clare College Mission, Surrey, 35l. The following grants were also paid for works completed:—Plumstead, St. Mark, Kent, 500l., being balance of a grant of 1,000l.; Llandrindod Wells, Old Church, 20l.; Kendal, St. George, 85l.; Stoke Damerel, St. Andrew, Devonport, 100l.; Colehig, St. Michael, Devon, 25l.; Swinton, Holy Rood, near Manchester, 65l.; Woodford Bridge, St. Barnabas, Essex, 150l.; Kingsway, Holy Trinity, London, 200l.; Caversham, St. Andrew, Oxon, 100l.; Gainsborough, Holy Trinity, Lincs, 20l.; Lydgate, St. Anne, near Manchester, 85l.; Chesham Bois, St. Leonard, Bucks, 70l.; St. Mary-in-the-March, Kent, 50l.; Rodley Mission Church, near Leeds, 20l.; Picton, St. Hilary, Yorks, 20l.; and Stockwell, The Epiphany, Surrey, 20l. In addition to this the sum of 310l. was paid towards the repairs of seventeen churches from Trust Funds held by the Society. At this meeting the Secretary reported the receipt of an anonymous donation of 800l., 600l. being for the General Fund and 200l. for the Mission Buildings Fund.

COMPETITION NEWS.

Deptford Central Library.

At the last meeting of the Deptford Borough Council it was decided to invite quotations from quantity surveyors giving the terms on which they will be prepared to take out quantities, measure up for the certificates and final accounts, and generally do all the work of a quantity surveyor in connexion with the Central Library.

Proposed Central Fire Station at Hendon.

At the last meeting of the Hendon District Council, the Fire Brigade Committee submitted a report in connexion with the proposed central fire-station. They have decided to erect this on a site adjoining to the Council Offices at Central Hendon, with cottages at the rear for the housing of the firemen, and to arrange a competition amongst six selected architects to submit schemes for the consideration of the Committee. This was agreed to.

School, Walker Gate, Newcastle-on-Tyne.

The Education Committee of the City and County of Newcastle-on-Tyne invite from architects practising in the city designs and estimates for a senior mixed school and a junior mixed school at Walker Gate, each to accommodate 365 children arranged in the case of each school in classrooms of four for fifty each and three for fifty-five each; an assembly hall to be provided; the cost per head not to exceed 10l., and this to include everything except the site value, the caretaker's house, and boundary walls. The principal conditions are as follows:—The plans will be submitted to an assessor nominated by the President of the Royal Institute of British Architects, and the assessor's decision will be final.

The schools for which competitive plans are now invited will provide for a partial scheme only, as an infants' department will be added in the future. Competing architects must submit a block plan showing how

they propose to add the infants' department in future. The architect appointed to put out the partial scheme will have the right of planning and carrying-out the remaining portion of the scheme when the Committee decide to complete the work. The author of the design placed first shall be appointed to carry out the work; the architects whose designs are placed second and third in order of merit will be paid premiums of 20l. and 10l. respectively.

Architects must guarantee that the actual cost shall not cost more than the amounts set in their estimates.

A plan of the site may be seen and a copy taken at the Education Offices, Northumberland-road.

The designs must be accompanied by:—

- (a) A short and concise description of the buildings and such information as cannot be clearly shown in the drawings, and describing sanitary appliances and the arrangements for ventilation and heating.
- (b) A short description of the material to be used in the buildings.
- (c) An estimate of the cost.

We think the promoters might fairly be asked to supply a lithograph copy of the plan to competitors.

Competition of Plans for Town Hall, Can.

H.M. Trade Commissioner for Canada reports that a proposal is shortly to be submitted to a poll of the ratepayers of Winnipeg for the building of an annex to the Town Hall, at a cost of some 500,000 dols. (103,000l.). It is anticipated that a new Hall will have to be erected in the course of a few years, and if the proposal for an annex is approved, a competition is shortly to be opened for plans for both annex and the future Town Hall, together are to form one complete scheme. Communication in this connexion should be addressed by British firms to the Engineer, Winnipeg.

The New Australian Capital.

In reference to this competition, we from the *Journal* of the Royal Institute of British Architects that a deputation from the Council of the Institute waited upon Mr. Collins, who is acting for Sir George High Commissioner of the Commonwealth in London, and laid before him their petition. It is hoped that, as a result, the High Commissioner will be in a position to make such representations to his Government that the unsatisfactory conditions will be revised and the competition placed upon more equitable footing.

Skegness and District Cottage Hospital.

Owing to representations by the Committee has decided to appoint a professional assessor to adjudicate upon designs (which are to be submitted by September 8 next). Mr. Ernest R. St. G.R.I.B.A. (of Messrs. Sutton & Greaves, Bromley House, Nottingham), has been appointed to act in that capacity.

Proposed Additions to Union Offices, Salford.

In reference to this competition, we asked to state that it is restricted to architects in Salford and the immediate neighbourhood.

CORRESPONDENCE.

Gidea Park.

SIR.—The solicitors of Gidea Park, have sent me a copy of their letter addressed to you, published last Friday, which I carefully read.

I need hardly say that I had no intention of doing any injustice to Gidea Park, and I wish to express my regret if any statements contained in my letter may have given that impression.

It appears that the capitalised value of the ground rents created amounts to 16,230l. 18s. 10d., as against about 20 suggested by me. As regards the 4s. 6d. per week for watering, and 5s. per house per week (in certain cases 3s.) for opening and shutting the doors, I, of course, accept their statement that in cleaning the houses, that only twenty competitors availed themselves of this, and that therefore my calculation that

pany were receiving money at the rate of £5,000 per annum for these services was based on a misconception, i.e., that all the competitors availed themselves of this offer instead of the small number named.

I think it is fair to myself and to Gidea Park, Ltd., to say that I did not intend to have any animus against the promoters of the competition, but to point out that, from a professional point of view, it does appear to me of us to be extremely undesirable for architects to compete with each other to have the owners of estates of the financial, as well as the artistic, side of building them

quite understand that a large sum of money has been spent in the laying out of the site, advertising expenses, etc., but this expenditure would be necessitated in any development scheme.

It appears to me that these garden cities will be carried out with advantage to the promoters, builders, architects, and the public without mixing up the functions of the one with the other in any way.

A very strong argument against the present scheme from the architect's point of view is contained in a single sentence of a letter you published in your last issue from the Chairman of the National Town Planning and Housing Council, namely, "The garden city movement is tending to revolutionise the relations between building owners and architects."

Quite so. It is apparently tending to give their identities into one. I believe it is usually considered an egregious mistake for a building owner to become his own architect. But I have yet to be convinced that it is not an equal mistake for an architect to become his own building owner, in competition with other architects.

It was to this point alone that I was endeavouring to draw attention.

MAURICE E. WEBB.

Sir,—Mr. Maurice Webb's letter in your issue of July 21 is extremely interesting in that it should serve to draw attention to the methods of the promoters of the competition. The Gidea Park idea is admittedly a very new one. There appears to be a landowner who is desirous of developing his property, and by use of the magic words "Garden City" and "Town Planning" a certain fancy wrapping has been given to what remains a business proposition to get rid of it. I take it there is no philanthropic state—there does not appear to be anything to be given away at Gidea Park—yet the proceedings seem to have conveyed an impression to this effect.

Cannot this be admitted; that it is a business proposition to be carried out on proper lines? The promoters are not the only people who have attempted to do model speculating building.

So far as the architects are concerned who have been content to become speculators as well as architects, they went into the competition with their eyes open, thirsting for glory. They scarcely realised that the competition, and the prizes, and the fancy wrapping were the means to the end of disposing of land and the creation of ground rents. The architects cannot complain, and emphatically have their wares on offer in the marketplace. It is not an unifying thought that they may accept Mr. de Jersey's invitation and spend their Saturday afternoons posing as spiders in the webs they have built.

Another danger of the competition is that a number of young men of slender resources have been tempted to take up land and throw money, and failing to sell their houses they find themselves confronted with foreclosure and bankruptcy.

It is far safer and much better for the professional man not to enter the marketplace as a speculator. It needs special training, and, as he who has had a large experience in this class of work, I do most seriously wish to advise Brother architects, and especially the younger men, not to speculate themselves. Look for builders if you like, and there is plenty of precedent from Mr. Shaw downwards—be house-designer, not house-dealer.

C. H. B. QUENELL.

Sir,—We have just noticed the letter from Mr. Maurice E. Webb in your issue for July 21, and as architects for seven of the competition houses, wish to draw your attention to one or two of the statements made by Mr. Webb.

In the first place, no one expects that the company instituting the competition anticipate making a loss over the estate, and there is no doubt that the expenses of the competition have duly been taken into account. We note that the capitalised value of the ground rents created is put down at £20,000, but deducting the original value of the land, the cost of road-making, sewerage, etc., the profit will not be found to be exorbitant. Meanwhile, half the ground being taken up on lease, there is very little possibility of selling the improved ground rents until the houses are let or sold, which means that the company will not receive the price for the whole of the freeholds until the properties are all occupied.

We beg to differ from the statement made, that the company are charging the competitors £50 per house per week for opening and shutting them every day; this sum includes cleaning down and scrubbing out the houses weekly, so that the out-of-pocket expenses of the company must, at any rate, be 3s. per week per house, and as competitors with more than one house can get the subsequent houses attended to for 3s. per week, it will be seen there is very little surplus for superintendence and profit.

Then, as to the charge of 4s. per week for watering the gardens, this they undertook to do three times per week for the back and front gardens, probably taking the man one and a half hours on each occasion. Although we did not avail ourselves of this offer, we do not consider it would have been an overcharge.

With reference to the letter of July 12, we do not see why builders should not be urged to have their own representatives on the property, especially on Saturday afternoons (and we may say Sundays); if they sold or let they would not have to pay the estate commission. Likewise the company's offer to act as agents at the usual commission; Mr. Webb may consider this "a handsome consideration," but on this point he had better ask any well-known firm of estate agents and surveyors.

Without wishing to be discourteous to Mr. Webb, it seems to us that his misconceptions are due to the reason which he states, i.e., that he is not a competitor, nor is he interested, financially or otherwise; he does not know the facts, therefore his criticism is wide of the mark, whilst the only question he opens up of any value is whether it is advisable for architects to take up a building speculation. Apart from the fact that the land is taken up about equally between builders and architects, we should like to ask if architects are to be deterred from placing their money (if they have any) in furthering their own work? If so, it means that they are not to be allowed to speculate in that security in which they have the greatest expert knowledge, and, presumably, the greatest chance of success.

GRIPPER & STEVENSON.

The King Edward Memorial.

Sir,—As so great dissatisfaction has been expressed, both in the Press and House of Commons, as to the unsuitability of the site chosen by the Committee for the King Edward Memorial (London), I am venturing to submit to you an alternative proposal.

The site I now venture to suggest is situated about halfway between the Albert and Victoria Memorials, and immediately faces the Museum at South Kensington, which bears the name of the parents of our late King.

This island site, which lies between Cromwell gardens and Thurloe-place, is now, and has been as long as I can remember, a disgrace to this important part of the capital on account of the deplorable unoccupied property that stands on it, and the whole of which, I believe, can now be bought for a reasonable sum. The suggestion of this site being acquired and a monument of King Edward being erected thereof has doubtless been made by others, but I imagine that the reason why it has not been recommended by

the Memorial Executive Committee has been, first, because the amount collected would not justify the spending of £30,000, or £40,000, for a site simply for the erection of a monument, and, secondly, because if the site was cleared of its buildings the houses that would overlook it on the south and west sides would form an unsuitable background for a monument. But the scheme which I now venture to propose overcomes these objections, and is as follows.—That the little triangular site of ill-grown trees and shabby grass immediately on the east side of the property should be cleared and partly thrown into the roadway, and that the property on the island site be purchased and a public building erected thereon to house either the Science Museum, the future site of which has recently been so warmly discussed in the Press, or the London Museum, which is now temporarily quartered at Kensington Palace. A building on this site would provide a superficial floor area of about 50,000 ft.

My proposal is that the actual memorial to King Edward should be placed at the east end of the site looking towards the Brompton-road, from the centre of which thoroughfare one would obtain a direct vista of the memorial, extending for a distance of 1,100 ft. down the centre of the unusually wide road in front of the Victoria and Albert Museum, and it is surely impossible to imagine a finer vista in an important London thoroughfare for a monument than this.

In order to provide a suitable and effective background to the statue, the facade of the east side of the suggested museum building could be designed as part of the memorial in the form of a screen with a bold niche in its centre for the statue and a large fountain basin at its base.

One of the chief reasons why our statues invariably look so feeble is on account of their unsuitable backgrounds, but it is difficult to imagine a more effective background than such a screen as is here suggested.

Although such an architectural proposal has perhaps not yet been attempted in England, the idea is by no means original, and I frankly confess having borrowed the idea from the Trevi Fountain in Rome. Those who are acquainted with this masterly work of Bernini—although some give the credit to Nicola Salvi—either from illustrations or pleasant memories of visits to the Eternal City, when they perhaps have drunk of the virgin water from its basin, half believing in the superstition that by so doing it will ensure their returning to Rome—will at once realise how effective a memorial treated after this manner would look on the site here suggested. The measurement of the centre portion of the facade of the Trevi Fountain is about 75 ft. wide and 90 ft. high, and the width of the east side of the suggested museum would allow of a screen slightly wider than this.

As for the question of cost, I think it would be found that £100,000, would cover the total outlay of purchasing the property, the erection of such a museum building as I have suggested, and the provision of an adequate sum for a statue of the King.

F. W. SPEIGHT.

INTERCOMMUNICATION COLUMN.

Rainwater "Tipper."

Sir,—Your correspondent "Clerk of Works," in your issue of July 28, p. 101, inquires for an automatic rainwater separator.

There are several to be had, but one of the best is that of Mr. C. G. Roberts, of Haslemere, Surrey.

H. M. DICKINSON, A.M.I.Mech.E.

Sir,—Referring to the letter in your last issue, signed "Clerk of Works," a rain-water separator such as he describes was being advertised by Mr. C. G. Roberts, of Haslemere, in 1898, but whether same is now obtainable I cannot say. H. A. TURNER.

BOOK RECEIVED.

BUILDING IN LONDON. By Horace Cubitt, A.R.I.B.A. (London: Constable & Co., Ltd. 31s. 6d. net.)

EDITORIAL SUMMARY.

The leading article is entitled "The Past Session."

A second article deals with the Statutory Qualification for Surveyors (p. 120).

Notes (p. 121) include: "Llangollen Town Planner"; "Presentation to M. Daumet"; "Copyright."

An illustrated article on "Montreal" will be found on p. 122. In this connexion some Montreal buildings are illustrated in our inset plates.

The result of the summer examinations of the Royal Institute of British Architects will be found on p. 124, where also is given some information on the special examination of Licentiates to Qualify for Candidature as Fellows.

Our report of the proceedings of the Royal Sanitary Institute Congress at Belfast is continued this week (p. 127).

A preliminary account of the proceedings of the Royal Archeological Institute, in connexion with their annual meeting in South Wales, is given on p. 130.

Correspondence (p. 132) includes letters on "Gidea Park"; "The King Edward Memorial."

The illustrated Monthly Review of Civic Design (p. 135) includes: "Hyde Park Corner Improvement"; "Sanctuaries for Wild Life"; "London County Council White Hart-lane Estate"; "Town Planning Conference"; and notes.

The Building Trade Section (p. 140) contains: "Some Legal Questions about Extras"; "Building Plans and Building Prospects"; "London Association of Master Stonemasons"; "Federation of Building Trade Employers"; "Projected New Buildings in the Provinces"; "Applications under the 1894 Building Act," etc.

Law Reports (p. 144) include: "Rights under the London Building Act"; "Action by Contractor against Building Owner."

MEETING.

TUESDAY, AUGUST 3.

Guild of Architects' Assistants.—Visit to the London Opera House, Kingsway. 6.30 p.m.

FIFTY YEARS AGO.

From the *Builder* of August 3, 1861.

Proposed New Bridge at Blackfriars.

THE Committee of the Corporation for the Bridge House Lands have had under their consideration for some time the best mode of providing for the public convenience, which has been somewhat jeopardised by the state of the present bridge. After much deliberation they determined to call upon engineers for designs for a new bridge, leaving them quite unfettered in their arrangements and designs. The productions of these gentlemen, and of some rising engineers who were desirous of bringing forward their ideas voluntarily, have been under the consideration of the committee. The designs submitted to them are twelve in number, many of them elaborately drawn, with details of construction. The engineers were Mr. Barlow, Mr. Breton, Mr. Goodchild, Mr. Brunless, Mr. Joseph Cabitt, Messrs. E. Bidder and E. Clarke, Mr. R. W. Mynne, Mr. Fowler, Mr. Hawkshaw, Mr. G. Rennie, Sir John Rennie, and Mr. Page. From these the committee have selected the design of Mr. Page, and appointed him the engineer for its construction.

THE BUILDER.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White (Chairman) presiding.

LOANS.—A loan of 1,000*l.* is to be made to the Battersea Borough Council towards the cost of street improvements, and 1,500*l.* to the Poplar Borough Council for construction of a pipe sewer. Loans are also to be made to other Borough Councils as follows:—St. Marylebone, 4,531*l.*, for electricity works; Shoreditch, 2,520*l.*, for paving works; Woolwich, 4,841*l.*, for electricity works; Bethnal Green, 20,000*l.*, for erection of a town hall; Hackney, 4,364*l.*, for electricity works; Hampstead, 7,550*l.*, for electricity works, and 14,650*l.*, for erection of offices; St. Pancras, 4,896*l.*, for paving works; Fulham, 3,000*l.*, for street improvements; Westminster, 19,125*l.*, for street improvements; Islington, 5,500*l.*, for electricity works; Camberwell, 1,193*l.*, for street works; and Poplar, 34,995*l.*, for electrical works.

THEATRES.—It was reported by the Theatres and Music Halls Committee that various alterations are to be carried out at the Comedy Theatre. The Committee also approved of proposals submitted by Messrs. F. Matcham & Co., relating to the construction of the Middlesex Music Hall, Drury-lane, on the site of the existing hall and adjoining premises. The Committee approved amended drawings of the Yiddish Theatre, Commercial road, E., showing arrangements for an accommodation for 1,250 persons.

ENGINEER'S DEPARTMENT.—The Establishment Committee reported that, owing to the retirement of Mr. C. Elwin, Chief Assistant Engineer, it was proposed to promote Mr. S. B. Sandiford to that position.

HORNIMAN MUSEUM.—Various repairs and painting work is to be carried out at this Museum at a cost of about 70*l.*

LIMEHOUSE.—It is proposed to enlarge the Northey-street School, and provide a revised accommodation of 276 in the infants' school.

CAMBERWELL.—The Camberwell School of Arts and Crafts is to be enlarged at a cost, including electric lighting, of about 19,120*l.*, and tenders are to be asked for during the summer recess of the Council.

SCHOOLS.—The Education Committee stated that it was desirable that wood-block flooring should be laid at the following schools: Moreland-street, Finsbury; Hammond-square, Haggerston; Hoxton House, Hoxton; Great College-street, St. Pancras; and that the work should be carried out by the Acme Flooring and Paving Company, Ltd., at the rate of 6s. 6d. per square yard.

WANDSWORTH.—It was also stated by the Committee that it was proposed to erect a one-story building to replace the existing school of the Sacred Heart (Roman Catholic) at Wandsworth.

FIRE-STATION.—Owing to the unsatisfactory lighting and ventilation at the Scotland-yard Fire-station, it is desirable to carry out various alterations and improvements at an estimated cost of 115*l.*

LONDON ELECTRIC RAILWAYS.—It was stated that a loop line was to be constructed between the present terminus of the Charing-cross, Euston-road, and Hampstead Railway, under the forecourt of the Charing-cross (South-Eastern Railway) Station, and passing under the Charing-cross (District Railway) Station on the Victoria-embankment.

BATTERSEA PARK.—Various repairs are to be carried out to the river wall at this park at an estimated cost of 300*l.*

TRAMWAYS.—The Highways Committee reported that it was proposed to construct a loop line at the Finsbury Park terminus, between Blackstock-road and Finsbury Park-road.

It is also proposed to carry out the following tramway works:—Reconstruction of existing tramways from Baring-street to Finsbury Park, via Southgate-road and Green-lanes, etc. Construction of tramways from Herne Hill to Brixton, and extension of existing tramways in East India Dock-road.

WHITE HART-LANE.—The Chairman of the Housing of the Working Classes Committee reported that, in his opinion, this estate was suitable to be developed on the lines of a

[AUGUST 4, 1911.]

garden suburb and town-planning system which would provide a variety of houses at moderate rental, and also larger houses at middle class occupation.

It was also stated by the Committee that tenders are to be invited for the erection of cottages, and construction of roads and sewers on the Norbury and White Hart-lane estates.

ILLUSTRATIONS.

Temple of Artemis.

IN this restoration of the Hellenic Temple of Artemis (Diana) at Ephesus (IVth century B.C.) I have attempted to piece together the many fragments found, by the help of some of Wood's measurements, those taken by me during the British Expedition conducted by Mr. D. G. Hogar, and of the many portions preserved in the British Museum.

I can claim that the disposition of the pediment would key with and fit upon the remains uncovered in 1904-5. The distance between the outer face of the lowest step from north to south is 239 ft. 4½ in., and the height given the columns is that calculated by Ferguson, namely, 60 Greek ft. = 6 ft. 9½ in. English.

This structure followed upon the lines of previous ones (see the *Builder*, November 1906), excepting that it was built in the prevailing style and was much more magnificent. It was based upon a terrace, and the cornice increased in height, and was also enriched with much architectural carving and magnificent sculpture. The sculpture shown to the column follows the lines adopted by Dr. Murray. The enriched bases, mouldings, and arrangement of the podium follow that of the temple of Apollon at Miletus, which was erected subsequently to the Artemision.

The entablature is rendered in the Ionic style, with high cymatium and no frieze. Led dentils on square consoles are introduced to act as cantilevers to support a projecting cornice with the cymatium above. There is no direct evidence that consoles were introduced in the entablature, as unfortunately none have been found, nor even a length of corona. In the Archaic Temple evidence is against their introduction, unless the corona oversailed, to a great extent without support, as a length was found with a sunk bed with no vestige of encorment by consoles.

Fortunately a completed section of the entablature of the temple at Priene, many miles away, has been made, and as this temple was erected shortly after the Greek Ephesian one it was probably a reduced rendering. But I have given the shape of a design of the dentals after those of the Temple of Apollo.

The angle of the pediment is that chosen by Dr. Murray, and the sculpture I suggest in the tympanum represents Artemis mothering her devotees, who are bringing, conducted by the Messenger, their offerings to her. The "Goddess with the Lions" is placed in the acroterion at the apex of the pediment, as was done in the restoration of the Archaic Temple and the well-known type of the Ephesian goddess is placed as the cult statue.

My thanks are due to Mr. Gilbert Bayes for his beautiful rendering of the figure sculpture.

A. E. HENDERSON.

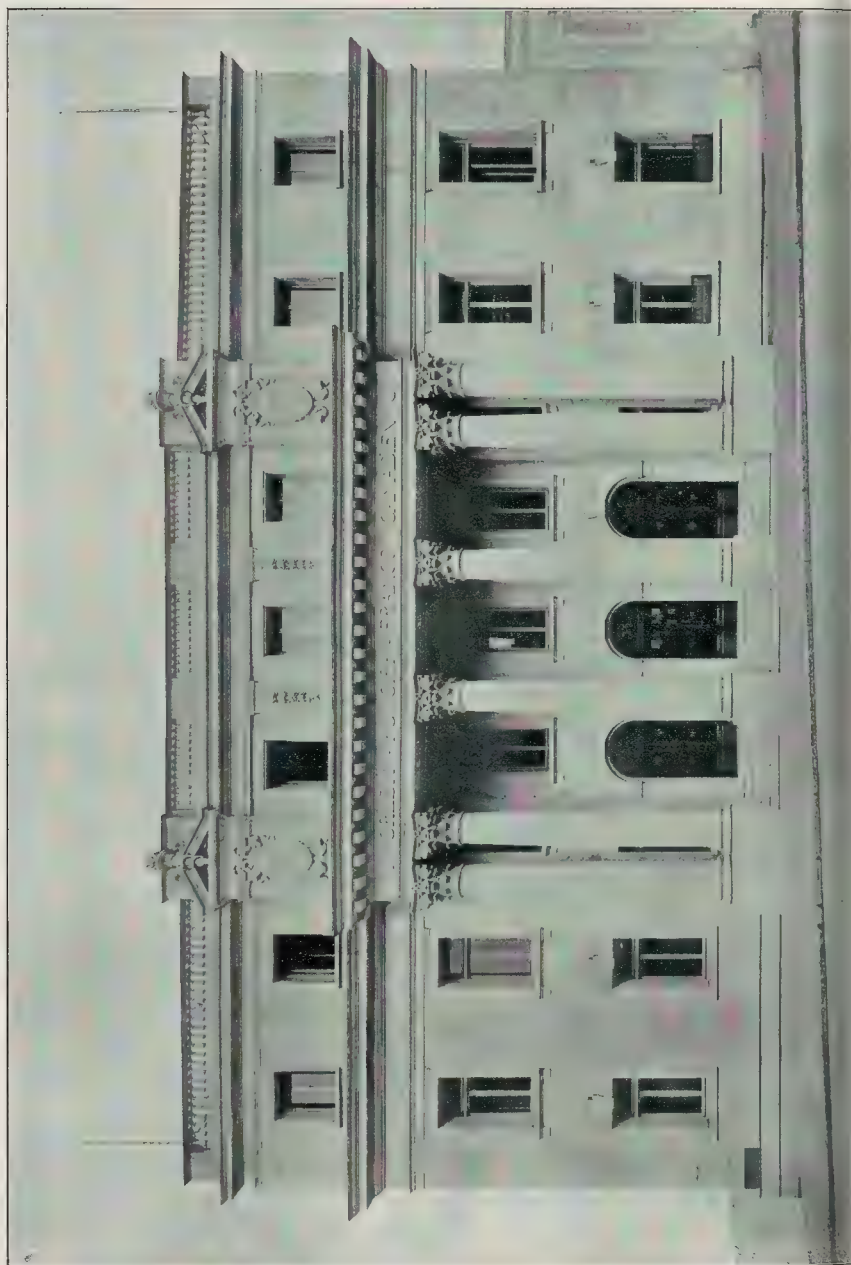
Montreal Illustrations.

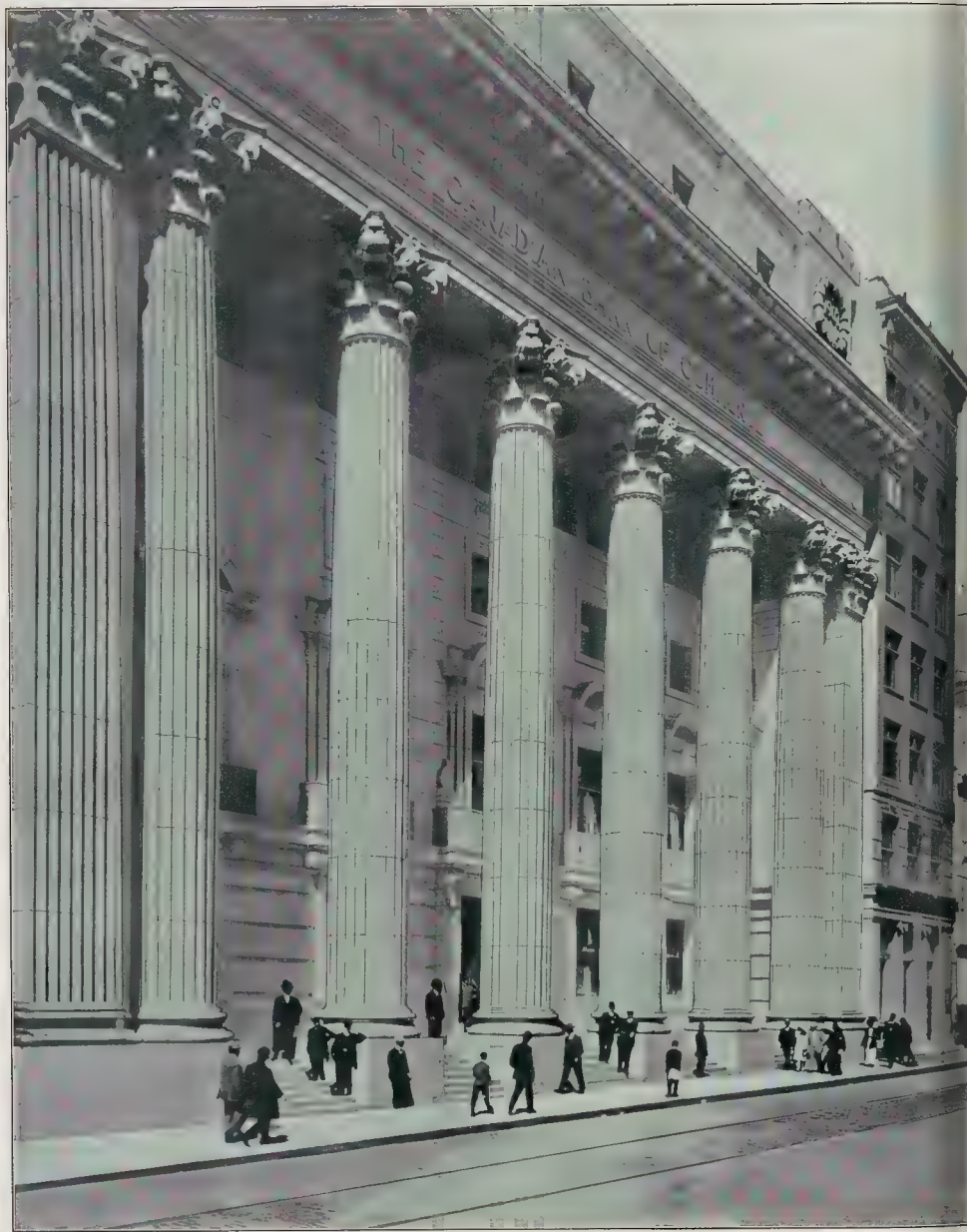
OUR illustrations of the Canadian Bar of Commerce and other buildings in Montreal are given in connexion with an article on p. 122, where some particulars of the building illustrated will be found.

CORPORATION OF LONDON LIBRARY AND ART GALLERY.

The annual report sets forth that, in 1910 the total number of readers and visitors at the Guildhall Library amounted to 472,297—the highest recorded. The Art Gallery was visited by 125,641 persons, and the acquisitions cost press twenty pictures of the Gascoit bequest and many oil-studies and crayon drawings by the late J. M. Swan, R.A. The Library Committee have deputed Mr. Arthur J. Jewer, F.S.A., to compile a full record of all monumental inscriptions in the City churches, as well as of the stained glass windows, sword-rests, armorial achievements, etc.

THE BUILDER, AUGUST 4, 1911.





Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

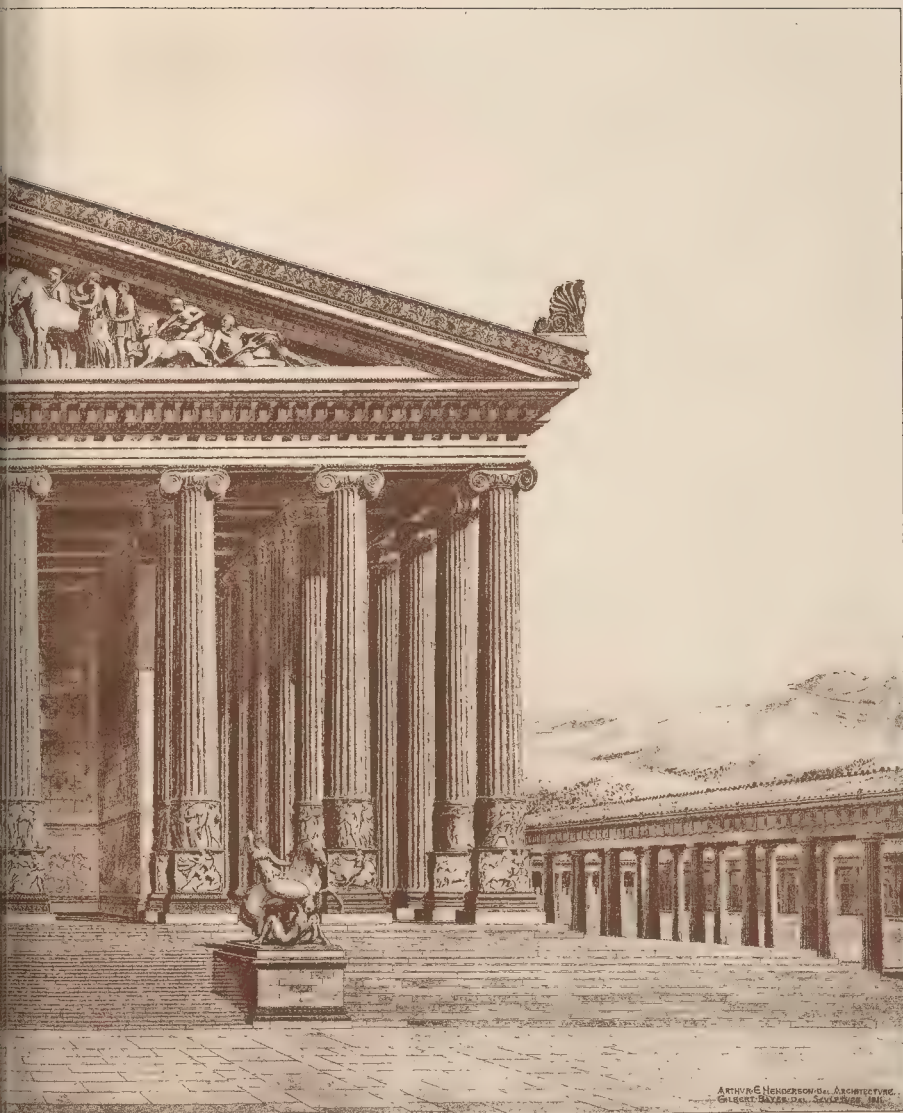
THE CANADIAN BANK OF COMMERCE—MESSRS. DARLING & PEARSON, ARCHITECTS, TORONTO.

(ILLUSTRATING ARTICLE ON "MONTREAL.")



THE TEMPLE OF ARTEMIS (DIANA) AT EPHESUS

By MR ARTHUR E. HENDERS



THE HELLENISTIC (IVTH CENTURY B.C.) STRUCTURE

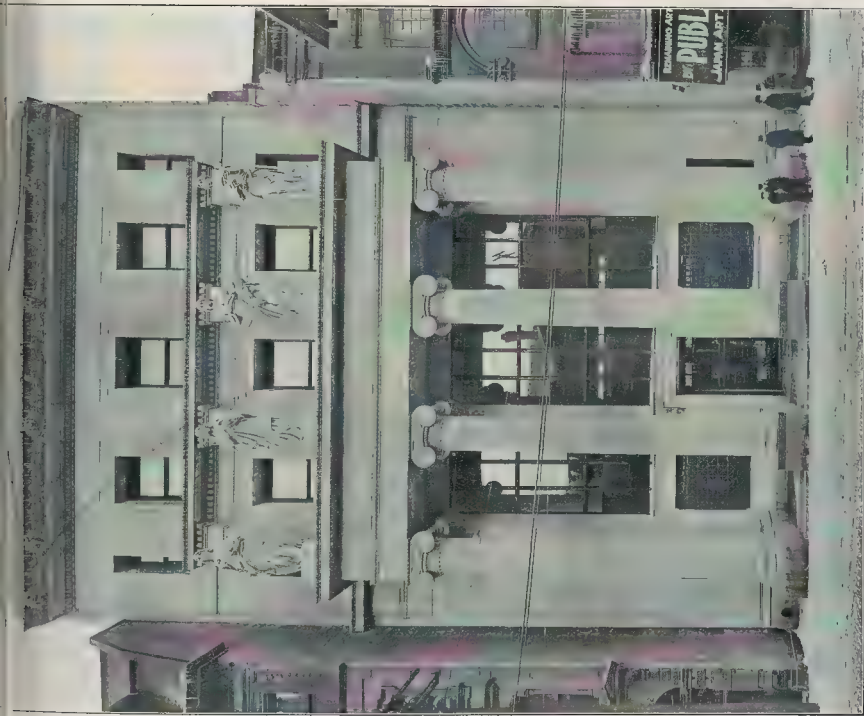
SCULPTURE BY MR. GILBERT RAYES



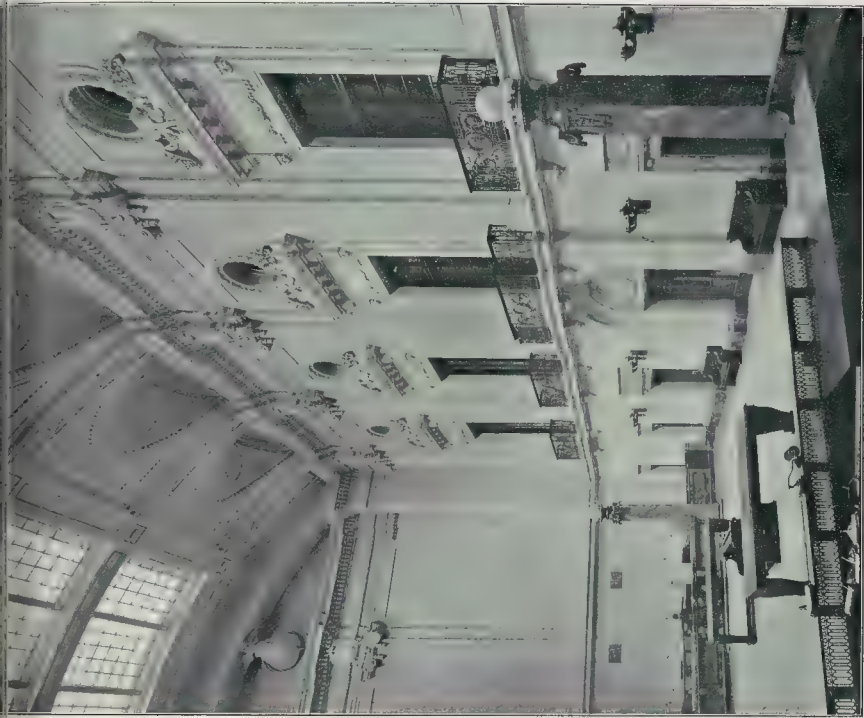
Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

THE CANADIAN BANK OF COMMERCE: ENTRANCE DOOR.—MESSRS. DARLING & PEARSON, ARCHITECTS, TORONTO.

[ILLUSTRATING ARTICLE ON "MONTREAL."]



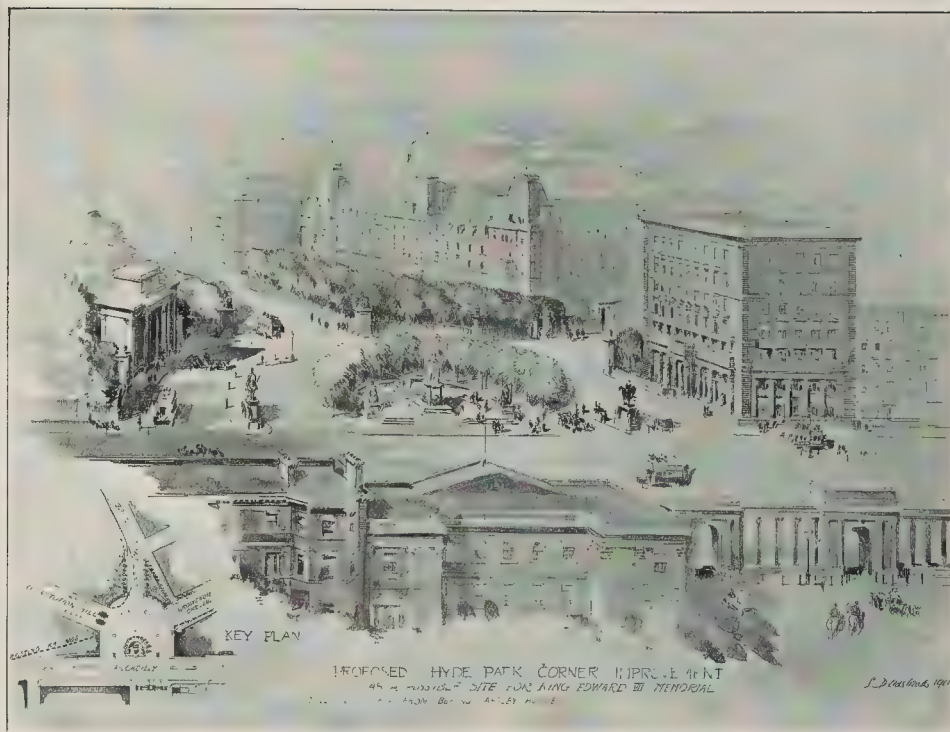
THE ROYAL BANK OF CANADA.
MR. HOWARD COLTON STONE, ARCHITECT, MONTREAL.



THE CANADIAN BANK OF COMMERCE · BANKING ROOM.
MESSRS. DARLING & PEARSON, ARCHITECTS, TORONTO.

[ILLUSTRATING ARTICLE ON "MONTREAL"]

MONTHLY REVIEW · of · CIVIC DESIGN.



MEMORIAL TO KING EDWARD VII.

HYDE PARK-CORNER IMPROVEMENT.

By PROFESSOR S. D. ADSHEAD.

A SERIOUS objection to placing the King Edward Memorial at the Piccadilly end of the Broad Walk in Green Park is met with when we come to consider that however fine such a memorial might be as a monument in itself it must necessarily block the fine vista which this walk provides of the Queen Victoria Memorial from Piccadilly.

About the space in front of Hyde Park-corner there is much need for improvement. The entrance to Hyde Park, Apsley House, and the arch at the top of Constitution-hill are amongst the finest architectural features in London, and yet the open space to which they form the scenic background is one of the most confused and complicated medley of street intersections in London. Very little alteration would convert this chaotic confusion of traffic routes into a simple and well-arranged "place," at the same time providing a magnificent site for a King Edward Memorial, a site which as a centre of interest and view point could not elsewhere be surpassed.

The accompanying illustration shows how the rearrangement could be effected. Green Park would be extended out into Piccadilly, and the axiality and continuity of Piccadilly, as a great thoroughfare, would thereby be emphasised and improved. Grosvenor-place could be continued as a street of even width until it emerged with Constitution-hill and

Grosvenor-gardens into the symmetrically disposed "place"—the *entre court* of London's two finest parks.

The narrowing of Grosvenor-place and its altered alignment would provide space for a garden where at present is merely a waste of asphalted pavement and woodblock. St. George's Hospital, which is shortly to be taken down, will no doubt be rebuilt as an hotel or block of high-class flats. The opportunity which the occasion offers for an elevation suited to the character of the site ought not to be missed.

The King Edward Memorial might then worthily occupy a prominent position in the centre of the Piccadilly side of the new "place." It might take the form of a figure on a pedestal with minor groups on either side. The whole might be set on a semi-circular podium facing Piccadilly, and from behind might be a fall of water into a basin below, with symbolic sculpture at either side.

The statue of Wellington would need to be removed a few feet further toward the east, and the altered conditions would create a vacant site for a statue similar in design to the west.

By an arrangement of islands and street refuges, as shown in the illustration, traffic going in different directions would cross at right angles, instead of obliquely in the present dangerous manner.

The trees which are dotted about without any particular method of plotting, and which merely obstruct the view in every direction, might be taken up and transplanted; some of them so as to form a background to and to accentuate the memorial, and others to outline the shape of the "place" and the proposed garden off Grosvenor-place.

Such an improvement could be made without any structural alteration to any existing building. Practically all that it would mean of alteration would be the relaying of a portion of the road surface, readjusting the Park railing, erecting new piers at the entrance to Grosvenor-place and Grosvenor-crescent, and altering the position of the Wellington equestrian statue.

A small Committee of members of Parliament has been formed for the purpose of pressing this scheme on the King Edward Memorial Committee. It is claimed that it extends instead of diminishing the Park area, that it greatly improves the traffic intersection at a dangerous spot, that all the historic features of the site are retained, and that a fine position is secured for a statue of the late King. It is further urged that the scheme would be comparatively inexpensive and would leave sufficient funds for the provision of the Shadwell Riverside Park as an East-end Memorial.

SANCTUARIES FOR WILD LIFE.

By J. S. M. WARD, B.A., F.R.Hist.Soc.

THE example set by the United States in retaining a large tract of country as a sanctuary for wild life has been followed by several other countries, including Canada and Switzerland. It is certainly time that something similar should be done in England.

In spite of the laws against the destruction of wild birds, thousands are trapped and shot each year. Nevertheless, these laws have done much good. They should, however, be strengthened and more rigorously enforced, and might well be supplemented by sanctuaries in which all wild life, birds, beasts, and plants, would be immune. Men might then study nature at first hand, but might slay nothing.

Wild creatures need some place of refuge, where they can, for a time, be safe from interference. Their young must be protected from the cruelty or thoughtless ignorance of boys and men. Gradually the really wild country is disappearing. Sometimes it is built over. This, indeed, is a very real danger, for when wild and beautiful country is opened up by rail or tram from a big town, it is soon covered with "eligible villa residences." Parts of Haslemere have quite recently been spoilt in this manner, and now the builder has commenced his devastations upon the slopes of the North Downs, above Reigate.

The growth of smallholdings, also, cannot fail to have a most disastrous effect upon the wild life of this country. The peasant owner, as the experience of the Continent proves, is, of all men, the most destructive of wild creatures.

England is becoming by degrees a "Black Country," and one shudders to think what the rural districts will be like 200 years

hence. Probably they will most closely resemble allotment gardens.

If this is likely to be so, it behoves every one who has either any artistic sense or any love of nature to endeavour to save sanctuaries near to our different towns. This subject might perhaps be taken in hand as an extension of the town-planning movement.

The expense need not be so heavy as might be supposed, for I have included much common land. In that case it would only be necessary to extinguish the sporting rights of the lords of the manor, which, however, should not be a very heavy item.

We may divide the rest into two divisions:—
(1) Land unsuitable for agriculture;
(2) and that which is suitable.

Of No. 1 we may make two divisions:—

(a) land either used or suitable for forests.
(b) land unsuitable.

Of (a) we may take parts of Ashdown Forest as an example; of (b) much of the South Downs.

Forestry should be encouraged wherever possible, and will often help in the formation of sanctuaries, but it must be remembered that, although one of the best trees for commercial forestry is the pine, most wild creatures seem to avoid forests of this tree. Oak, on the other hand, has not this disadvantage.

Therefore, wherever afforestation is undertaken by the State, wild life should, so far as is possible, be encouraged.

Moreover, much land in private hands might become sanctuary to all practical purposes without the country going to the expense of becoming its owner. Taxes might be remitted or reduced, especially the undeveloped land tax, where certain rules for the preservation of wild life were accepted. This would be found useful in the case of both (a) and (b). But only so long as they remained outside the building zone. The cheapest way to

prevent their being built on would doubtless be to pay the owners a sum in return for which they should agree not to build over the district mentioned, nor to destroy its wild character.

The unearned increment tax will probably not remain at its present low figure, and this will render many landowners willing to forego the future possibility of increased rents through building, in exchange for an immediate return, in the shape of a lump sum, which can be invested.

Of No. 2 (agricultural land) it will be noticed that I have been very chary. I have only included it as a rule (c) where it was necessary to connect up portions of common land or of No. 1. Or (b) where it lay along the banks of a river, as in the "Mole reserve."

It is now generally accepted that the banks of rivers should, as far as possible, be preserved as open spaces. Rivers thus become pleasant places for recreation and avenues for admitting air and sunlight into our cities, besides being things of beauty.

In America and Switzerland it has been possible to reserve a single huge tract of land, e.g., the Yellowstone Park, as a national sanctuary.

This would not be practicable in England, nor, if possible, would it be desirable. Much of our flora and fauna is so local that, if we are to save all species now existing, we must have many scattered sanctuaries.

This, however, is an advantage, as it will be found easier to arouse enthusiasm for a local sanctuary individual to each important town, than for one huge tract somewhere in the north of Scotland.

In a short article like this, there is not space to go into much detail, so I do not propose to discuss fully the guarding of these sanctuaries. Probably two or three paid wardens would be appointed to each, assisted by amateurs from the local natural history clubs.



Map of Portion of Surrey.

(Reproduced, by permission, from Ordnance Survey.)

REFERENCE TABLE.

1. Effingham Reserve.
2. Netley Reserve.
3. Whitdown Sanctuary.

4. Raunmore Common.
5. Boxhill and Headley Heath Reserve.

6. Walton and Banstead Heath Reserve.
8. Betchworth Park Reserve.

9. Upper Mole Sanctuary.
10. Penslake Reserve.
11. Friday-street and Leith Hill Reserve.

Already two or three such sanctuaries exist. Epping, though an accidental one, has been a great success in this direction.

It is only just that mention should be made of the work done by the National Trust and by the Commons and Footpaths Preservation Society. These two bodies correlate their work to a very considerable extent, and between them have saved many of the most beautiful spots in England. There is every sign that they have no intention of resting on their oars, but that they intend to extend their work in the very direction to which I have referred.

The National Trust is appealing for 7,000l. to buy 60 acres on Colley Hill, overlooking Reigate, and including a long stretch of the Pilgrims' Way. An adjacent 20 acres have been already given to the town, so that the whole will cover 80 acres, and will, moreover, connect up with Walton Heath. The National Trust are making a special point on this occasion that it is to be treated as a sanctuary for wild life.

I would especially recommend local natural history societies to try to raise funds for local reserves. It is wonderful what an enormous amount of wild life will crowd into even a few well-chosen acres. The reserve at Wicken Fen proves this. As an example of the treatment suggested, a map is given of that portion of Surrey around Reigate, with suggested reserves outlined on same.

Some may object that I have suggested twice as many sanctuaries as are likely to be set aside. This is true, but the farmer and the speculative builder will see that too much is not given up; the danger is that too little will be saved. Moreover, many of the suggested reserves may be regarded as alternative.

Finally, I have only attempted to give the merest outline. The time has not yet come for settling the details. These can be best decided by free discussion. If I have succeeded in arousing the interest of my readers in the idea, this article will not have been in vain.

TOWN PLANNING CONFERENCE.

THE following is a continuation of our report of the Town Planning Conference organised by the Institution of Municipal and County Engineers, and held at West Bromwich. A short report of the earlier proceedings was given in our issue for July 14.

Mr. W. Ransom, A.M. Inst. C.E., Worcester, in a paper on "The Prevention of Slums," said that much will have to be done to create a healthy tone among the existing tenants of slumdom. Many of such have lost all love for healthy, natural conditions, and unless their best social instincts are restored by some educational means it will be very difficult to ever translate the occupiers of slumdom into suburban surroundings. If we once get the

dwellers in slumdom thoroughly dissatisfied with their conditions of living they will make an effort to uplift themselves. Local authorities should always be ready to give a helping hand to such who are anxious to improve their surroundings. Health or sanitary societies might very well be formed for the encouragement and reward of such tenants, just as in London the Window Gardening Association does much to encourage a love of nature.

The Housing and Town Planning Act of 1909 has opened out a world of possibilities. Municipal engineers have many opportunities for educating public opinion upon such matters, and they should endeavour to make authorities take a wider outlook. It will be only by inculcating public spirit amongst all those interested in the development of the suburban zones that we shall be able to preserve the advantages of such areas in perpetuity for the good of the whole community.

Mr. H. Stilgoe, Birmingham, having expressed his thanks to the President for the phenomenal meeting which he had arranged, said this question of town planning was not merely a development of small areas on garden city lines, but it was the whole planning of a town, the means of communication, the waterways, the railways, and so on, and looking at those means of communication, seeing which was the right place to put works and factories, to allocate their district, and to allocate the different parts of the city for different building purposes. In an old city this was more or less impossible, because their great works had to be where the means of communication now were. Of course, it was possible to put in a railway line or a canal, or other means of communication into the north or north-east part of the town, if it was in the direction of the prevailing winds. No doubt that was the right place to put the buildings which might be offensive to dwellings. Then on the south and south-west to preserve open as much as possible the land, and to see that portion of it was reserved for their best residences. That was one aspect. That was perhaps looking at town planning from the whole point of view; that was a city building from its commencement. In laying out their outside districts the first thing to do, as Mr. Brodie had said in his very able paper, was to drive out their great arterial roads making the means of communication, and then to connect these arterial roads by links forming the ring road or a series of ring roads as might be necessary. If those who had preceded them had been only a little more far-seeing they would not have allowed the buildings to be brought up to the hedgerows of the country lanes in the manner they had. It was impossible to widen them except at great expense. In arranging for one of their town-planning districts they had come to a provisional agreement, subject, of course, to the approval of the Council and of the Local Government Board, whereby the owner was willing to give land for the wide road,

but that for the road-making he contributed what it would cost to make an ordinary by-law road. That might be considered a very fair and reasonable solution. They came to the restrictions of buildings per acre. In laying out a scheme they would embrace a part of the district where the streets were already laid out and the buildings not yet erected. They would in that case have to be somewhat easier to the owner of the land than to the owner of an estate where roads were not already laid out. The question of restricting the number of houses to the acre was one which was very definitely dealt with. A person could not obtain compensation by reason of the restriction of the number of houses per acre and so on. In laying out a town-planning scheme one must consider what was the fair and right number of houses per acre to make the restriction to. It was going to hit three people at least; one was the landowner, another was the builder—they might call him a speculative builder if they liked—and the third was the local authority. It had been said in one of the papers that they could build fifty-six houses per acre under the by-laws of the town. All he could say was that the sooner the authority got its by-laws amended the better. The Local Government Board would be very considerate in that matter, and give every assistance in bringing those by-laws to a proper shape. Some of the most useful artisans' dwellings in and round about Birmingham were built on leasehold land leased for ninety-nine years at 2l. 5s. per plot, and they were building on an average from eighteen to twenty houses per acre. They had got to consider how much the landowner could stand, how much the local authority could stand, and how much the builder could stand. The house he spoke of was built on leasehold land leased for ninety-nine years at an annual ground rent of 2l. 5s. to 2l. 10s. The building plots had a frontage of 5 yds., and were from 40 yds. to 45 yds. in depth. The houses were set back 10 ft. from the side of the roads, which were 42 ft. in width, constructed in the best manner, and had a 26-ft. carriageway and two 8-ft. footpaths paved with concrete flags, and having granite kerbs and channels. The accommodation was, on the ground floor, a hall entrance, 2 ft. 9 in. wide; a sitting-room, 11 ft. 6 in. by 11 ft., with bay window; a kitchen or living-room, 14 ft. by 13 ft.; scullery, 11 ft. by 8 ft.; pantry, 5 ft. by 3 ft.; coal-house, water-closet, and ash bin house. On the first floor, two bedrooms, 14 ft. by 11 ft. 6 in. and 13 ft. by 11 ft. respectively, and a bedroom 14 ft. by 8 ft., with a bathroom having closet therein. The houses were well built, and could be purchased for 160l. each. He mentioned that to show that if a builder gave a man a house of that character at 6s. 6d. per week, and he could afford to sell it at 160l., they could not shave them down very much. If a man was going to have a 4s. 6d. cottage and they gave him three rooms, that was another thing



L.C.C. White Hart Lane Estate, Tottenham: View of Tower Garden from the Terrace.

(By permission of the R.I.B.A.)

altogether, but these were good houses that an artisan earning a good wage ought to live in. He did not think that the by-laws could be modified to the extent foreshadowed in one of the papers. As a rule, even if the builder built right up to the full meaning of the building by-laws, he did not make too good a job. He did not know of a by-law which said that the roof tile should be of a particular quality, but he did know the importance of this. The Birmingham report on the visit to Germany had been published, and might be obtained from the City Stationery Department at a small sum by anyone who desired to obtain it.

Alderman Cain, Bootle, said his borough was a comparatively new one. They only dated from 1869, and previous to that date they had only very limited by-laws. The old Byways Act was then in force, which did not give very great powers, and from then to now they had been fighting to improve the locality. The ground landlord there, was Lord Derby, and for many years he would only grant leases for seventy-five years, which was not a great encouragement to the speculative builder to go on with first-class buildings. He was pleased to say Lord Derby was now granting terms of 999 years, which would be a great encouragement to builders. He had also been very generous to them in many ways, such as the widening of streets.

Mr. W. Harpur, Cardiff, remarked that the mistakes of the past could not honestly be laid at the door of local authorities and their engineers, but to the lack of legislation enabling them to have sufficient control in the matter of town planning.

Mr. T. Adams (Local Government Board) said he would like to congratulate the Institution on taking up the subject of town planning for discussion at the Conference, and concentrating their attention. He had just had the privilege of visiting America, and for a month had studied the lines on which they were planning cities there. They were devoting themselves with enthusiasm—and their enterprises were well worth studying—to the laying out of parks and civic centres, but were neglecting the problems of public health. So, while they were looking after the interests of the people with regard to parks, they found that the sanitary conditions carried them back to what they had in this country about the time of the passing of the Public Health Act in 1875. Town planning was not merely a question of civic centres and open spaces, but it was really a matter which should begin at the home life of the people, and from that rise up to the civic centre and the main artery. So all considerations which affected the civic life from the individual standpoint, as well as from the standpoint of the community as a whole, should be taken into account. He could make one general suggestion which some councils had already brought into operation. Whether they proposed to apply to the Local Government Board or not, they had the right to prepare a town-planning scheme. A surveyor who had any time on his hands, and ideas to put on paper, should be considering from a comprehensive point of view the whole question of laying out the city with the development of which he was associated, studying the developments that had taken place in the past, and how to make suggestions to his Council as to the growth in the future.

Mr. Harrison, Wellingborough, said that his experience of towns with working-class populations went to show that grass swards were merely a nuisance. The best way perhaps was to have a slip in the centre properly fenced and taken care of. In that case it would be necessary to widen the street to 46 ft. They could hardly expect those who were laying out streets to bear the expense, and if the landowners were willing to give the 6 ft., or whatever it might be, he thought the Urban Council should contribute the cost.

Mr. J. F. Smillie, Tynemouth, remarked that, with regard to the regulations issued by the Local Government Board, there could be no difference of opinion. Anything more unlikely to create enthusiasm for town planning, and less likely to overcome the inertia that prevailed in local authorities when schemes of improvement were proposed it would pass the wit of man to devise. The Act in effect enabled a local authority to obtain powers for the improvement of its town without proceeding to Parliament. It would certainly be a gain to have inquiries

held in the locality instead of going to Westminster; but, apart from that, he thought authorities would be better advised to go to Parliament than to proceed under the Town Planning Act. He submitted that the procedure prescribed by the Act should be reversed, and that every local authority should be compelled to prepare a scheme unless it could show that it was not required. The Local Government Board had not the courage of its own convictions in these matters, and he had no hesitation in saying that the paucity of the applications received arose from the difficulties at the outset in putting the Act into operation.

Professor Adshead, Professor of Town Planning, Liverpool University, said he was one of those who believed that the problem of town planning rested with the municipal engineer in the first place. He felt he was the only official in whose hands was all the information—information regarding the intricate network of the city streets, the connections between city and suburb, and between city and adjacent city. The municipal engineer was also the first man among the various people interested in town planning to understand the proper allocation of areas for various purposes. That had an important bearing on town planning. He felt that this allocation of areas was the most important power that was being given under the Town Planning Act. In connexion with his school at Liverpool he felt that the engineering element in town planning must have the first consideration, but they, as a University school of town planning, had to take it in the broadest aspects. They had to consider the architectural side, the legal side, the landscape expert's side, and it was their endeavour to show those municipal engineers who sent students to them, a sort of vision of the whole problem.

Mr. E. G. Mawbey, Leicester, considered every municipal engineer should begin to make a true plan. He should not wait until his authority asked him. They ought to go forward with a bold policy. As to relaxation of by-laws, they were strong against that at Leicester. They wanted to make streets with grass margins, and they had come to an arrangement to make the streets 50 ft. wide instead of 40 ft., and let them have grass margins *pro tem*. That question of grass margins was a difficult one; if they had them they must have money for maintaining them.

Mr. Jenkins, Finchley, said he had been specially asked by his Council to bring before the Conference a question which they thought was very important. On the occasion of the National Conference at Liverpool they applied to the Local Government Board for permission to send a delegate. The reply was that delegates could only be sent at the expense of the local authority within a distance of 120 miles. With regard to this Conference, the reply was that they were only prepared to sanction payment of the expenses of delegates living in the neighbourhood of West Bromwich. Their Institution was not confined to the neighbourhood of West Bromwich, and the meeting was a national one, drawing officials from every part of the British Isles. They therefore felt that it would have been of great assistance to all authorities had permission been given for the payment of reasonable expenses.

Mr. Whyatt, Grimsby, said one of the points which would differ in different places was the value of the land. In some places, as at Ruislip, land was worth 50l. or 40l. per acre, but in some applications in which they might be concerned in Grimsby, if the scheme were allowed to go forward, the price per acre might be as much as 600l. or 700l. That made a great difference with regard to the number of houses to be allowed per acre. If they calculated that a working man would be able to pay 8d. or 9d. a week in ground rent, and he was able to have a plot of land on which was put about twelve houses to the acre. But if the land was worth four times as much, the workman could not afford to pay 32d. a week in ground rent, and there would have to be about forty houses to the acre in order not to overburden him.

Mr. A. J. Price, Lytham, often thought, as a native of the old city of Chester, it was a great pity that the method of having rows and arcades under the main part of the building in front of the shop windows was not more generally adopted. They could then get a footway under the upper rooms. He did not

agree with the suggestion of differential rating. When they were laying out new districts they were emptying properties in the town, and that was taking place all over the country. The people who migrated to the outskirts got better conditions there, and they should pay for them, not call on the ratepayers inside to do so.

Mr. Lacey, Oswestry, said, with regard to the housing question, it seemed to him that what was wanted was a modification of the law concerning air space. He would like to see smaller blocks; instead of twenty to have four or six houses in a block. The question of educating the young so as to make them good citizens might be almost regarded as a corollary to the Town Planning Act. Education should not be limited to the three R's; there was a fourth R—respect. He wanted the children to be taught respect for others and respect for other people's property, so that the rising generation who were growing up in much better conditions would know how to try and use those conditions as they should. He could say, from his experience, that infectious disease was at times less prevalent in what was called low-class property than in other parts of a town, showing that not insanitary conditions alone were responsible for it.

The vote of thanks to the authors of the papers was unanimously adopted.

Mr. J. A. Brodie, Liverpool, in acknowledging for the authors, said whenever he had contributed papers he had always found their criticism most useful and helpful to him. A word or two on one subject that was discussed—that of by-laws. They wanted to be a little careful about by-laws. They did not want to assume that by-laws were always right; in fact, they were sometimes capable of improvement. What they wanted to make sure was that the buildings they were getting under improved by-laws, if necessary, were buildings which would be as good after sixty years as now, or almost as good. They wanted to keep up the quality of their material, and also to have better forms of construction, which would do away with much that was objectionable.

CIVIC DESIGN NOTES.

Proposed New Bridge at Bristol.

BRISTOL, as well as London, seems to be in difficulties with its north and south traffic which involve the widening of a present bridge or the erection of a new one. The city authorities appear to have been contemplating the widening of Bristol Bridge, but a memorial from the Stoke's Croft, North-street, and District Ratepayers' Association has lately been presented to the Corporation, urging the advisability of the creation of a new bridge connecting Temple-street and Merchant-street. This was opposed by some of the members of the Corporation on the score of expense, the state of the city finances not permitting such a large expenditure. However, after some discussion it was referred to the New Streets Committee for consideration and report. It is all to the good that suggestions from outside should be received and be properly considered by the city authorities. Ideas from any quarter should always be welcome, and their courteous reception encourages a proper civic spirit among the citizens. A suggestion by a local resident for a bridge in a slightly different position which was published in the local press claims to provide equal facilities at less cost and disturbance of property.

A PROPOSAL WAS SUBMITTED LUDGATE-HILL at a meeting of the Corporation on the 27th ult., on behalf of the London, Chatham, and Dover Railway Company, to erect shops at the ground level with three floors above, on a portion of the site of the forecourt of Ludgate-hill Station in New Bridge-street, which is at present enclosed by railings. Under the scheme an area of about 296 yds. super. of land would be added to the public way. The company asked the Corporation to bear the cost of altering the pavements and reconstructing the gullies, estimated by the engineer at about 800l. The Corporation agreed to the scheme subject to the following conditions—(1) That the company should make adequate provision behind the proposed line of improvement for vehicles to enter or leave the station; and (2) that no claims should be made in respect of the proposed

buildings in the event of the Corporation's requiring to widen the public way.

A letter was read from the London County Council suggesting that, as the leases of the adjoining property on the south side of the station were about to expire, the question of an adequate street improvement, to which the London County Council might be prepared to contribute, ought to be considered.

The communication was referred to a committee.

We are interested to learn that the inhabitants of Westerham, Kent, take a just pride in the appearance of their town and its neighbourhood, and are alive to the necessity of taking active steps to preserve its charm and to resist any and every innovation that tends to destroy it. For this purpose a society is in process of formation, to be called the Westerham Local Society, pledged to uphold the architectural and antiquarian interests of the town, which, we hope, will include every object of natural beauty. We wish this society every success and hope that so admirable an example will be followed by every county town in England.

The Street of To-day and To-morrow.

In a recent paper on "The Street of To-day and To-morrow," read before the Institute of Municipal Engineers by Mr. G. W. Hayler, we are glad to see attention drawn to the fact that it can be shown that "to clothe in artistic form that which civilisation has made useful in the public life" is in the end financially profitable. In the past there was no doubt some excuse for the Anglo-Saxon view that art is a luxury. There have, perhaps, been periods during which architecture was thought to consist in features and ornament, many of them useless and all of them expensive, but in these days, when sounder views prevail and it is recognised that the art is in the lay-out of a building or of a town, and consists in the nice adjustment of means to an end, in form and proportion rather than in ornament, the public, we hope, will begin to realise that an artistically-arranged scheme may even prove to be the most economical.

We cannot, however, altogether follow Mr. Hayler in thinking that "a particularly objectionable proceeding which is frequently observed is the setting back of buildings in the centre of a block and the bringing forward of the two end buildings." It depends a good deal, we suppose, on how it is done; it does not necessarily follow that "the street line is spoiled." We see no harm in occasionally breaking up the horizontal line of too lengthy a street by a recess. The sketch we publish below shows a legitimate treatment which has the advantage of introducing groups of trees when otherwise they might be impossible.

THE feeling that "something must be done" with regard to Holyrood and the adjoining portions of the old Canongate suburb seems to persist. Sir Rowand Anderson, writing to the *Newsman* of July 10, associates himself with the opposition to Treasurer Leishman's proposal to build a new Palace to take the place of the old—a proposal that seems to involve the "tidying up" of the old property in the neighbourhood. To begin with, as Sir Rowand Anderson remarks, "No new Palace, however up-to-date, can be to the people of Scotland, from the King to the peasant, what Holyrood is" which is sufficiently plain. And his further objection, "If Holyrood is to be deserted for a new Palace, what is to become of the present building?" is not necessary to accentuate the general consciousness of the importance of Holyrood historically as a visual nucleus of right conceptions, and sociologically as an actual branch on the tree of the nation's life. It is strange that the matter should be left to the architects to the extent that it is. But when one comes to consider the small old houses round about it as a setting to the Palace, surrounding it with its right atmosphere, maintaining for it its just scale, and enhancing all its qualities through the channels of many associations of ideas, the civic architect is in a province entirely his own. We find ourselves in agreement with Sir Rowand Anderson in his view that the group of old houses on the north side, one of the most interesting remnants of Old Edinburgh, should be purchased and brought back to their original conditions. In conclusion, to quote from Sir Rowand Anderson's letter, "Let warning be

taken by what the Carnegie Trustees have done in Dunfermline. At the west end of the Abbey Church there remained up till very lately a picturesque group of old houses, one of the most interesting of the remnants of old Dunfermline. The houses here were quite capable of being renovated and made use of. In colour, grouping, and scale they added greatly to the appearance of the old Abbey, and toned beautifully with it. The entrance to Pittencrieff Dell has been robbed of much of its interest by their removal. All that the Trustees have had to offer in place of this is a large gable built of white firebrick, staring and discordant with all its surroundings. Let us hope Edinburgh will not be guilty of such a piece of vandalism."

The National Trust.

THE National Trust appeal for contributions wherewith to acquire, at a price of 200*l*, the Old Priest's House at Muchelney, co. Somerset, which constitutes an almost untouched example of XVth century domestic architecture. The fabric, of local blue stone, and faced with yellow Ham Hill stone, needs repair, which, it is stated, would be effected at the charges of the Society for the Protection of Ancient Buildings, if the structure is taken over by the National Trust. Two members—Dr. Jamieson Hurry, of Reading, and Mrs. Jamieson Hurry, have agreed to purchase from the Earl of Derby, at a price of 1,000*l*, for presentation to the Trust, 34 acres of Carter's Hill, near Sevenoaks—known as One Tree Hill—whereof the solitary beech-tree forms a conspicuous landmark, and which affords a fine prospect extending from Crowborough and Ashdown Forest to the heights of Dover. The Trust seek to raise 300*l*. wherewith to purchase the chapel of the Chantry of SS. John the Baptist and Thomas à Becket, founded in Buckingham by Archdeacon Stratton in 1268. The chapel subsequently became the schoolroom of Edward VI.'s Grammar School. The original entrance, a Norman arched doorway, has been preserved. Mr. Ingham Whitaker, of Grayshott Hall, has presented to the Trust the strip of frontage, 20 acres, that lies between the high road from Grayshott to Headley and Ludshott Common, which is one of the thirty-five properties now belonging to them.



Recessed Frontages in Highways.

THE BUILDING TRADE.

SOME LEGAL QUESTIONS ABOUT EXTRAS.

IT is not too much to say that most of the disputes which arise between builder and building owner involve the discussion of the question: Who is liable to pay for extras? The building owner wants to have his work carried out for a sum certain in money. The man who has decided to build a house for 3,000*l.* does not like to have to pay 3,500*l.* The builder, employed by him, who has tendered for the work at 3,000*l.* has probably, under the stress of competition, cut his figures rather fine, and cannot afford to do extra work without extra remuneration. Acting as intermediary between the two, the architect has to try to please both. For his own credit's sake he wants to finish the work in the best possible style and he may, therefore, be tempted to use such authority as he has in the matter of extras to enable the builder to execute the many little improvements which suggest themselves while the building is going forward. It will be said, of course, Why should not these things be all worked out beforehand? But it is easy to be wise after the event.

The broad legal principle which underlies every contract for the erection of buildings is easy to understand and easy to enunciate. If a builder agrees to erect a certain number of houses of certain materials for 1,000*l.* he can be compelled to carry it out to the letter. If he finds that he has to spend 1,500*l.* to do the specified work, that is his misfortune. On the contrary, if there is a sudden fall in prices which enables him to do it for 500*l.*, that is his gain and the employer's loss. In the simple case suggested, the question whether any particular piece of work or the use of a certain kind of material was something *dehors* the contract might have to be settled in a court of law. For convenience and simplicity, however, the plan has been devised of leaving the question, "Extra or not?" to the decision of the architect, and the customary forms of contract make elaborate provision for the methods by which extras shall be ordered and paid for.

It is proposed in the present article to consider some of the points which arise in relation to extras—even when the contract is in the most approved form—the form, for instance, which has been sanctioned by the Royal Institute of British Architects.

Clause 12 of that contract provides that: "The contractor shall, when authorised by the architect, or as provided by Clause 5, vary by way of extra or omission from the drawings or specification; such authorisation is to be sufficiently proved by any writing or drawing signed by the architect or any subsequent written approval by him, but the contractor shall make no variation without such authorisation. No claim for an extra shall be allowed unless it shall have been executed under the provisions of Clause 5, or by the authority of the architect as herein mentioned. Any such extra is hereinafter referred to as an authorised extra."

The Clause 5 which is referred to in this clause is that which provides that the contractor must make such variations as may be necessary in order to comply with local by-laws, etc. Before making such variations he must obtain the sanction of the architect.

As regards other variations "by way of extras and omissions" it is clear that Clause 12 imposes a duty upon the contractor to make them when the architect tells him to do so. In the exercise of the power so conferred the architect might easily deprive the contractor of a very profitable piece of

work by telling him to omit it; or he might direct the execution of a very large amount of work. This clause makes it plain that no extra or omission shall be considered unless sanctioned by the architect in writing.

Elaborate provision is made by Clause 13 of the same contract for ascertaining the price of extras. The clause provides that:—

"No variation shall vitiate the contract; but all authorised extras for which a price may not have been previously agreed, and any omission which may have been made with the knowledge of the architect, or without his knowledge, provided he subsequently give a written sanction to such omission shall be measured and valued, as hereinafter provided, by (the architect or surveyor); and a copy of the bill or statement of such measurement and valuation shall be given to the contractor. The fees for so measuring and valuing the variations shall be added to the contract sum. If in the opinion of the architect the work cannot be properly measured and valued, day work prices shall be added therefor, provided that vouchers specifying the time and materials shall have been delivered for verification to the architect, or his nominee, at or before the expiration of the week following that in which such work shall have been done. The valuation shall be valued at the rates contained in the priced bills of quantities, or, where the same may not apply, at rates proportionate to the prices therein contained. The amount to be allowed on either side in respect of the variations so ascertained shall be added to or deducted from the contract sum as the case may be.

It will be seen by this clause the builder submits himself entirely to the judgment of the architect—subject, however, to the right of the builder to have the matter referred to arbitration in accordance with a subsequent clause in the agreement.

Much importance attaches to the power which the clause above referred to (Clause 12) gives to the architect to vary the works, especially having regard to a case decided in the Court of Appeal last year, which, owing to the fact that it is not reported in the "Law Reports," is not very generally known. It was formerly held that the power to order extras gave no power to vary the design of the work. This was the result of the case of *R. v. Peto* (1826), 1 *X. & J.* 426). Dealing with the "extras" clause in that case, Alexander, C.B., said: "Everyone who is at all conversant with building knows that, in the course of building, it occurs sometimes to add and sometimes to desire that certain things may be omitted; this appears to have been in the contemplation of those who prepared this instrument; and accordingly they have introduced that clause, which was clearly inserted to prevent in the first place any such direction affecting the rest of the contract, and in the next place to provide for the manner in which the contractor was to be paid in case that event should happen. After reading the clause, he said: 'Is it possible that this clause was intended to give to the surveyor, a person who ought to be in general but an overlooker of the owner, to see that the work is accurately performed, a power to vary the whole scheme of the building; or if it were so intended, that it could have been expressed in such language? In sound construction it should be limited to that to which the condition has confined it, namely, to such extra works as may be done, or something which is to be omitted; but it cannot refer to the substitution of one thing for another, more especially anything so important as the making the foundation on which the whole validity and security of the building depends.'"

In *Stephens v. Mewes* (Court of Appeal, June 7, 1910) the plaintiff had contracted with a firm of builders, who were erecting a building, to sink an artesian well to supply this building with water. Under his contract the plaintiff was to sink the well to a depth of 550 ft., but when the work was being carried out the boring tube broke at a considerable depth below the surface. It was found impossible, but fortunately it was unnecessary, to continue the boring, for by means of an air lift pump sufficient water could be raised. The use of an air lift pump being decided upon by the building owners, an order was given to the plaintiff by the defendants, who were architects to the builders, to put in the air lift pump. Having so put it in, he sought to make the architects personally liable on the contract, but it was held that he could not do so. Dealing with the case of *R. v. Peto* (*supra*), Lord Justice Fletcher Moulton pointed out that in that case there was no power to vary or alter, but there was only a power to direct extra work and direct omissions. Accordingly the judges in that case said that the finding of the jury that the clerk of the works directed the builders to vary the piling was not in accordance with the strict language of the bond.

Lord Justice Fletcher Moulton then said: "It was based on the fact that the word 'vary' was not there. If the word 'vary' had been there, the alterations in the mode of piling would probably have been covered by it, but they (the court) said, 'You have neither proved authority, because it is not within the condition of the bond, nor have you even averred that the variation was in the nature of an addition or omission so as to bring it within the meaning of the language of the bond.' Therefore, I cannot see what other conclusion they could have come to. They decided that, *non obstante veredicto*, the Crown were entitled to succeed. It was a decision certainly that in the absence of the word 'vary' you must prove that this change may be fairly considered to be an addition or an omission, and if you cannot do that you fail, but it is no decision as to what the powers of an architect are when there is an express power to vary. Now I quite agree that 'vary' means not so as to destroy the scheme of the whole thing, but, in my opinion, to substitute for one well-known piece of machinery an equivalent, equally well known, doing exactly the same work—certainly a different one, just in the same way as if you ordered a Dean pump and then you made up your mind subsequently to use a different pump. In my opinion, I am satisfied that this is within the language of the word 'vary,' and I am still further satisfied that the case of *Rex v. Peto* has nothing whatever to do with this case, and I think I may say has nothing to do with any modern contract of this kind in which a power to vary is almost always expressly given." (The above extract from the judgment is taken from the shorthand note which is in the writer's possession.)

In the light of this judgment it becomes a nice question how far an architect has power to bind the building owner by making alteration in the materials to be used in the construction of a building. It is a general rule that an architect cannot order extras without authority. In other words, the cost of extras done pursuant to an order which an architect has not authority to give cannot be recovered from the employer. For instance, in *Cooper v. Langdon* (1841, *M. & W.* 60) a builder was sued for not building a house in accordance with his contract. He pleaded that he deviated from the drawings, etc., by the direction of the architect. It was held that this was no

answer to the claim, as it was not proved that the architect had power, under the terms of the contract, to bind the employer by allowing deviations from the drawings.

Again, in the case of *Betts v. Piekfords* (1905, 2 Ch. 87) it was held that an architect who was employed to superintend the building of a house in accordance with approved plans has no implied authority to allow adjoining owners to build the projecting ends of their stanchions and roof beams into the wall of the house.

Questions as to the authority of the architect may be settled by a suitable clause in an agreement between the architect and the building owner. Thus in one form which is sometimes used it is provided that: "The said architect will be at liberty to vary architectural details provided such variations do not involve extra cost, but shall on no account incur any increased expenditure without the sanction of the said employer in writing."

Under well-known principles of the law of agency the architect may render himself personally liable for the value of extra work executed by the builder, if he expressly or impliedly, without having such power, represents to the builder that he has the authority of the employer to order such work—*Randall v. Trimen* (18 C. B. 786).

In a recent Scotch case (*Robertson v. Jarvie* (45 S. L. R. 280) a question arose as to the authority of an architect to order extras. It appeared that the plaintiff offered to do certain work for the defendant for a lump sum. The schedule annexed to the plaintiff's estimate provided (*inter alia*) that "the work to be done . . . to the entire satisfaction of the proprietor or architect, who will be at liberty to make alterations, and to increase, lessen, or omit any part of the work . . ." The defendant accepted the offer, and on completion of the work the architect certified that the plaintiff was entitled to a sum, which, owing to extras, exceeded the lump sum. In an action brought to recover the balance the plaintiff averred that the extra work had all been authorised by the defendant's architect, and that his certificate was final. In his defence the defendant denied that the extra work had been authorised by his architect, and said that his architect had no power at his own hand to authorise it, and that the whole work executed did not, in many respects, comply with the contract. It was held that, as the architect was not by the contract made an arbitrator, there must be an inquiry as to the question whether the additions and alterations had all been authorised by the architect. It was held, further, that, assuming that fact to be proved, the defendant could not at least, in the absence of very specific arrangements, object to the architect's final certificate, he having been allowed to act as measurer. Lord McLaren gave utterance to the following dictum: "I think that there can be no doubt that within the scope of his employment, an architect is the proprietor's agent; and if the building contract provides that the work is to be done to the satisfaction of the architect, then any order within the scope of the contract which the architect may give is a sufficient authority to the tradesman to execute the work, because he is entitled to take the order of the agent as equivalent to the order of the principal." Applying the principle of this case to the position of a consulting engineer, it would seem that, if he has any discretion to increase the amount of work set out in the specification, he may render his employer liable.

It stands to reason that where the contract expressly provides that extras shall be authorised in writing the contract must be strictly adhered to. So where a clause stipulates that for all extra work written directions shall be given by the architect; a sketch made by the architect, and not signed by him, is not such a direction as complies with the contract, nor are the mere oral directions of the employer to do some

increased work, in the absence of proof of a new contract.

But it should be borne in mind that the extra work ordered may not be an addition within the meaning of the original contract, but may be entirely *dehors* the same, amounting to a new contract; in which case a written order would not be necessary to entitle the builder to maintain an action for the work.

It remains to consider the not uncommon case of an employer or building owner himself intervening to order extras. He appears on the job, sees something which does not please him, and directs the builder to alter it. If it is alleged that the order was given by the employer, the contractor, suing for work extra, the original contract must not only put in that contract, if in writing, but also prove a separate and distinct one with the employer to do the work sued for. If the builder has done extra work without any authority from the employer the latter will not be bound to pay for it.

The mere fact of the employer having assented to certain alterations is not sufficient to make him liable to pay for them as extras, unless he is either expressly informed, or must necessarily, from the nature of the work, be aware that the alterations will increase the cost. But where it was shown that in the progress of building some process more expensive than that contracted for was ordered by the architect, with the knowledge of the employer, who was present at the time, and the builder's sub-contractor was told that it was to be charged as additional work, it was considered that there was sufficient evidence of a contract to pay the builder extra for it, and of authority in the architect to make such a contract with him.

BUILDING PLANS AND BUILDING PROSPECTS.

THE returns obtained from certain local authorities as to the building plans approved by them have been used from time to time by responsible members of the Government as showing that recent legislation has not handicapped the building trade and as indicating improved conditions. In view of this contention the latest returns published in the Board of Trade Labour Gazette have some significance. The second quarter of 1911, as compared with the second quarter of 1910, shows a decrease in money of 356,143*l.*, or 8·2 per cent., and this decrease is practically confined to dwelling-houses. The Chancellor of the Exchequer claimed for the new taxation that it would bring land into the market and foster building enterprise. The land has come into the market, but these figures show that building enterprise has not been stimulated, and in view of the uncertainty attaching to the valuation of house property for the purpose of collecting increment value duty it is not to be wondered at that the public are chary of investing in a form of property subject to arbitrary and uncertain taxation. The land dealt in has been agricultural land, which is not subject to the same onerous conditions as building land. The decrease in building plans is most marked in Outer London, where the decrease amounted to 36·3 per cent., and in this district the decrease is not confined to dwelling-houses, but is shown in every class of building—factories, shops, churches, schools, etc., the only head showing any increase being classified under "other buildings, additions, and alterations." In such a district it may be assumed that all land and buildings are subject to increment, and this falling-off in building activity is not without significance. We have always maintained that taxation of buildings, if imposed at all, should be imposed with some reference to actual values which can be ascertained and checked by ordinary business men on business principles. The present basis of site value and the chimerical increment value deduced therefrom offend against all the principles of sound taxation, and the building trade must increasingly feel the effects of arbitrary taxation.

LONDON ASSOCIATION OF MASTER STONEMASONS.

THE London Association of Master Stonemasons held their first annual outing on Wednesday, the 19th ult., and were the guests of the Bath Stone Firms, Ltd., and the Yockney and Hartham Park Stone Company, Ltd. Arriving at Bradford-on-Avon, they inspected the old Saxon church, which dates from the year 680, and is considered the finest and best-preserved church in the country of that period. Afterwards, the more modern one, dating from 1166, was inspected. Kingston House was also visited by permission of Mr. I. Moulton, J.P., C.C. The house, which is said to be the finest specimen of Jacobean architecture in the country, was built in 1590, faced with ground stone, and it is a good object-lesson in durability.

At Farleigh Castle the Old Chapel and relics were seen, and the party then returned through Combe Down to Bath, where various buildings were visited. At the Pump Room, Mr. Silcock, the Mayor of Bath, welcomed the party, and said that from Bath came a large amount of the stone which was used by the London master stonemasons. Mr. Carben, the President, thanked the Mayor on behalf of the visitors; Mr. Stephen Collins, M.P., Vice-President (himself a master mason) seconded the vote.

Mr. Courtney, J.P., then proposed a vote of thanks on behalf of the members to the Bath Stone Firms, Ltd., and Yockney and Hartham Park Stone Company, Ltd., for their hospitality, and for the very enjoyable day they had all spent; Mr. Frank Morimer seconded the resolution, Mr. Cotterell and Mr. Lucas responding for their respective firms. Mr. Cotterell conducted the company around the old Roman baths, explaining to them the history of Bath.

A vote of thanks was passed to Mr. Cotterell for his explanation, and a vote of thanks and regret was next passed to Mr. Walpole Collins, the Hon. Secretary, who was absent owing to illness.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.

A HALF-YEARLY general meeting of the National Federation of Building Trades Employers of Great Britain and Ireland was held on the 26th ult., in the King's Hall of Armstrong College, Newcastle. Mr. J. W. White (Sunderland), the President of the Federation, was in the chair, and there was a large attendance of members of the Council and of the Northern Counties Federation.

The Secretary (Mr. A. G. White) reported that the Council on the previous day had considered Federation finance, and had referred the matter back for further consideration, with the rider that the Federation should be debited with 50 per cent. reduction of the contribution to the reserve fund for this year only.

Mr. Blackburn (Newport) spoke of the labour troubles in South Wales, where 50,000 miners were out, and where the seamen's strike had practically stopped the building trade. The effect of the Council's decision was to reduce the contributions to the reserve fund from 6*d.* to 4*d.*, a resolution to which he was opposed. They had nothing with which to assist, say, the builders in South Wales, and he urged they should not be mean in their contributions, but should have money at their backs in the bank.

The Council's recommendation was adopted. The Secretary read the Council's interim report, which stated that the official relations with the operatives were satisfactory, although there had been, in some districts, indication of unrest and revolt against trade union leadership, and it was probable that the conciliation scheme would be severely tested. It was necessary that the employers' organisation should be ready for any eventuality. Trade continued to improve slowly, but in many districts there were complaints of a dearth of business.

Mr. Jas. Wright (Nottingham), Vice-President, alluded to the statement in the report that the conciliation scheme was likely to be severely tested. He believed that would be so, especially if trade improved, as they hoped it would. In Nottingham, for instance, the joiners, who had got an advance of wages through the medium of the conciliation scheme, were sympathetic to men who were on strike, and were not represented on the Conciliation Board. He urged the local associations to be ready for any emergencies that might arise.

Mr. S. Smethurst (Oldham) believed that the trouble at Nottingham would be away. Alderman W. H. Jessop (Huddersfield) moved, and Mr. Richard Heslop (Newcastle) seconded, that, in view of the importance of the report it be printed and circulated among the local associations by the Federation.

Reports were presented on the National Insurance Bill, and the President said the Council's recommendation was that a deputation from the Federation and allied trades in building should ask the Chancellor of the Exchequer and the President of the Board of Trade to receive a deputation to consider certain aspects of the Bill which had an important bearing on the building trade. On the motion of Mr. Carl (Rochdale) it was agreed to ask the Chancellor of the Exchequer and the President of the Board of Trade to receive a deputation.

Mr. Davidson (Leeds) moved the following resolution:—

"That this Conference of representatives of the National Federation of Building Trades Employers of Great Britain and Ireland, and the Allied National Association of the Painter, Slatting, Plastering, and Plumbing Trades regard with grave concern the many serious liabilities proposed to be imposed upon building trade employers by the National Insurance Bill, and strongly protests against its being applied to the building trade at the present time, and before any relief has been granted in respect of the heavy and ever-increasing cost of workmen's compensation insurance, and asks that the building trade be exempted from the operation of the proposed National Insurance Scheme, either entirely or for a period of at least three years, and that, meanwhile, an inquiry into the working of the Workmen's Compensation Acts be undertaken with a view to the passing of a remedial Act next year."

Discussion followed, and it was strongly urged that the builders from one end of the country to the other should voice their objection against the Bill. Several speakers thought that the exemption period of three years should be struck out of the resolution. Councillor Stephen Easton (Newcastle) suggested that there should be included in the Bill, workmen's compensation due to accidents not caused by the negligence of the employer.

Mr. W. Shepherd (London) thought it was a mistake to introduce any question about interfering with the Workmen's Compensation Act while the Insurance Bill was under consideration. He believed the latter would eliminate the benefit thrift societies of the country, and he was astonished that thinking people should give support to the scheme.

On a vote being taken an amendment to delete the words three years as the period of exemption was lost.

Mr. W. H. Hope (Sunderland), Secretary of the Northern Counties Federation, moved another amendment, as follows:—

"That this meeting of the National Federation of Building Trade Employers recognises the many grave defects in the National Insurance Bill, and the necessity for fullest investigation and necessary amendment, and while satisfied that the effect will mainly fall upon the employers, even if the cost is shared by the building owners, leaves the matter to the conference to put forward their case, with the object of amending the Bill on the basis recommended."

The amendment was carried almost unanimously, and the original proposition was therefore negatived.

GENERAL BUILDING NEWS.

PARISH CHURCH, BEDLINGTON.

Mr. A. B. Plummer, of Newcastle, is the architect for the improvements which are being carried out at this church. Messrs. R. & G. Brown, of Amble, are the builders, and the cost of the work is about 3,000l.

JOHN KNOX PARISH CHURCH, ABERDEEN.

Messrs. Wilson & Walker are the architects for this church, which is being erected at a cost of about 7,000l. The contractors are:—Mason, Messrs. Findlay & Henderson; carpenters, Messrs. Leslie & Hay; slaters, Messrs. Archibald & Leslie; plasterer, Mr. William Masson; plumber, Mr. John Worling; painters, Messrs. Gordon & Watt; heating, Messrs. Mackenzie & Moncur, Ltd.; electric work, The Aberdeen Electric Engineering Company.

KING'S COLLEGE, ABERDEEN.

Extensive additions are to be carried out at this college at an estimated cost of 10,000l. The architect for the work is Mr. A. Marshall Mackenzie, A.R.S.A., of Aberdeen, and it is expected that the buildings will be completed in October of next year.

NEW TRAINING COLLEGE, SWANSEA.

This building is being erected at an estimated cost of 40,000l., and will provide accommodation for about 200 students. The architect is Mr. G. E. T. Laurence, A.R.I.B.A., and the contractors are Messrs. Lloyd Bros.

NEW TOWN HALL AND PAVILION, TORQUAY.

The erection of the Town Hall is being carried out at a cost of about 28,869l., and the architect is Mr. Thomas Davison, of London. The builders are Messrs. Wilkins & Sons, of Bristol. The pavilion is being erected from the designs of Mr. H. A. Garratt, the Borough Engineer, and the contractor is Mr. Narracott, of Torquay, the contract price being 16,942l.

TOWN HALL, HAMPSHIRE.

The Mayor of Hampshire, last week, laid the foundation-stones of the extensions to the Town Hall, which are being carried out at a cost of 18,500l., including the site. The architect is Mr. John Murray.

NEW OPERA HOUSE, KINGSWAY, W.C.

The work of erecting this building was commenced in November last, and it is expected that it will be finished and opened in November next. The architect for the work is Mr. B. Crew.

NEW COUNCIL OFFICES, NEWBURN.

These offices have been erected from the designs of Mr. Edward Cratney, architect, and the contractor was Mr. Thos. Clements, of Newcastle. The electric installation is by Messrs. Robson & Coleman, Newcastle, and the carrying by Mr. G. Hughes, also of Newcastle.

TRADE NEWS.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to Fitzalan-street Church, Glossop. Under the direction of Mr. W. M. Scott, architect, Lindlithgow, the firm's system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to Bridgend School.

The Beckett Hospital, Barnsley, is being supplied with Shorland's double-fronted patent Manchester stoves, with descending smoke flues and patent Manchester grates, by Messrs. E. H. Shorland & Brother, Ltd., of Falsworth, Manchester. The Aberdare County School is being supplied with the firm's warm air ventilating Manchester grates.

In reference to the restoration of Lympne Castle and the knighthood conferred on Mr. R. S. Lorimer, the architect, we are asked to state that the whole of the restorations and additions were in the Chilmark stone of Messrs. T. T. Gething & Co., Ltd., London, and carried out by them. Messrs. Gething had a large staff of masons upon the site, and the work, being chiselled work, so as to be in character with the old work, was carried out upon the site at the desire of Sir R. S. Lorimer.

ACCIDENT AT CHELSEA.

An accident occurred in Bramerton-street, Chelsea, on Monday evening last, caused by the collapse of about 180 ft. of solid stone and brick coping from the front of nine houses. These houses are four stories high, and the coping was about forty or fifty feet from the ground. The greater part of the small balconies over doorways and windows were carried away, and the railing in front of the houses was completely demolished. Fortunately there were no serious results.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with (the names of the applicants are given in parentheses).

Lines of Frontage, Projections, and Construction.

Islington, North.—An iron and glass shelter in front of the proposed entrance to Highgate-railway-station, Highgate-hill, Islington (Mr. W. E. Mandelick for London Electric Railway Co.).—Consent.

Rotherhithe.—Three wooden notice boards of a temporary character in front of Nos. 46 and 48, Lower-road, Rotherhithe (Mr. S. J. H. Stuart for the trustees of the Rotherhithe Great Hall).—Consent.

Width of Way, Lines of Frontage, and Construction.

Hampstead.—Temporary building at No. 1a, Greville-place, Hampstead (Mr. F. T. Verity).—Consent.

Holborn.—Iron and glass shelter on the eastern side of Fulwood-street, at the Chancery-lane tube railway station (Messrs. John Leaning & Sons for Mr. H. J. Leaning).—Consent.

Space at Rear and Projections.

Southwark, Wist.—Building on the north-eastern side of Green-street, Southwark, between Ripley-buildings and St. Alphege Paris Hall, with an irregular open space about such building and with a projecting hood over the entrance doorway in Green-street (Mr. J. G. P. Meadon for Mr. W. J. Tapper).—Consent.

Space at Rear.

Chelsea.—Conversion of No. 214, Pavilion-road, Chelsea, into a domestic building (Mr. J. Hudson).—Consent.

Hammersmith.—Building at the rear of No. 300, Latimer-road, Hammersmith (Horsman, Ltd.).—Consent.

Kensington, North.—Addition at the rear of No. 11, Lansdowne-road, Kensington (Mr. E. W. Marshall for Mr. E. Davis).—Consent.

Whitechapel.—Erection of No. 135, Buxton-street, Whitechapel (Mr. D. Davis).—Consent.

Uniting of Buildings.

City of London.—Formation of additional openings between Nos. 26 and 27, Ivy-lane, Paternoster-row, City (Mr. F. Hooper for Messrs. Southwell & Co.).—Consent.

Openings uniting Nos. 42 and 44, Stoke Newington-road, Hackney (Messrs. Gordon Wilson & Co. for Mr. Max Miller).—Consent.

Cubical Extent.

City of London.—Alterations to the northern block of the premises of Waterlow Brothers & Layton, Limited, on the eastern side of Broken Wharf, City (Messrs. Francis Chambers & Son for Waterlow Brothers & Layton, Ltd.).—Consent.

Lines of Frontage and Projections.

Chelsea.—Addition to the South-Western Polytechnic to abut upon the western side of manure road and the southern side of Traill-square, Chelsea (Mr. F. G. Knight).—Consent.

Chelsea.—Wood and glass conservatory over the porch at No. 33, Tedworth-square, Chelsea (Messrs. F. Foxley & Co.).—Consent.

City of London.—Wooden cornice at No. 56, Finchchurch-street and No. 82, Mark lane, City (Messrs. Jackson & Son).—Consent.

Greenwich.—One-story building, used as an electricity transformer chamber, in front of St. Peter's Church, Bridge-street, Greenwich (London Electric Supply Corporation, Ltd.).—Consent.

Hampstead.—Projecting iron and glass porch in front of No. 24, Ferncroft-avenue, Hampstead (Messrs. J. Laycock & Bellamy for Mr. J. McCormack).—Consent.

Hampstead.—Erection of buildings on the western side of Finchley-road, Hampstead, abutting also upon the northern side of Weech-road (Mr. H. A. Volkin).—Consent.

Hampstead.—Erection of buildings on the western side of Finchley-road, Hampstead (Mr. T. M. Garrod).—Consent.

Hampstead.—Addition to the Hampstead Town Hall, Haverstock-hill, Hampstead (Mr. J. Murray for Metropolitan Borough Council).—Consent.

Lewisham.—Five houses with porches and bargeboards on the eastern side of Siddons-road, Forest-hill (Mr. A. R. Westworth for Mr. E. C. Christmas).—Consent.

Lewisham.—Addition to a conservatory on the eastern side of No. 120, Stanstead-road, Lewisham (Messrs. J. Brazier & Sons).—Consent.

Lewisham.—Wooden notice board on the forecourt in front of No. 184, Lewisham-road, Lewisham (Mr. J. Webster for Mr. A. J. Luks).—Refused.

Marylebone, East.—Porch in front of No. 20, Henrietta-street, St. Marylebone (Mr. G. Hornblower for Messrs. Marshall & Snelgrove, Ltd.).—Consent.

Paddington, South.—Addition in front of No. 22, Hyde Park-gardens, Paddington (Mr. W. Melbourne for Mr. J. Buchanan).—Consent.

St. Pancras, N.—Buildings upon the site of Nos. 155, 159, 161, 163, and 165, Euston-road, St. Pancras (Messrs. Francis Howse & Eve).—Consent.

Strand.—Projecting sign at No. 3, Long-acre, Strand (Messrs. Windovers, Ltd.).—Consent.

Wandsworth.—Wooden porches, oriel windows, bay windows and overhanging gables to twenty-six houses in Downton-avenue, Streatham-hill (Mr. J. Copp).—Consent.

Wandsworth.—Projecting sign at the motor garage adjoining No. 109, Streatham-hill, Wandsworth (Mr. M. T. E. Jackson).—Consent.

Westminster.—Erection of a building on the southern side of York-street, Westminster.

eastward of No. 69, York-street (Mr. F. B. Elmer for Messrs. Watney, Combe, Reid, & Co., Ltd.).—Consent.

Westminster.—Projecting porch in front of No. 59, Victoria-street, Westminster (Mr. J. C. T. Murray for National Penny Bank, Ltd.).—Refused.

Alteration of Buildings.

Chelsea.—Additional story at Nos. 7 and 8, Moore-street, Chelsea (Messrs. Allen & Manooch, Ltd., for Mr. E. Gilchrist).—Refused.

City of London.—Stories at Nos. 94 to 96, Bishopsgate, City (Mr. H. Chatfield Clarke).—Consent.

City of London.—Alterations at Nos. 28 and 29, Cheapside (Mr. R. M. Roe for Sir Tolle-mache Sinclair).—Consent.

Hampstead.—Additional story at the rear of No. 1, Lithos-road, Hampstead (Mr. G. E. Ellis for Mrs. M. A. Ellis).—Consent.

Kennington, North.—Water-closet additions at the rear of Nos. 21, 23, and 35, St. Ervan's-road, Notting-hill (Messrs. F. Boreham, Son, & Gladding for Mr. Sudds).—Consent.

Formation of Streets.

Westminster.—Formation or laying out of a street for carriage traffic to lead from Dartmouth-street to Matthew Parker-street, Westminster (Messrs. Lancaster & Richards).—Refused.

Woolwich.—Formation of streets on the Eltham Park Estate, High-street, Eltham (Mr. R. Stewart for Mr. A. Cameron Corbett).—Consent.

Deviations from Certified Plan.

St. George, Hanover-square.—Erection of a building upon a site abutting upon Curzon street and Clarges-street, St. George, Hanover-square, projecting balcony on the Curzon-street frontage of the proposed building (Mr. P. Hoffman).—Consent.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

BARLEY.—School and teachers' house (2,300l.); Mr. A. Stone, builder, Selby.

Barnstable.—Swimming bath (1,200l.); Mr. E. G. Saunders, Municipal Offices, Barn stable.

Bedlington.—Alterations and additions at parish church (3,000l.); Mr. A. B. Plummer, architect, Newcastle; Messrs. R. & G. Brown, builders, Amble.

Bolton.—Extensions to Townley's Hospital (27,250l.); Messrs. William Townson & Sons, builders, Park Hill-street, Bolton.

Bream, Double View, East Dean, and Ruar Dean.—Extensions to county schools (5,000l.); Mr. R. S. Phillips, The Cross, Gloucester.

Bridlington.—Extensions to grammar school (3,600l.); Mr. Bilson, architect, care of Mr. J. J. Bickerstell, Secretary, Education Committee, East Riding of Yorks County Council, Beverley.

Brightlingsea.—Shops, etc., Station-road, for the Brightlingsea Co-operative Society.

Brighton.—Underground lavatory, Queen's-road (5,000l.); Mr. Hugo Talbot, Borough Surveyor, Brighton. Winter garden at Palace Gardens; Messrs. Clayton & Black, architects, 10, Prince Albert-road. Electric theatre, North-road; Mr. S. Carden, architect, North-street, Brighton.

Brentford (Middlesex).—Electric theatre, Half Acre; Messrs. Emden, Edgar, & Co., 2, Lancaster-place, W.C.

Castleford.—Proposed Sunday-schools and church institute; Vicar, Parish Church, Castleford.

Chesham.—School (7,150l.); Mr. J. Mead, builder, Berkhamstead-road, Chesham, Bucks.

Clogher.—Fourteen houses (1,950l.); Mr. J. Bloomfield, builder, Brookeborough.

Coccybryn.—School (4,000l.); Mr. D. Pugh Jones, 62, Charles-street, Cardiff.

Cosham.—Additions to Wessex Royal Garrison Artillery Drill Hall (650l.); Messrs. Rake & Cogswell, architects, Prudential buildings, Commercial-road, Landport, Portsmouth.

Commercial-road, Landport, Portsmouth. Church, corner of King-street and Methodist road; Messrs. Watkin & Adams, architects, Burslem; Messrs. J. Broadhurst & Son, builders, Burslem, Staffs.

Cutterick.—Primitive Methodist church; Mr. H. Howarth, 20, Greenbank-road, Darlington.

Darlington.—Alterations to school, Easing-ton-lane, and school, Bearpark (5,000l.); Messrs. Clark & Moscrop, architects, Foothams, Darlington.

Darlington.—Extensions to Gott School (2,000l.); Mr. T. W. Williamson, 6, Hillhead, Lerwick.

Doncaster.—Club premises, St. James's-street, for the Doncaster Liberal Club.

Woolen mills for Messrs. Anderton & Son, Ltd., Cleckheaton.

Durham.—Additions to substation for the County of Durham Electrical Power Distribution Co., Ltd.

Dyce (Aberdeenshire).—Extensions to school (2,250l.); Mr. J. A. Allan, 5, Union-terrace, Aberdeen.

Earby (West Riding, Yorks).—Fire station; architect, Earby Urban District Council.

Eastington Colliery.—School (5,000l.); Mr. T. Marson, 77, Westgate-road, Newcastle.

Eastbourne.—Plans have been passed for Mr. W. Symington for additions to Martello Laundry, Allfrey-road, The Crumbles; Mr. Andrew Ford, architect; Mr. Mark Hookham, builder.

Eccles.—The following plans have been passed:—Alterations to premises No. 155, Cromwell-road, Patricroft, for Messrs. Joseph Chapman & Sons. Laboratory at Barton Hall Engine Works, Gorton-street, Peel Green, for Messrs. L. Gardner & Sons, Ltd.

Exmouth.—Railway station, London and South Western Railway; Mr. J. Hood, chief engineer, Waterloo-station, London.

Felling.—Proposed police court; Mr. W. Crozier, Surveyor, Durham County Council, Durham.

Fishburn.—Twenty-four houses for Messrs. Stobart & Co.

Forfar.—Improvements at baths; Surveyor, Forfar Town Council.

Forsbrook.—Proposed enlargement of St. Peter's Church; the Vicar.

Fraserburgh, N.B.—Alterations and additions to Royal Hotel; Mr. W. S. F. Wilson, architect, 6, Broad-street, Fraserburgh.

Fronwen.—School (3,000l.); Mr. D. Pugh Jones, 62, Charles-street, Cardiff.

Glamorgan.—Training College; Mr. G. E. T. Laurence, architect, London; Messrs. Lloyd Bros., builders, Argyle-yard, Oystermouth-road, Swansea.

Glennoriston.—Paris church (5,000l.); Mr. A. Grant, architect, Queensgate, Inverness.

Griffin (Carnarvonshire).—Schools (3,400l.); Mr. R. L. Jones, architect, Market-street, Carnarvon.

Haverthwaite.—Four houses for the Leven Valley Co-operative Society.

Hosking.—Hospital; Mr. J. E. Frank, architect, Spring-grove, Isleworth.

Howden.—School, Haigate; Mr. J. J. Bickerstell, Secretary, Education Committee, East Riding, Yorks. County Council, Beverley.

Irvine.—Additions at hosiery factory (2,000l.); Mr. Han Fran, High-street, Irvine.

Jarrow.—Entertainment hall; Messrs. Gibson & Steinlet, architects, King-street, North Shields.

Keighley.—Bank, etc., North-street, for Lloyd's Bank, Ltd.

Kybsbill.—Extensions to school; Mr. Hugh Thomson, architect, 60, Hamilton-street, Salt-coats.

Leeds.—Hostel for women (10,250l.); Messrs. H. Atkinson & Sons, builders, 2, Carlton-street, Leeds.

Leith.—Mission hall; Messrs. Hope & Son, builders, Counden.

Leith.—Extensions and additions to St. Mary's Star of the Sea Church; Rev. E. Callan, Pastor.

Little Heath.—Enlargement of school; Mr. F. Horner, Secretary, Education Committee, Coventry Town Council.

Llandrindod Wells.—School (3,000l.); Mr. R. Wellings Thomas, architect, Llandrindod Wells.

Llanelli.—Premises; Directors, Lloyd's Bank.

Lochee. Offices, Burnside-street, for the Dundee and District Co-operative Coal Corporation.

Low Westwood.—New school (5,000l.); Mr. Wood, Burnopfield, County Durham.

Manktown.—Extensions to school (1,800l.); Mr. W. Reid, Prestwick, Ayrshire.

Mexborough.—Proposed public baths; Mr. G. F. Carter, Surveyor, Mexborough Urban District Council.

Monmouth.—Proposed centre for mining instruction; Mr. T. G. James, Secretary, Education Committee, Monmouthshire County Council, Newport.

Muirhead.—School (8,000l.); Messrs. Thoms & Wilkie, architects, 46, Reform-street, Dundee.

Newbury.—Enlargement of grammar school; the Governors.

Newcastle.—Bank and office premises; Mr. W. H. Brierley, architect, 15, Lendall, York.

New Shildon.—Conversion of school into headquarters for Territorials; Mr. F. Chapman, architect, Newcastle; Mr. F. Moore, builder, New Shildon.

Normanton.—Headquarters, 4th Battalion Yorkshire Light Infantry; Mr. Fred Simpson, architect, Southgate-chambers, Wakefield.

Nuneaton.—Alterations to workhouse; Architect, care of Mr. G. Blakeway, Clerk, Board of Guardians, Nuneaton.

Paisley.—Nurses' quarters at poorhouse (2,500l.); Mr. James Donald, 98, High-street, Paisley.

Penn.—School (500 places); Mr. G. Balfour, Secretary, Education Committee; Staffs County Council, Stafford.

Peterborough.—Machine shop for Messrs. Werner, Pfeiderer, & Perkins.

Plymouth.—Church of St. Mary, Sutton-on-Plymouth (4,000l.); Sir Charles Nicholson, architect, New-square, Lincoln's Inn, W.C.; Messrs. Cowlin & Son, builders, St. Paul's, Bristol.

Pontypridd.—Infants' school, Trefoest (5,700l.); Mr. W. E. Lowe, architect, Pontypridd.

Portessie.—Extensions to cookery, laundry, etc., at school (2,000l.); Messrs. D. & J. R. McMillan, architects, 103, Crown-street, Aberdeen.

Portsmouth.—School, North End (20,000l.); Mr. A. H. Bone, architect, 148, High-street, Portsmouth.

Brulaws (Fife-shire).—Hall, British Church (1,850l.); Mr. R. W. Brown, Brulaws, Fife-shire.

Reading.—Additions to school, Wokingham-road (700l.); Mr. W. C. F. Anderson, Secretary, Education Committee, Berks County Council, Reading.

Redcar.—Pavilion; Mr. J. Howcroft, Surveyor, Redcar.

Rustington.—Enlargement of church schools (900l.); the Managers.

St. Austell.—Hospital; Messrs. Sedding & Wheatley, architects, Wadebridge; Mr. A. Carkeek, builder, Redruth.

St. Leonards.—Extensions to stores for Messrs. Thomas Usher & Sons, Ltd. (2,500l.); Mr. J. G. Adams, architect, 34, St. Andrew-square, Edinburgh.

Salford.—House, Bulehill Park, for Parks Superintendent (600l.); Mr. W. H. Matley, architect, Manchester. The following plans have been passed:—Extensions to tailoring factory, Bramley-street and Trafalgar-street, Broughton, for the proprietors. Extensions to North Manchester Grammar School, Tetlow-lane, Broughton, for the managers. Extensions, Black Horse Hotel, Chaney-street and John-street, Pendleton, for the proprietors.

Selby.—Extensions to works, Canal Bank, for the Yorkshire Dyeworks, Ltd.

Shoeburyness.—Extensions to church (3,000l.); Vicar, St. John's Church, Shoeburyness.

Southampton.—Offices and stores, Queen's-terrace, for Territorial Force Association; Mr. R. H. D. Bevis, Elm Grove-chambers, Southsea.

Spennymoor.—Proposed police court; Mr. W. Crozier, Surveyor, Durham County Council, Durham.

Stevenston.—School (2,000l.), for the Stevenston School Board.

Stoneferry.—Additions to works for the Hull Oil Co., Ltd.

Sunderland.—Parochial hall (2,000l.); Messrs. Frank Caws, Hill, & Caws, 22, Fawcett-street, Sunderland. Electric theatre; Mr. G. R. Smith, architect, Waterloo-chambers, South Shields.

Sutton Coldfield.—County buildings; Architect, care of Mr. Edward Field, Clerk, Warwickshire County Council, Warwick.

Swansea.—Extensions to power station, Straad (3,900l.); Messrs. Henry Billings & Son, builders, Trafalgar-yard, Oystermouth-road, Swansea.

Tewkesbury.—Extensions to High School (2,500l.); Mr. R. S. Phillips, architect, The Cross, Gloucester.

Troon.—Two houses, Morven-resident, and house corner of Beninck-drive and Lochend-road (3,800l.); Messrs. M. Muir & Co., builders, Troon.

Wakesfield.—Enlargement of Infirmary (8,000l.); Mr. H. Beaumont, Clerk, Board of Guardians, Wakesfield.

Walsend.—Institute (2,000l.); Mr. P. L. Brown, architect, Pearl-buildings, Newcastle.

Warrington.—The following plans have been passed:—Shop, Liverpool-road, for Warrington East Co-operative Society, Ltd.; office, Owen-street, for Messrs. Cunningham Bros.; motor house, Houghton-street, for the Alliance Box Co., Ltd.; additions to house, Wilderspool causeway, for Messrs. Greenall, Whiteley, & Co., Ltd.; alterations to premises, Norman-street, for the United Velvet Cutters' Association; seventeen houses, Barnard-street and Hehner-street, for Mr. T. Williams.

Warnley (Glos.).—Isolation hospital; Mr. H. M. Bennet, Surveyor, Warnley Rural District Council.

Wednesbury.—Institute; Mr. G. Balfour, Secretary, Education Committee, Staffs County Council, Stafford.

West Dean (Gloucestershire).—School (4,000l.); Mr. R. S. Phillips, The Cross, Gloucester.

Wheatley.—Additions and alterations to St. Mary's Church; the Vicar.

* See also our list of Competitions, Contracts, etc., on another page.

WESTMINSTER CITY COUNCIL.

At the usual fortnightly meeting of the Westminster City Council on July 27, the following, among other matters, were dealt with:—

Painting and Repair Work.—It was agreed to expend 388*l.* on painting and repairing work at City Hall, and 298*l.* on painting and pointing work at Caxton Hall. It was also agreed to expend an additional 138*l.* 10*s.* in making good the stonework at the latter hall. Messrs. Love & Co., of 35, Exeter-street, were entrusted with the work at the City Hall; the tender of Wright & Son, 27, Wild-street, Drury-lane, was accepted for the painting and pointing work at Caxton Hall, and that of the Stone Preservation Company for making good the stonework.

Replacement of Street Refuges.—The Works Committee, reporting on the question of replacing the street refuges removed for the Coronation Processions, state that they received a letter from the Commissioner of Police asking that the work might be deferred until he had had an opportunity of considering the suitability of the positions. The Commissioner had since sent another letter, in which he stated that he thought the majority of the refuges should be replaced as soon as possible, and suggesting six other refuges:—

(a) Piccadilly, necessity for two refuges in front of Devonshire House. (b) Pall Mall, south east corner of St. James's-street; temporary refuges. (c) Pall Mall East, south-east corner of Haymarket; permanent refuge in place of temporary one. (d) Strand from Adelaide-street. (e) Charing Cross, one or more refuges in vicinity of Drummonds Bank and Admiralty Arch. (f) Park-lane near Grosvenor Gate.

The work of reinstating the removed refuges and lamps was being proceeded with. The Council have informed the Commissioner of Police that they favour his suggestions with regard to the erection of refuges in the six positions above referred to, (a), (d), and (e) of which will be in place of refuges removed for the Coronation processions, and have asked him to furnish plans of the exact sites proposed.

METROPOLITAN WATER BOARD.

At the last meeting of the Metropolitan Water Board before the recess, on Friday last, on the recommendation of the General Purposes Committee it was agreed to employ the tender of Messrs. Johnson & Co., for 345*l.* to redecorate the Board's premises at Savoy House.

A New Tunnel under the Thames.—In order to safeguard the supplies of the western district of London, it was agreed, on the recommendation of the Works and Stores Committee, to approve of an estimated expenditure of 32,000*l.* in the construction of a tunnel under the River Thames, between Twickenham and Richmond. Advertisements are to be issued inviting tenders for the work. It is not anticipated that it will be necessary to use compressed air in constructing the tunnel, as the position chosen should ensure the whole length being below the surface of the London clay. It may, however, be necessary to drive a portion of the tunnel under compressed air owing, perhaps, to an unforeseen local scour in the ancient bed of the river, and in this event the prices for variations in the work comprised in the contract will be agreed between the Engineer and the contractor, or, failing agreement, be decided by arbitration.

MIDDLESEX COUNTY COUNCIL.

At the meeting of the Middlesex County Council on July 27, the Asylums Committee reported that in view of the number of married attendants at the Napsbury Asylum, and the increasing applications from single attendants desirous of obtaining permission to marry, they have come to the conclusion that steps should now be taken to provide twelve additional cottages there for married attendants. This was the more important owing to the scarcity of cottages in the neighbourhood of the asylum. The Committee also stated that they do not think it necessary to engage the services of an architect for this purpose, and they accordingly had plans prepared by Mr. C. J. Iles, who was principal clerk of works during the construction of the Asylum. The Committee expressed the intention of erecting six cottages as soon as possible, leaving the remaining six till a later date. The houses are to be built in blocks of three each, to contain five rooms and scullery. The total estimated cost is put at 3,003*l.* and

a recommendation from the Committee to the effect that they be authorised to enter into contracts for the erection of cottages was agreed to. The County Engineer and Surveyor has been instructed to obtain tenders for the formation of tar-paved and kerbed footpaths on the east side of Cowley (main) road, Viewless, between Philpots-bridge and Maygood's Farm, at a cost not to exceed 650*l.*, also on the north side of the Bath (main) road, Longford, between the "Peggy Redford" public-house and King's-bridge, at a cost not to exceed 365*l.*

The tender of Messrs. Wimpey & Co., at 304*l.*, has been accepted for the formation of a footpath on the west side of Edgware (main) road, Edgware, between Hendon Union Work-house and a point 450 ft. in a southerly direction. Plans of the proposed Council School in Highfield-row, Winchmore-hill, to accommodate about 1,200 scholars, have been approved. The Education Committee have been authorised to obtain tenders for the erection, in the first instance, for one department providing accommodation for about 400 scholars. Plans have also been approved of the proposed enlargement of the Holly-road Council School, Friern Barnet, to accommodate 800 scholars, and tenders are to be obtained for the re-erection at present of only one department, providing accommodation for about 400. The tender submitted by Messrs. W. Lawrence & Son, Finsbury-circus, E.C., amounting to 1,622*l.*, has been accepted for altering and enlarging the Edgware Council School.

LEGAL COLUMN.

Water Communication Pipes and Fittings.

The case of *Batt v. Metropolitan Water Board*, upon which we commented in our issue for March 10, has now been carried to the Court of Appeal, and the decision there delivered is of the greatest importance to householders.

A lady had caught her foot in a water stop-cock case, and sued the defendants for damages. Section 8 of the Metropolitan Water Board (Charges) Act, 1907, compels the Water Board to furnish the owner or occupier of any house in the district with a sufficient supply of water for domestic purposes, "by means of a communication pipe and other necessary and proper apparatus to be provided and laid down and maintained by him." The County Court Judge had held this Act to be retrospective, and to apply to existing fittings, and that, therefore, the owner or occupier of the house would be liable for any defect, and not the Water Board. The Divisional Court reversed this decision, holding the Act, not to be retrospective, and that the Board was, by decided cases, liable to repair those connections existing before the Act came into force. The Court of Appeal have overruled this decision, holding the Act to apply to all existing fittings. Lord Justice Vaughan Williams came to this conclusion with some hesitation, as he believed the former legislation proceeded on the principle that the liability of the owner or occupier was limited to pipes and fittings on or about the premises; but he was constrained by the general words used in Section 8 of the Act of 1907, "necessary and proper appliances," to abandon any such limitation, and the result of the decision is that the Metropolitan Water Board (Charges) Act, 1907, by this Section, and by conferring powers on householders to bank up the highway for the purpose of repairing communication pipes, Section 19, has transferred the whole liability for their maintenance to the owner or occupier of the houses.

This decision is highly unsatisfactory, as the water charges are higher than they used to be, and yet the Water Board is relieved from liability in respect of the necessary connections in public highways. Modern municipal legislation proceeds too much in the direction of imposing liability on private shoulders, and the ratepayers are reminded of the old saying that if you keep a dog they should not be expected to bark themselves.

LAW REPORTS.

CHANCERY DIVISION (Mr. Justice Eve.)

Rights under the London Building Act. Carden v. Layton.

THIS case again came before the Court on motion by the plaintiffs, the Trustees of William Carden, deceased, the freeholder, to restrain the defendant, a builder, from thickening and underpinning a party wall on

the south side of the plaintiffs' premises, 19, Goswell-road. As the parties were unable to agree on a settlement, or an order, the motion had to be fought out.

Mr. Clayton, K.C. (with him Mr. Corzens-Hardy), said he complained that the defendant had interfered with the plaintiffs' party wall, in defiance of the London Building Act, and had gone on building in defiance of a verbal undertaking, on May 23 not to do so. He asked that the defendant should be ordered to pull down such part of the wall as the report of Sir Alexander Stenning (referred to in our report in our last week's issue) found ought to be pulled down.

On May 19 last the plaintiffs' surveyor discovered that the plaintiffs' party wall was being underpinned and thickened, and no party wall notice had been given under Section 90 of the London Building Act. Such a notice was, however, given on May 22, when the defendants' wall had reached a height of 8 ft. 6 in. above the pavement. By June 6 the wall had reached a height of 27 ft. 6 in. On June 13, in a letter to the plaintiffs' solicitors, the defendant said that the wall was not a party wall, but an independent one. He had inserted a girder into the party wall, and there was a space of some inches between the old wall and the new one. Counsel then read the orders previously made and the report of Sir Alexander Stenning, and submitted that the report was binding on the parties.

The affidavit of Mr. H. B. Hale, plaintiffs' surveyor, showed that the wall was in fact a party wall, and that the defendant had built, in places into the party wall, to a height of 19 ft. (above the 8 ft. 6 in. to that had been built on May 22), without the plaintiffs' consent. Some of the bricks were let into the old wall.

The affidavit of Mr. Searlwood, defendant's surveyor, stated that the top portion of the wall had not been touched since May 22, when the undertaking was given. Since that date, however, the defendant had built an independent wall, which was not bonded into the party wall.

The defendant admitted in his affidavit that no party wall notice had been given by him to the plaintiffs owing to a misapprehension. He claimed that he had built an independent wall which was not bonded into the party wall, and he denied that a girder had been let into the wall. What had been done was to insert a ledger for the temporary purpose of scaffolding.

The wall complied with the London Building Act, and had been passed by the surveyor.

Mr. Justice Eve asked what was the practical result? The Court would not order the wall to be pulled down merely because the defendant had behaved badly.

Mr. Clayton said that Sir Alexander Stenning's report said that part of the wall ought to be pulled down, because it was not properly bonded.

Mr. Justice Eve said he wanted to put matters right without placing too great a burden on the defendant.

Mr. Lawrence, K.C., for the defendant, said that there was no common law right in the plaintiffs in this case, which was governed by the Building Act. The defendant had built under the supervision of the district building surveyor, who was the only person under the Act whom he was bound to satisfy. He was willing to bond the new wall into the old one, so as to satisfy the district surveyor under the London Building Act. The award made by the surveyors under the Act found that certain things ought to be done, and the defendant would, of course, comply with these directions, particularly with regard to bonding the wall, which could be done without pulling down.

Mr. Justice Eve: You are going to use the party wall as part of a new wall? Mr. Lawrence admitted that was so, but contended that under the London Building Act the defendant had a right to do that after he gave the notice. He contended that Sir Alexander Stenning's report went beyond what was left to him to decide, and he asked the Court not to interfere on an interlocutory proceeding.

In giving judgment, Mr. Justice Eve said that in view of the conflict of evidence he would proceed on the footing that Mr. Hale, the plaintiffs' surveyor, never took upon himself any authority to give the defendant permission to proceed with the work after May 22. It was proved that by June 6 the defendant had raised his wall to a further height of 19 ft. His Lordship said he saw that it was not possible to try the matter on an interlocutory application, and that the first thing to determine was whether the new portion was an independent wall or in the nature of an addition to the party structure, and when the motion first came on it was suggested that the question should be answered by an independent surveyor, and Sir Alexander Stenning was appointed to report

whether the work already done had been done properly and in accordance with the London Building Act. He reported that work done up to May 23 was right, but that the other was not, inasmuch as it was not properly bonded into the party wall. Sir Alexander looked upon it as an attempt to erect a statutory wall under the Act, of an insufficient thickness, and it was therefore an attempt which failed, and resulted in the new structure being a party wall. Sir Alexander intimated that the top 19 ft. ought to be pulled down. Then came the award under the London Building Act, which imposed upon the building owner obligations to do the work in a particular manner, and in particular to bond all new work into the party wall. Reading the two documents together, his Lordship said he had no doubt that there was thrown upon the defendant an obligation to properly bond the new wall into the plaintiffs' house, and it remained to be seen whether he could bring that state of affairs about to the satisfaction of the District Surveyor under the London Building Act without pulling the wall down. He was invited to say that the result of the report was that even if the defendant's construction of the agreement of May 23 was right, he ought to order the defendant to pull it down. He would have to consider what power he had under the statute or otherwise, to make such an order, but being still in doubt as to whether the work could be satisfactorily done without pulling down, he proposed to say that the Court being of opinion that the work which the award said ought to be bonded into the party wall might be properly bonded without pulling down, he made no order except that the costs be costs in the action.

OFFICIAL REFEREE'S COURT.
(Before Mr. MUR-MACKENZIE.)

Action by Contractor against Building Owner.

THE hearing was again resumed last week of the action brought by Mr. F. G. Minter, a contractor, whose headquarters are at Putney, against Mr. Charles Waldstein, Professor of Art at Cambridge, from whom the plaintiff claims £2,500, the amount said to be payable in pursuance of a certificate of Mr. Frederick William Foster, an architect, and in respect of a contract made between plaintiff and defendant for the carrying out of alterations and additions at Newton Hall, near Harston. Defendant raises a number of allegations of defective work, and presents a counterclaim for 10,000.

Mr. Lewis Thomas, K.C., and Mr. G. R. Bianco White (instructed by Mr. T. Bianco White) appeared for the plaintiff, and Mr. Clavell Salter, K.C., and Mr. F. St. John Morrow (instructed by Messrs. Withers & Co.), represented the defendant.

Mr. Clavell Salter, opening the defendant's case, submitted that the letters sent to Mr. Foster amounted to the very least to the suspension of the latter from the duties of architect, and, further, that Professor Waldstein, as the building owner, had the right under the circumstances to remove the architect. If there had been such dismissal or suspension of the architect, the letters would prevent the coming into existence of any valid certificate under this contract. Professor Waldstein was anxious to do everything that was morally right in this case; but he was being sued, hastily and unnecessarily, and he (Mr. Salter) asserted on his behalf his strict legal rights. Assuming the validity of the certificate, Counsel submitted that under this contract the plaintiff had proved no cause of action for the amount claimed, and that all indebtedness under this contract on the part of Mr. Waldstein to Mr. Minter had been paid, and more than paid, in the 17,500. The Professor had already paid. Mr. Salter went on to say that they had made inquiries to show how much additional work had been authorised under this contract, although it was really for the other side to prove that. So far as could be ascertained, however, the amount of additions to this contract which were authorised were comparatively unimportant, and in no way approached the neighbourhood of 11,400.

The building owner, Mr. Salter went on to say, was hardly ever a person with any knowledge of building. He was essentially a layman. As a student and scholar, Professor Waldstein was, perhaps, less able than the average man to take care of himself; he must trust himself to those whose duty it was to protect his rights. In defence of the plain words of the contract, they had got a sort of vague suggestion that these contracts were not to be rigorously looked at in practice, and Mr. Salter said he had asked of architects and surveyors to give the go-by to these written stipulations. He (Mr. Salter) had never been concerned in an architectural case which

approached this for unbusinesslike disregard of a contract. He certainly should not seek to discredit anything that Mr. Foster said, indeed, Mr. Foster had made a rather chivalrous appearance in the box in a vain attempt to cover Mr. Minter. Mr. Foster's reputation as an architect and artist might be great, but he had certainly been shown to be unbusinesslike in this case. Mr. Salter dealt at length with his client's counterclaim, and pointed out that his submission was that departures from the contract by the plaintiff, which were not authorised, as he contended, by Clause 12, were breaches of contract, and were actionable if these changes involved damage to Professor Waldstein. The house, commented Mr. Salter, seemed to have been built by a sort of commission. Mr. Green, the Clerk of the Works, appeared to have looked for instructions from whomever he could get. He either telephoned and wired to, or wrote to and called at the office in London for instructions from whatever person might be in charge. There was no legal competence in Mr. Foster to appoint any person to ratify or authorise departures from the contract. Mr. Salter submitted his client was entitled to damages wherever he could prove (1) departure, in fact, from plans and documents forming the contract; (2) damage to himself; and (3) where Mr. Lewis Thomas could not prove authorisation under the contract. This contract, which Mr. Minter had made with Mr. Waldstein, had been broken by the plaintiff in fundamental and essential respects. The contract made it plain that Professor Waldstein required, and was certainly ready to pay for, the very best dwelling-house that could be got. The Official Referee had been through these 270 defects. Like all these lists, this one consisted of large and small items all jumbled up together. Some of these items he proposed to abandon—not because Mr. Waldstein's complaints were not well founded, but because they were not complaints against Mr. Minter. Counsel then addressed the Referee concerning the timber supplied—the quality and the quantity thereof—floors, roofs, and drains, and he submitted that under these heads Mr. Minter had committed breaches of the contract. Some considerable expense must be incurred if they were to bring this house into conformity with the agreement. Counsel considered that the proposals made by plaintiff's witnesses, that Professor Waldstein should fur up all these floors, savoured of impudence. Professor Waldstein had consulted two eminent architects and surveyors, who declared that furring-up was no remedy, but were of opinion that if this house was to be restored as far as it could reasonably be to conform with the contract these floors must be constructed in accordance with the contract. Their suggestion was—and he wished to reinforce their suggestion as strongly as possible—that if the Official Referee were to give Professor Waldstein the cost of furring-up, with something thrown in by way of general damages, that that, to speak frankly, would not be giving him the whole of his rights. The Professor was entitled to have the floors in accordance with the contract, and the only thing was to take them up and relay them in accordance with the contract. Counsel said he would ask, amongst other things, for damages in respect of imperfections connected with the roof. Dealing with plaintiff's allegations that too little time had been allowed him for the carrying-out of the contract, Mr. Salter said that evidence would be given to show that there had been nothing to prevent the work being properly done, however short the period. He contended that it did not lie in the mouth of any man who had agreed to do the work properly to say the time was too short for him to do the work properly. Plaintiff's contract was to do the work well in a given time. Regarding the plaintiff's assertion that the overheating of the house had occasioned much of the mischief, Mr. Salter considered that there was nothing therein to justify a breach of contract on the part of the plaintiff. There was no evidence that Professor and Mrs. Waldstein were Salamanders and desired abnormal warmth. It became increasingly obvious in this case that the worst of these cracks and openings were due to settlements in the floors.

Evidence was then given on behalf of the Professor's case by Mr. Frederick Arthur Ball, of the firm of Messrs. Ball & Son, quantity surveyors, of No. 6, King's Bench walk. Witness said that he had visited Newton Hall many times. He had studied the specifications, the bills of quantities, and the plans. He had priced out the various items—mainly regarding reconstruction—as if he were pricing out for a builder. In great detail Mr. Ball pointed out alleged deviations from the contract, and suggested remedies.

On Tuesday, Mr. Frederick Henry Seale and Mr. Alfred Sears, timber merchants, were

interposed as witnesses for the plaintiff, and gave expert evidence as to the quality of the timber used in Newton Hall.

Mr. F. Lyon, butler to the defendant, Professor Waldstein, also gave evidence as to the alleged defects in the building, but admitted in cross-examination that in order to get the house ready for occupation by the Professor nearly the whole of the seventy radiators were used at the same time; but they were not used for saving fires. Mrs. Waldstein wanted a really warm house. Mr. Lewis Thomas: You know what an American calls a "really warm house"?—Oh, yes!

Mr. Lewis Thomas: About 84 degrees. Mr. William Saint, examined by Mr. Clavell Salter, said he was a builder—one of the leading builders—at Cambridge, with thirty years' experience. Amongst the building work he had executed witness stated that he had built the Presbyterian College at Cambridge at a cost of 35,000, and he was now engaged in making alterations at Emmanuel College at a cost of 30,000. During his thirty years' experience he had studied timber from a builder's point of view. He had also studied the specification in the present case, which provided throughout for the very best quality.

Witness was taken at considerable length and detail through the items in which it was alleged timber of an inferior quality to that specified was used, and generally gave evidence to the effect that the timber used was not of the quality specified for. He said that he did not consider that American pitch-pine was equal in quality to the best fir, and that it was very unwise to use it where there was not a free access of air. With regard to the roofs at Newton Hall, the witness stated that he had carefully inspected the woodwork of the roofs, and was of opinion that the timber used was not of the quality specified. He did not find any timber which could be described as the "best fir." Speaking generally as to the timber used in the two roofs, he should say that only about 20 per cent. of the timber used therein was of good quality, having regard to the class of work.

Witness also stated instances in which he considered the workmanship with regard to the woodwork was not as it should have been.

Cross-examined by Mr. Lewis Thomas. He first saw the specification in the present case early last July. He had never seen it before, and had never seen the bills of quantities. He did a great deal of work at Cambridge. He had not tendered for the work in question. He knew that the timber of the work in question came from Smith's Timber Company. He had formerly dealt with the company, and, no doubt, did so now. He had never had any difference with Smith's Timber Company. He was perfectly friendly with the company, and always had been. They were first-class timber merchants. He had heard the prices paid for the timber in the present case, and he considered they were fair charges for the class of goods.

Was it not a high price to pay for roof timber?—Oh, no, decidedly not!

Supposing an architect told you to do something in a building as a variation, and gave you a proper order under the contract, I suppose you would carry it out?—Oh, yes!

If you carry out the variation it is not your responsibility?—No; but I should want the order in writing.

If you put the joinery work on damp plaster it would not have a good effect?—No.

And if you put wallpaper on damp plaster it would not be satisfactory?—No.

Witness added that before he performed an order to do that he would call attention to the consequences which would ensue.

Cross-examined further, witness admitted that with regard to the timber specifying Christiansa meant sometimes a standard of quality. The timber coming from Riga was inferior to other timber in size. Archangel timber was divided into three grades, viz., first, second, and for joinery work. It enjoyed a high reputation for joinery work. He had seen two or three indications of the roof spreading. It was a common thing to house soft wood into hard wood.

It was the universal practice to frame up the truss from the ground.

Re-examined by Mr. Clavell Salter. Before he acted upon any order of the architect he should be careful to see that it was a proper order. It was not good workmanship to put joinery upon damp plaster, and it was not good workmanship to put paper on damp walls.

Witness added, in further re-examination, that he did not consider the timber used for the roofs was the proper timber to use, or that it was in proper condition for first-class work.

Mr. C. J. Jude, a builder at Harston, gave

evidence to the effect that he had been called in many times to Newton Hall for the purpose of freeing the doors. He was called in nearly every fortnight for that purpose. He had made a detailed inspection of the cracks and defects. With regard to the study on the ground floor, he noticed that there was something wrong with the girder. There was a sinking. There was also a crack over the fire-place in that room that got gradually worse. He noticed also that there was a crack in the ceiling of the billiard-room, and three cracks in the ceiling of the drawing-room. He noticed one some time ago, and two of them on the occasion of his inspection in July last. In the morning-room he was called in to remedy a crack on the top of the fire-place chimney-piece. He noticed two long cracks in the ceiling of that room. In the dining-room there was a bad crack in the ceiling under the girder. He noticed that crack early in the year. That crack was in much worse condition than when he saw it first. He also noticed other cracks in the ceilings, which had got gradually worse than they were when he first noticed them. He noticed that the matchboarding above the dining-room door had shrunk very badly. There were also cracks in the partition of the china cupboard.

Witness said that he had had to ease the doors of the kitchen leading to the scullery. That was necessary because the wood floor block had bulged away from the concrete floor—at least, that was his opinion. He also noticed some cracks in the ceiling of the housekeeper's room. He had also done some "easing" to the luggage entrance door and the larder door. The main entrance door to the garden from the new wing was also "eased" early in the year. Something was also done to the cellar door by his men, but he could not say what it was. In the hall, too, there was a long crack. In No. 1 bedroom on the first floor there was a crack in the cornice. Pieces of the cornice had fallen, and the last fall was at the end of June. In the corridor outside the bathroom there was a crack down the wall. He first noticed that early in the year. In the bedroom No. 1 he did something to the door leading to the dressing-room, but he could not remember what it was. He also found that the knobs to the cupboards in that room were broken. The ceiling in the room adjoining the dressing-room had a crack which went right along the partition. That crack had got very much worse.

Witness also gave evidence as to serious cracks which had taken place in the ceilings and partitions of other rooms. He said that most of the cracks were worse to-day than when he saw them first. They increased in length. He said that the door of the footman's bedroom had been eased several times, and probably wanted easing again. In the cook's bedroom the same thing occurred. There was also a serious horizontal crack upon the staircase leading from the first to the second floor. That crack had got much worse lately. He first noticed these cracks quite early in the year. Stamped paper was put up certain of the cracks early in March, and the stamp paper cracked soon afterwards. The case was proceeding as we went to press.

LONDON COUNCILS.

Croydon.—The tender of Mr. J. T. Simmonds, Croydon, has been accepted for the construction of conveniences in Frith-road. The following plans have been passed:—Mr. D. L. Gooch, 18, Sundridge-road, four houses, Everton-road; Messrs. Maides & Harper, Albert-road, nine houses, Northampton-road; Mr. A. Paxton, 74, George-street, shop and stores, 74, George-street.

Greenwich.—Instructions have been given to the Surveyor to submit an estimate for repairing part of King William-street with lithofalt. Plans have been passed for Mr. N. Drake for four houses, Vanbrugh Fields; also for additions to St. John's Church, St. John's-road, Blackheath.

Hendon.—Application is to be made to the Local Government Board for sanction to borrow 172l. the estimated cost of kerbing, etc., from Church-terrace to Sunning-gardens. Plans and estimates submitted by the Surveyor have been approved for making up Sanders place, Mill Hill, at a cost of 226l. The following plans have been passed:—The Kensington Freehold Trust, six shops and houses, Lawrence-street, Mill Hill; Mr. W. T. Streather, fourteen houses, Ella Russell-gardens, Golders Green; Messrs. Adams & Caxon, six houses, Crews-road, Child's Hill; Messrs. Haymills, Ltd., three pairs houses, St. Dunstan's-road, Child's Hill; The Second Hampstead Tenants, Ltd., thirteen houses,

Corringham-road and Addison-way; Mr. F. W. Bindon, additions to Golders Hill School, Finchley-road; Messrs. Edmondson, Ltd., six shops, Golders Green-road; Mr. John Hudson, enlargement of St. Peter's Church, Cricklewood; Mr. H. Phillips, four houses on land leading from Nan Clark-lane; Mr. H. E. Percy, six houses, Millway.

Heston and Isleworth.—The tender of Mr. T. A. Chapman, at 3,345l., has been accepted for the construction of surface water sewers at Twickenham-road, Isleworth. Tenders are invited for alterations to the Isleworth Branch Library. The following plans have been passed:—Messrs. Hamiltons, ten houses, Jersey-road, Osterley; Mr. A. Blomfield Jackson, additions to "Park View," Isleworth; Mr. W. Houghton, alterations to Nos. 75-77, Hibernia-road, Hounslow.

Ilford.—The following plans have been passed:—Mr. H. Hollins, six houses, Coventry-road; Mr. A. T. Haines, six houses, Leeds-road; Mr. E. T. Dunn, for Mr. F. C. Short, alterations to Nos. 3 and 4, Blythwood-parade, High-road.

Kensington.—The footway opposite Nos. 77-95, Kensington High-street, is to be repaved with 3-in. York stone, at an estimated cost of 84l.

Kennerley.—The tender of Mr. A. W. Porter at 122l. has been accepted for supplying and fixing of about 855 ft. of kerbing at Chadwell Heath, and about 440 ft. in Great Warley.

Southgate.—Plans have been passed as follows:—Mr. W. J. Keene, jun., nine houses, Burford-gardens, Palmers Green; Mr. W. Moss, twelve houses, Amberley-road, Palmers Green; Mr. R. Spendlove, eight houses, Avenue-road, Southgate; Mr. W. J. Ward, five houses, Green-lanes, Palmers Green; Mr. A. Ingram, twenty houses, Chimes-avenue, Palmers Green; Mr. H. J. Huckle, six houses, Conway-road, Southgate.

Tottenham.—The following plans have been passed:—Mr. W. Stone, store at Messrs. Maynard's, Ltd., Vale-road; Mr. J. C. Hill, additions to 80, Grand-parade, Green-lanes; Mr. L. Lebus, additions at Finsbury Cabinet Works.

Woolwich.—Plans and estimates submitted by the Borough Engineer and Surveyor have been approved for making up Everest-road, Lassa-road, part of Clay-lane, and part of Weigall-road, at estimated costs of 260l., 424l., 456l., and 734l. respectively. Plans have been passed for Mr. J. J. Bassett, 121, Earshell-road, Eltham, on behalf of Mr. A. C. Corbett, for ten houses, Dunvegan and Glenesk roads, Eltham.

OBITUARY.

Mr. Abbey, R.A.

We regret to announce the death, on August 1, at his town house, "Chelsea Lodge," The-street, Chelsea, of Mr. Edwin Austin Abbey, R.A., LL.D., F.S.A., and Honorary Associate (1905) of the Royal Institute of British Architects. He was born in Philadelphia in 1852, and entered the Pennsylvania Academy of Fine Arts, and in 1871 was elected a member of Messrs. Harper Brothers. At a complimentary luncheon given to him by the Pilgrims in the Savoy Hotel in May, 1903, Mr. Abbey related how he came from his native city, Philadelphia, to England, in 1873, with commissions from Messrs. Harper, amongst them being a set of illustrations for an edition of Herrick's poems. He quickly achieved fame with his work in black and white, and pastels, particularly with illustrations from Goldsmith's and Shakespeare's plays. In 1889 he won a first class medal at the Exposition Universelle, Paris. His first contribution to the Royal Academy exhibitions was "A May Day Morning" (1890); to that succeeded "Crusaders Sighting Jerusalem at Dawn" (1891); "O O Mistress Mine" and "Pout Pourri" (1903); "Fiametta's Song" (1894); "The Wooing of the Lady Anne of Warwick by Richard, Duke of Gloucester" (1895); "The Play Scene from 'Hamlet'" (1897); "King Lear and His Daughters" (1898); "Trial of Queen Katherine" and "Penance of Eleanor, Duchess of Gloucester" (1900); "A Measure" and "Salvator Mundi" for the reredos, Holy Trinity Church, Paris (1904); and the "Landing of Columbus on San Salvador Island" (1906). In 1896 he exhibited at the Nouveau Salon his 150 drawings of scenes from Shakespeare's comedies which, with his illustrations to "Othello," "Troilus and Cressida," "Macbeth," "King Henry VI.," and "King John," were published in *Harper's Magazine*.

In 1901 he was commissioned by the Merchant Taylors' and Skinners' Companies to paint a panel for the Royal Exchange, depicting the reconciliation feast of the two companies on the eve of St. John's day, 1484, and also to paint the altar-piece of the American

Church, Rue de l'Alma, Paris. In that year were shown in the Guildhall Galleries the ten pictures which complemented the series of fifteen: "The Quest of the Holy Grail;" as mural decorations for the Boston, U.S.A., Public Library. Ten years ago he began the remarkable set of eight decorative paintings for the four arches and spandrels beneath the drum of the dome of the State Capitol, Pennsylvania—with figures on round canvases of "Religion," "Law," "Science," and "Art;" and, in the lunettes, groups symbolical of the settlement in the State. His State picture of King Edward VII.'s Coronation, painted for Messrs. Thomas Agnew & Sons, was shown at the Hanover Gallery in 1904. Mr. Abbey was elected an Associate, R.A., in 1886, and Royal Academician in 1898; member of the Institute in 1893; Associate of the (Old) Water-Colour Society in 1894; member of the Athenaeum Club, under their Rule II., in February, 1901; he was President, 1901-3, of the Royal Birmingham Society of Artists; an Examiner, 1901, in drawings from the life, national competition, Schools of Art. The German Emperor conferred upon him a gold medal for art at the Berlin Exhibition, 1903, and he was a Royal Commissioner (British) for the International Exhibition, St. Louis, Missouri, in 1894. Mr. Abbey was a Chevalier of the Légion d'Honneur, member of the Institute of France, of the Société Nationale des Beaux-Arts, Paris, honorary member of the Munich Academy of Fine Arts, and of the American Institute of Architects, and honorary M.A., Yale University. He married, in 1880, Miss Mary G. Mead, of New York. At his country house, Morgan Hall, near Fairford, Gloucestershire, he built a large studio for his vast historical compositions for the House of Representatives at Harrisburg, Pennsylvania. In 1908 he was appointed to superintend the filling-in with paintings six panels of the corridor that leads to the great staircase in the Houses of Parliament. His portrait, by the late Sir W. O. Orchardson, R.A., was shown in the Royal Academy rooms last summer.

FOREIGN AND COLONIAL.

Building in Alexandria.

The British Consul at Alexandria (Mr. E. H. Mulock), in his annual report, states that building activity was very marked on the part of private individuals. Tenders for the Kait Bey or western branch of the East Port breakwater are to be asked for during the present year. Six months are to be allowed for the consideration of the project by the contractors, and it is expected that formalities will be completed and a tender accepted by January 1, 1912.

Carrara Marble.

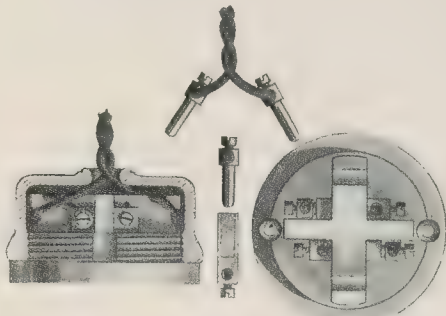
The British Vice-Consul at Spezia reports that during 1910 the exports of marble from the district of Massa Carrara amounted to 29,339 tons of this total 28,339 tons were shipped to the United Kingdom—6,564 tons in the rough (blocks), 16,359 tons sawn (in slabs), and 6,566 tons otherwise worked. The report adds:—A new branch railway is in course of construction from the station of Aulla, on the Spezia-Parma line, to the northern side of the Carrara range, where it is believed there exists a better quality of marble, which, owing to the difficulties of transport, has not yet been quarried. When this branch is completed it will be a comparatively simple matter to convey the marble to Spezia, though it is more probable that the greater part of the product will be sent on by rail through Parma to Milan, and thence to Northern or Central Europe.

Building Activity in Marseilles.

Mr. Gurney, the British Consul-General at Marseilles, reports that the Civil Hospital is being rebuilt on modern lines, and the construction of a new hospital for contagious diseases is planned. The extraordinary activity in building houses supplied with all modern comforts and sanitary appliances in the better situated quarters of the town for the mercantile community, the proposed reconstruction of the Town Hall in the old town, and the consequent pulling down of slums dating from Roman times, the rebuilding of an entire quarter containing many blocks, from the Cannebière to the Rue Colbert, south and north, and from the Rue de la République to the Cours Belsunce, west and east, and the building in its place of a commercial quarter, provided with all the modern requirements, will not only give employment to the building trade for years to come, but will partly solve the problem of housing the people and providing business offices now lacking. The rapid extension of the Marseilles

tramway system, with its penny fares for long distances, which is spreading its lines into the suburbs in every direction, is tending to relieve the congestion of the city. Great estates in the close neighbourhood of the town are being sold in small lots and eagerly bought up. Cheap and comfortable houses are being built, the taste and ideas of comfort of the builders being fostered by housing exhibitions and competitions, or architects' plans. Large public

floor, thus rendering unnecessary the acrobatic feats on the top of a step ladder which usually accompany the fixing of the ordinary type of rose. The end, in the "Kwik-fix" system, is wired to two split pins, which are then simply slipped into the brass terminal blocks in the base of the rose. The china bridge is so arranged that the flexible end is made to bind in such a way as to make an effective end grip, and does away with the



"Kwik-Fix" Ceiling Rose.

parks are being added to the existing ones for the recreation of the people and the health of the children. Public works, with the view of facilitating transport by water and land, are in progress. The construction of the Madrague Dock, the deepening of the harbour, the building of a new dry dock, and the construction of the Marseilles-Rhône Canal, and of the new main railway from Marseilles to Miramas by Estaque and the Etang de Berre are all making excellent progress, though there has been one unfortunate hitch caused by a local strike of the miners and masons working at the Roue tunnel on the canal route. The industrial activity of Marseilles has been shown in providing electricity and cheaper gas and the extension of factories of various descriptions. The brick and roofing and flooring tiles industry has taken a large development. Roofing tiles are exported principally to Algeria, Turkey, Russia, and Australia; bricks to Senegal; and flooring tiles to the Argentine Republic.

Trade of China.

The following information is from the report of the British Acting Commercial Attaché at Peking (Mr. H. H. Fox) on the trade of China in 1910, which will shortly be issued:—
The sum of 1,203,004, spent by China last year on the purchase of foreign building materials, cement, timber, furniture, window glass, etc., is indicative of another far-reaching change which is coming over the habits of the Chinese people. The dilapidated rows of one-storied houses of lath and plaster, dark, unsanitary, and comfortless, which formerly did duty as Government offices, schools, barracks, etc., are rapidly disappearing before buildings in foreign style of brick and stone, fitted with such up-to-date conveniences as electric light and steam heating; while in all the large cities and trading centres merchants and shopkeepers are replacing the shanties of former days with modern constructions in which the *yanglou* or foreign upper story, and the plate-glass window, are usually conspicuous features. The style is more often than not atrocious and the work shoddy, but in places like Shanghai and Peking, where the protection of business buildings and Government offices has been entrusted to foreign architects, the results are not unworthy of a European city. As regards such materials as cement and bricks, China is already well supplied, and she is beginning to manufacture her own cement; but good timber is, owing to the reckless disregard of elementary principles of afforestation during the past 50 years, entirely lacking except in remote and inaccessible parts of the country. For such articles as steel joists and plates, ironmongery and tools, corrugated iron roofing, paints and distempers, window glass, electric accessories, water and heating plant, etc., China should be a good customer for many years to come.

TRADE CATALOGUES.

Messrs. A. Emanuel & Sons, of 7-13, George-street, Manchester-square, London, W., forward us particulars of the "Kwik-fix" ceiling rose. The construction of this rose enables the flexible end of a fitting to be wired on the

necessity of knots, besides reducing to a minimum the risk of short circuiting. Thus the weight of the fitting does not rest on the cover. As there are no back connections, there should be no surface leakage. By the use of the "Kwik-fix" ceiling rose, a number of temporary fittings can be kept at hand ready to slip into boxes, in order to get "tests" or new installations passed by the Supply Company.

PATENTS.

APPLICATIONS PUBLISHED.*

15,719 of 1910.—Oliver Imray (Administrator of Ulrich Wilhelm Ramsauer, deceased): Construction members of tubular form.

16,536 of 1910.—Albert Ernest House; Cowl for chimneys and the like.

18,445 of 1910.—Ferdinand Seifert: Window-guard for preventing children from falling out of the window.

20,576 of 1910.—John Henry Barker: Saws. 20,641 of 1910.—Henry Berry and Henry Berry & Co.: Shearing machine for gapping and notching channel bars and joists.

20,881 of 1910.—Georges Alexander Philippe Bellou: Soldering and other like hand-lamps. 21,513 of 1910.—Leon Billé: Joints for conduits and the like.

21,448 of 1910.—Richard Brierley: Hot-water systems.

24,047 of 1910.—Albert Charles Horner: Fire escapes, portable and collapsible ladders, and the like.

28,762 of 1910.—Joe Clegg: Chimney-pots.

29,379 of 1910.—Henry Charles Platts: Fire-places.

3,757 of 1911.—Theodore McKenna (A. J. Ellis, Incorporated): Hollow metal door frames.

3,769 of 1911.—Reginald Hadden (John Edward Ogden): Sockets for securing bolts in walls and the like.

4,185 of 1911.—Gottfried Buchert: Apparatus for coating articles for protection from rust and other insulation, and the like purposes.

7,989 of 1910.—William Schafer: Window-frames.

10,005 of 1911.—Fred Erickson: Shovels.

10,345 of 1911.—Isil Behrmann: Reinforced concrete structures.

11,509 of 1911.—Robert Everett Brand: Artificial stone.

SOME RECENT SALES OF PROPERTY: ESTATE EXCHANGE REPORT.

July 4.—By W. M. STICKNEY & SON.
Bewholme, Yorks. Bewholme hall Farm, 220 acres, f. £5,000

By J. M. PRATT.
Withycombe Rayleigh, Devon.—Accommodation land, 54 acres, f. 5,010

By SWAFFER BROS.
Kingsnorth, Kent.—Gosley Farm, 53 acres, f. 1,360
Newchurch, Kent.—Marsh land, 32 acres, f. 2,500

By KIVELL & HARRIS.
Morwenstone, Cornwall.—Portion of the Granville Estate, 1,500 acres, f. 14,769

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

By STANFORD & BROOM. Debenham, Suffolk.—Debenham-hall Estate, 246 a. 1 r. 31 p.	£4,575
Tower Mill, house and 1 acre, f.	300
Wilby, Suffolk.—Union Farm and arable land, 66 a. 2 r. 22 p. f.	1,140
By HENRY H. BLETSOE. Thrapston, etc., Northants.—Farms and accommodation land, 541 acres, f.	13,013
July 5.—By FRANKLIN & SON. Thaxted, Essex.—Hardings Farm, 26 a. 3 r. 27 p. f.	450
Town-st., freehold residence.	380
By VIDLER & CO. Ewhurst, Sussex.—Freehold farms, 421 acres.	2,975
July 6.—By STANFORD & BROOM. Wissett, Suffolk.—Arable and pasture land, 71 acres, f.	2,918
By BOULTON & COOPER. Troutsdale, Yorks.—Rock House Estate, 660 acres, f.	8,500
By TROSCHEL & GREEN. Lenham, etc., Kent.—Lower House Farm and Kettles Farm, 217 a. 3 r. 21 p. f.	8,055
By FARBERROTHER, ELLIS, & CO. Bloxham, Oxon.—The Hollies and 1 a. 1 r. 31 p. 6.	1,060
1 and 2, Sunnyside Cottages, c.	250
July 7.—By STANFORD & BROOM. Blo' Norton, Norfolk.—Church Farm, 113 a. 1 r. 11 p. f.	1,650
South Lopham, Norfolk.—Arable land, 10 a. 1 r. 4 p. f.	185
By HUNST & SON. Whitestone, Devon.—Hurst Estate, 771 acres, f.	14,730
By J. HANNAFORD & SON. East Worlington, Devon.—Yeshridge Farm, 180 acres, f.	1,880
July 10.—By KNIGHT, FRANK, & RUTLEY. Stourton, Dorset.—The Caundle Estate, 1,972 acres, f.	31,264
July 11.—By FARBERROTHER, ELLIS, & CO. Cranleigh, Surrey.—Common House Farm, nine cottages, shop, etc., 66 acres, f.	6,085
Preparatory school and 1 a. 9 r. 16 p. f.	1,200
By FICKE & SON. Monk Soham, Suffolk.—Hill Farm, 140 a. 2 r. 38 p. f.	1,130
By LEDHAM & HARRISON. Bretby, Derby.—Part of Bretby Hall Estate, 517 acres, f.	11,045
July 12.—By C. R. MORRIS, SON, & PEAR. Mark, Somerset.—Mark Estate, 585 a. 1 r. 16 p. f.	31,609
By BIDDILL & BLENCOWE. Wickhambrook, Suffolk.—Boyden Hall Estate, 248 acres, f.	3,000
July 13.—By NEWLAND, TOMKINS, & TAYLOR. Fulborough, etc., Sussex.—Outlying portions of the Stopham Estate, 1,355 acres, f.	34,536
By WALTER LUDLOW & BRISTOL. Wribbenhall, Worcester.—Washford Wood and North Wood Estates, 383 acres, f.	7,235
By WINTERSON & SONS. Wigginton, Staffs.—Bodnetts Farm, 113 a. 2 r. 11 p. f.	3,900
Pasture land, 9 a. 1 r. 8 p. f.	520
By HUTCHINGS & DEER. Tanworth-in-Arden, Warwick.—Elliot's Hall Estate, 160 a. 2 r. 14 p. f.	9,159
July 15.—By C. R. MORRIS, SON, & PEAR. Lyng, Somerset.—Farms and accommodation land, 664 acres, f.	27,537
By H. W. & C. SPELMAN with FRANK NEWMAN & BUNY. Acle, Norfolk.—Grazing marshes, 206 acres, f.	9,770
By EVANS & EVANS. Colwich, Staffs.—Moreton House Farm, 333 a. 2 r. 6 p. f.	7,817
Stafford.—Radford Bank, cottage, f.	210
July 17.—By WILKINSON, SON, & WELCH. Hove, Sussex.—59, York-rd., u.t. 49 yrs. 6 p. 28, y.r. 40.	600
10, Farm-rd., u.t. 41 yrs. 6 p. 61. 10a, y.r. 36.	300
By KNIGHT, FRANK, & RUTLEY. Chirk, Denbigh.—Outlying portions of Chirk Castle Estate, 1,107 acres, f.	66,604
July 18.—By FRANKLIN & SON. Great Sampford, Essex.—Sorrells and Simms Farms, 51 a. 3 r. 21 p. f.	799
July 19.—By WALTER & LEE. Culmington, Salop.—Culmington and Corton estates, 3,441 acres, f.	105,000
By HEPPEL & SON. Bewerley, Yorks.—Three freehold farms, 48 acres	2,635
By KNIGHT, FRANK, & RUTLEY. Dorking, Surrey.—19, West-street, f. y.r. 40l.	1,100
July 20.—By KNIGHT, FRANK, & RUTLEY. Headington, Oxon.—Laurel Farm and 5 acres, f.	1,650
By ERNEST S. BEARD & DANIELL. Coggeshall, Essex.—Eighteen cottages, four residences, and 23 acres, f. and c.	3,108
By HENRY H. COLLIER & MADGE. Acton.—44, Burlington-rdus, u.t. 65 yrs. g.r. 8l., gross rental 52l.	275
By CHAS. BOARDMAN. Long Melford, Suffolk.—Bouda field, 20 a. 3 r. 9 p. f.	415
Two shops and seven cottages, f.	840
Rent charge, 8l.	120
July 21.—By WALLER & KING. West Wellow, Hants.—Pasture land, 34 acres, f.	1,140
By THORNBORROW & CO. Hesket, Cumberland.—Freehold farm, 49 a.	1,260
July 22.—By H. W. & C. SPELMAN. Blakeney, Norfolk.—Blakeney Estate, 2,730 a., f.	11,379

[RECENT SALES—continued on page 150.]

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

AUGUST 8.—**Egremont.** LAYING-OUT SCHEME. —Premiums of 40l. and 10l. are offered by the Egremont U.D.C. for lay-out scheme. Particulars from the Town Surveyor, Egremont.

AUGUST 15.—**Berne.** MONUMENT.—Designs for the erection of a monument at Berne to celebrate the foundation of the International Telegraph Union. Conditions may be seen in the library of the Royal Institute of British Architects.

SEPTEMBER 4.—**Newcastle-on-Tyne.**—The Education Committee invite from architects practising in Newcastle designs for a senior mixed school and a junior mixed school, each to accommodate 365 children. Assessor nominated by R.I.B.A.

SEPTEMBER 12-25.—**Athens.**—COURT OF JUSTICE. —An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 160,000l. The Official Gazette may be seen at the Library of the R.I.B.A.

SEPTEMBER 16.—**Manchester.**—LIBRARY AND ART GALLERIES.—Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

OCTOBER 30.—**Holland.**—STAINED GLASS WINDOW.—Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31.—**Marblebone.**—NEW MUNICIPAL BUILDINGS.—Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Fare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1.—**City of St. Petersburg.**—MONTUMENT TO ALEXANDER II. Particulars in our issue of August 13, 1910.

DECEMBER 23.—**Glasgow.**—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 31, 1912.—**Australia.**—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of July 7 for further particulars.

JULY 1, 1912.—A plan for the extension of the City of Dusseldorf. Premia of 1,000l. to 375l. Conditions on application to the Chief Bureau-master, Dusseldorf.

NO DATE.—**Nottingham.**—BAPTIST CHURCH AND PREMISES.—Limited to Nottingham architects. Particulars from Messrs. Barker & Jackson, solicitors, King-street, Nottingham.

NO DATE.—**Rockdale Infirmary.**—EXTENSIONS.—Assessor, Mr. Alex. Graham, F.R.I.B.A.

NO DATE.—**Salford.**—Extension of office accommodation on workhouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford. Limited to architects practising in Salford and district only.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 5.—**Bristol.**—PULLING DOWN.—For taking down and removing the buildings, and for the value of the old materials in the premises at the corner of Bridewell-street and Nelson-street. Plan and particulars at the office of Mr. Peter Addie, City Valuer's Department, The Exchange, Bristol.

AUGUST 5.—**York.**—WORKS.—For works at Lapp's Quay and Lower George's-street. Plans and specification with Mr. James F. M'Mullen, M.R.I.A.I., architect, 30, South Mall, York.

AUGUST 5.—**Craigievar.**—ALTERATIONS, etc.—Repairs and alterations on the dwelling-house and stabling at Westside of Craigievar. Plans and specifications with Messrs. Alex. Stronach, jun., & Son, advocates, 30, Belmont-street, Aberdeen.

AUGUST 5.—**Glasgow.**—Paving, etc.—Proposed children's playground in Kenwick-street, Maryhill, formation of drains, iron fencing, iron saw framing, timber appliances, caretaker's box, and lavatories. Specifications from the Office of Public Works, 84, Colinton-street.

AUGUST 6.—**Macroom.**—PIERS, etc.—Erection of piers and gates on the passage entering the cottage occupied by Mr. Cornelius Lynch at Currahy. Specification at the Board-room,

Workhouse. Deposit of 1l. Mr. D. Lynch, Clerk of Council, Clerk's Office.

AUGUST 7.—**Chester.**—ADDITIONS, etc.—Alterations and additions to St. Thomas's Schools. Specifications and quantities from Rev. H. E. Burder, St. Oswald's Vicarage, Chester.

AUGUST 7.—**Halifax.**—OFFICES.—Erection of out-offices, lavatories, and baths at the Bernerside School. Plans and specifications seen, and forms of tender from Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax. Deposit of 5l.

AUGUST 7.—**Mandsaworth.**—WALLS.—For cementing walls of caretaker's house at the Hollinsend sewage works. Particulars from Mr. B. Powell, Engineer and Surveyor, Council Offices, Woodhouse.

AUGUST 7.—**Scotland.**—HOUSES.—Erection of houses at Peathill, Bonnyrigg. Plans seen, and quantities from Messrs. A. & W. Black, architects, Falkirk.

AUGUST 8.—**Chatham.**—BATHROOMS, etc.—Erection of new bathrooms, lavatories, etc., at the Medway Union Workhouse. Drawings and specifications from the architect, Mr. G. E. Bond, 384, High-street, Rochester.

AUGUST 8.—**Fermoy.**—DWELLINGS.—Erection of twenty-four labourers' dwellings in four blocks. Plans and specifications with Mr. D. J. Buckley, C.E., M.R.I.A.I., Town Surveyor of Fermoy, 53, South-mall, Cork. Deposit of 20l.

AUGUST 8.—**Glamorgan.**—ROOFING.—For renewal of zinc roofing to platforms at Landore Station, for the Great Western Railway Company. Plans and specifications seen, and quantities from the Engineer at Neath Station.

AUGUST 8.—**Nottingham.**—HOMES, etc.—Erection of four receiving homes and infirmary. Mr. J. W. Hawker, architect, 3, North-street Quadrant, Brighton. Deposit of 5l.

AUGUST 9.—**Bradford.**—RESIDENCE.—Erection of medical officer's residence at the City Hospital, Leeds-road. Drawings seen, and quantities from the City Architect, Town Hall, Bradford.

AUGUST 9.—**Radyr.**—VILLA.—Erection of a villa. Drawings and specification with the architect, Mr. W. H. Dashedwood Caple, 2, Church-street, Cardiff.

AUGUST 9.—**Sculcoates.**—ROOM.—Erection of a committee-room at the Workhouse. Plan and specification at the Union Offices, Harley-street, Hull.

AUGUST 9.—**Turro.**—BUILDING. Erection of a building at Back-quay. Plans and specifications with Mr. A. J. Cornelius, M.S.A., architect, Turro.

AUGUST 10.—**Dorset.**—ADDITIONS, etc.—Alterations and additions to the farm buildings at Fardrover Farm, Menians. Plans and specifications at the County Offices, Dorchester.

AUGUST 10.—**Durham.**—ADDITIONS, etc.—Alterations and additions to High Sprinwell House. Plans with Mr. H. T. Gradon, architect, Market-place, Durham.

AUGUST 10.—**Edinburgh.**—OVEN, etc.—Erection of a double-deck steam-heated drawplate baker's oven, with baking plant and electric motor, at West Fountainbridge Cooking Centre. Plans seen, and specifications from Mr. J. W. Peck, Clerk to the Board, School Board Offices, Castle-terrace, Edinburgh.

AUGUST 10.—**Probus.**—RESIDENCE.—Erection of a caretaker's residence. Plans and specification seen at the Post Office, Probus. Mr. Sampson Hill, architect, Green-lane, Redruth.

AUGUST 10.—**Yorks.**—WORKS.—For various works at the Barwick-in-Elmet temporary school. Plans seen, and specifications and quantities from the Education Architect, County Hall, Wakefield. Deposit of 1l.

AUGUST 11.—**Halifax.**—ENGINE-HOUSE, etc.—Erection of a new engine-house and concrete engine-bed at Ingwood Mills, West Vale. Plans, specifications, and quantities from Messrs. Chas. F. L. Horsfall & Son, architects, Lord-street-chambers, Halifax.

AUGUST 11.—**London.**—LIBRARY.—Erection of Central Library, for the Deptford B.C. Mr. V. Orchard, Town Clerk, Town Hall, New Cross-road, S.E.

AUGUST 12.—**Chadderton.**—CULVERT.—Construction of 115 lin. yds. of brick culvert. Plans seen, and forms of tender from the Surveyor's Office, Town Hall, Chadderton.

AUGUST 12.—**Corwall.**—HOUSE.—Erection of root-house at Hay Barton, Menheniot. Plans and specification with Mr. J. E. Holmes, Manor Office, Flynnon.

AUGUST 12.—**Hants.**—COTTAGES.—Erection of five cottages at Fair Oak. Drawings and specifications with the architect, Mr. B. D. Cancellor, 12, Jewry-street, Winchester.

AUGUST 12.—**Llantarnam.**—RESIDENCE.—Erection of a residence near "The Greenhouse," Plans and specification, on deposit of 2l. 2s., from Mr. A. Gordon Habbidge, architect and surveyor, Clarence-chambers, Pontypool.

AUGUST 12.—**Rhosobol.**—SCHOOL, etc.—Erection of schoolroom, etc. Plan and specification at Vottry, Bersham-road, Wrexham.

AUGUST 14.—**Aberdeen.**—STRAIDING.—For erection of new stabling at Nether Kingsgate, Newmachar. Plans and specifications seen, and quantities from Messrs. D. & J. R. McMillan, architects, 12, Crown-street, Aberdeen.

AUGUST 14.—**Dublin.**—ALTERATIONS, etc.—Additions and alterations to the Nurses' Home, Richmond Hospital, Dublin. Drawings, specification, and conditions of contract by Mr. C. H. Ashworth, F.R.I.B.A., 12 and 13, William-street, Dublin. Quantities from Messrs. Paterson & Kemser, 95, Lower Leeson-street, Dublin, on deposit of 1l.

AUGUST 14.—**Halifax.**—HOUSES.—Erection of two dwelling-houses in Tation-road, Holwell Green. Plans, specifications, and quantities from Messrs. Chas. F. L. Horsfall & Son, architects, Lord-street-chambers, Halifax.

AUGUST 14.—**Pontypridd.**—COTTAGES.—The Faldan Collieries Company, Ltd., Cardiff, invite tenders for erection of eighty-six cottages. See advertisement in this issue for further particulars.

AUGUST 14.—**Wales.**—HOUSE.—Erection of new house at Rhos. Plans and specifications at Gwalia House, Hall-street, Rhos.

AUGUST 14.—**London.**—EXTENSIONS.—Extensions to the gasworks. Plans and quantities at the gasworks.

AUGUST 15.—**Dartford.**—STAMPING STATION.—Erection of a stamping station for weights and measures, in Kent-road. Plan, specification, and quantities from the County Architect, 86, West-street, Maidstone.

AUGUST 15.—**Huddersfield.**—VILLAS.—Erection of two semi-detached villas, Marsh Platt, Honley. Plans seen, and quantities from Messrs. Dunn & Kaye, architects and surveyors, Huddersfield and Minsbridge.

AUGUST 15.—**Keynsham.**—REPAIRS.—For repairs to the Isolation Hospital. Specification from Mr. Henry M. Bennett, Surveyor, Old Bank-chambers, Corn street, Bristol.

AUGUST 15.—**Leamington Spa.**—EXTENSION OF H.M. WORKS.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of post-office. See advertisement in this issue for further particulars.

AUGUST 15.—**London.**—EXTENSION.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of dining-room at the General Post Office, North. See advertisement in this issue for further particulars.

AUGUST 15.—**London.**—N.—ALTERATIONS.—The Commissioners of H.M. Works and Public Buildings invite tenders for alterations to branch post-office, Stoke Newington, N. See advertisement in this issue for further particulars.

AUGUST 18.—**Birmingham.**—DEPOT.—Erection of a tramway depot in Whitmore-street. Quantities, on deposit of 3l. 2s., from the quantity surveyor, Mr. Anthony Rowe, King's Court, Colmore-row, Birmingham. Drawings at the office of the architects, Messrs. Martin & Martin, 106, Colmore-row, Birmingham.

AUGUST 19.—**Sheerness.**—HOUSES.—Erection of fourteen houses. Plans and specification seen, and information from Mr. Marshall Harvey, architect, 28, Colmore-row, Birmingham.

AUGUST 21.—**Scotland.**—CHURCH.—Erection of a Wesleyan church and school at Portessie. Plans and specifications with the Rev. J. Haslam, Minister, Portessie. Quantities from Mr. W. Beddoe Ross, architect, 3, Dumfries-place, Cardiff, on deposit of 1l. 1s.

AUGUST 22.—**Longton.**—TOWN HALL.—Alterations and extensions to Town Hall. Quantities and form of tender from the Architect, Mr. J. H. Beckett, A.R.I.B.A., Market-street, Longton, on deposit of 2l. 2s.

AUGUST 22.—**Mansfield.**—POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for new post-office. See advertisement in this issue for further particulars.

AUGUST 24.—**London.**—S.W.—CHURCH, LECTURE HALL, etc.—The Trustees of proposed Primitive Methodist church, lecture hall, etc., Lynton-road, Upper Tooting, S.W., invite tenders for said property. See advertisement in this issue for further particulars.

AUGUST 30.—**Fatcliff.**—BATHS.—Erection of public baths in Cromwell-road. Quantities on deposit of 2l. 2s., from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles.

AUGUST 22.—**Orkney.**—TOWER, etc.—Construction of a lighthouse tower, engine-room, and

BUILDING—continued.

The data given at the commencement of each paragraph is the latest date when the tenders or the names of those willing to submit tenders, may be sent in.

dwelling-houses on Copinsay, Orkney. Plans and specifications at the office of Messrs. D. & C. Stevenson, 84, George-street, Edinburgh. Quantities on deposit of 11. 1s.

AUGUST 28.—**Sidcup.**—FIRE-STATION.—Erection of a fire brigade station. Plans at the Council Office and specification and quantities, on deposit of 21. 2s., from Mr. Wm. Augustus Farnham, F.S.I., Surveyor, Council Offices, Sidcup, Kent.

SEPTEMBER 2.—**Cumberland.**—ADDITIONS, ETC.—Alterations and additions to Maryport Council school, also Netheron (Maryport) Infants Council school. Drawings and specifications at the office of the Architect, Mr. J. Forster, M.S.A., 13, Earl-street, Carlisle.

SEPTEMBER 5.—**Watford.**—BANDSTAND.—Erection of a bandstand in Cassiobury Park. Drawing and specification with Mr. D. Waterhouse, Engineer and Surveyor, Council Offices, High-street, Watford.

SEPTEMBER 6.—**Birmingham.**—HOMES.—Erection of two homes for infants at the Cottage Homes, Marston Green. Quantities, on deposit of 21. 2s., from Mr. C. Whitwell Son, architects, 3, Newhall-street, Birmingham.

* SEPTEMBER 13.—**Heybridge, Essex.**—SCHOOL.—The Essex Education Committee (Malden District Sub-Committee) invite tenders for new public elementary school for 468 children. See advertisement in this issue for further particulars.

NO DATE.—**Castlewella.**—ALTERATIONS, ETC.—Additions and alterations to manse. Plans and specification from Messrs. Hobart & Heron, architects, 10, Scotch Kirk-provident-buildings, Belfast.

NO DATE.—**Ennis.**—HOUSES.—Erection of twenty-six houses. Plans and specification, on deposit of 21. 2s., from Mr. Michael J. Carmody, Town Clerk, Town Hall, Ennis.

NO DATE.—**Glasgow.**—ALTERATIONS.—For alterations at 101 to 105, Dundee-street. Plan at the office of Mr. Johnstone, 12, Brougham-place, Glasgow.

NO DATE.—**Hempstead.**—CHURCH.—Erection of a new mission church. Drawing and specification, on deposit of 11. 1s., from Mr. Herbert H. Dunstall, A.R.I.B.A., F.S.I., architect, Bank-chambers, Railway-street, Chatham.

NO DATE.—**Walsingham.**—For alterations to the Red Hall. Apply to Mosleys, 6, Wormald-row, Leeds.

NO DATE.—**Monkerton.**—COTTAGES, ETC.—Erection of six cottages and small farmhouses, and alterations and additions to the farm dwelling-house and outbuildings. Messrs. Ellis, Son, & Bowden, F.S.I., Surveyors, Bedford-chambers, Exeter.

NO DATE.—**North Shields.**—ALTERATIONS.—Small alterations at the Guardians' Hall. Particulars on deposit of 11. 1s., from Mr. J. Tennant, architect and surveyor, Pontefract.

NO DATE.—**Rochdale.**—HOUSES.—Completion of eight houses. Particulars from Mr. Albert Ball, 9, Cheapside, Nottingham.

NO DATE.—**Silkestone.**—HALL.—Erection of a new miners' hall. Messrs. T. A. Page & Son, architects, 67, King-street, South Shields. Deposit of 21. 2s.

NO DATE.—**South Shields.**—SCHOOLS.—Erection of a block of school buildings. Messrs. T. A. Page & Son, architects, of 67, King-street, South Shields. Deposit of 21. 2s.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

NO DATE.—**Wigan.**—ALTERATIONS.—For alterations to premises, King-street. Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

Kirby-on-Bain and building a steel one. Mr. J. E. Chatterton, Clerk, Council Offices, Horncastle.

AUGUST 8.—**Port Talbot.**—BRIDGE.—The Great Western Railway invite tenders for the erection of a road bridge and of a footbridge. Plans and specification seen, and quantities from the Engineer at Neath Station.

AUGUST 8.—**Whitehaven.**—BRIDGE.—Erection of a ferro-concrete bridge over the River Ehen, at Braystones, Cumberland. Mr. G. Boyd, C.E., 33, Queen-street, Whitehaven.

AUGUST 11.—**Chester-le-Street.**—BRIDGE.—For strengthening and extending the existing arch bridge known as Vardies Bridge, Holmside. Plans and specifications seen, and forms of tender from Mr. G. W. Ayton, Highway Surveyor to the Chester-le-Street R.D.C. Deposit of 11. 1s.

AUGUST 22.—**Pontefract.**—EXTENSION.—For making an extension to the engine-house at the Roall pumping-station. Drawings at the office of the Borough Surveyor, Pontefract; or the engineers, Messrs. G. & F. W. Hodson, Bank-chambers, Loughborough, and quantities on deposit of 21. 2s.

AUGUST 26.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—Rebuilding of Cowhorn-hill Bridge, near Warrimley, and the construction of improved approaches. Plans seen, and specification and quantities from Mr. E. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

DECEMBER 19.—**Montevideo.**—BRIDGE.—Construction of a bridge across the River Santa Lucia. Particulars at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

NO DATE.—**Stamford.**—HEATING, ETC.—Engineering work and hot-water supply at the Workhouse. Quantities, on deposit of 11. 1s., from Mr. Rich. M. English, Clerk, Stamford.

SEPTEMBER 6.—**Gloucestershire.**—BRIDGE.—For improving the Gloucestershire approach to Chepstow Bridge. Plans seen, and specification and quantities, on deposit of 21. 2s., from Mr. E. S. Simcot, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

SEPTEMBER 6.—**Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

AUGUST 15.—**Shoeburyness.**—PAINTING.—For various painting works. Specification with Mr. F. Gregson, Clerk, 46, Alexandra-street, Southend-on-Sea.

AUGUST 16.—**Benfrew.**—PAINTING.—For execution of painter work at Dykebar Asylum, near Paisley. Specification and schedule, on deposit of 11. 1s., from Mr. J. Caldwell, Clerk, County-buildings, Paisley.

ROADS, SANITARY AND WATER WORKS.

AUGUST 5.—**Greenford.**—FLINTS.—Supply of chalk flints. Form of tender from Mr. W. H. Read, F.S.I., Surveyor, The Avenue, West Ealing.

AUGUST 7.—**Brecon.**—ROADS.—For improvements on the Crickhowell to Talgarth-road. Drawings and specification seen, and quantities, on deposit of 11. 1s., from Mr. W. Lewis Harpur, County Roads Surveyor, County Hall, Brecon.

AUGUST 7.—**Edinburgh.**—SEWER, ETC.—Construction of well and sewer at Leggett's Skinner's. Plans seen, and specification and quantities, on deposit of 11. 1s., from the Commissioners' Engineer, 13, Queen-street, Edinburgh.

AUGUST 8.—**Ashton-upon-Mersey.**—PAVING.—For the paving of Buck-lane with granite setts. Plan seen, and quantities from Mr. F. Hutton, Surveyor, Ashton-lane, Ashton-upon-Mersey.

AUGUST 8.—**Broadway.**—DRAINAGE.—For laying rock-concrete tubes for storm-water drainage. Specification with Mr. H. A. Huxtable, Clerk, Bank-chambers, Weymouth.

AUGUST 8.—**Crew.**—STREETS, ETC.—For the making and sewerage of two short streets. Plans and specification seen, and information from Mr. G. Eaton-Shore, Borough Surveyor, Earle-street, Crew. Deposit of 11. 1s.

AUGUST 8.—**Pontypool.**—ROADS, ETC.—Construction of roads and sewers. Specifications of the Surveyor of the Council, Town Hall, Pontypool, on deposit of 11. 1s.

AUGUST 8.—**Wolverhampton.**—STREETS.—Construction of new streets. Plans seen, and specification and quantities from Mr. G. Gresson, M.Inst.C.E., Borough Engineer, Town Hall, Wolverhampton.

AUGUST 9.—**Cheadle.**—SEWERAGE.—Construction of earthenware pipe sewers, with manholes, etc. Plans and drawings seen, and specification and quantities from Mr. Edward Sykes, Assoc. M.Inst.C.E., at the Council Offices, Cheadle, near Manchester, on deposit of 11. 1s.

AUGUST 9.—**Chislehurst.**—FLINTS.—Supply of 90 yds. of hand-picked flint flints. Particulars from Mr. H. E. Knight, Clerk of the Council, Council Offices, Chislehurst.

AUGUST 14.—**Lancashire.**—MATERIALS.—Supply of grit-stone rubble pitching and grit-stone edging. Forms of tender from Mr. W. H. Schofield, County Surveyor, County Offices, Preston.

AUGUST 14.—**Whitley.**—SEWERAGE.—For taking up and relaying the existing sewer in the back street between Countess-street and Duchess-street. Plan and specification seen, and quantities from Mr. A. J. Russell, M.Inst.C.E., the Council's Surveyor, Council Offices, Whitley Bay.

AUGUST 18.—**Preston.**—STREETS.—Leveling, paving, flagging, and making good streets between Ercroft-road and Tomlinson-road, and back road between Ainslie-road and Plungington-road. Specifications and other information from the Borough Surveyor, Town Hall, Preston.

AUGUST 19.—**Radcliffe.**—SEWERAGE.—For sewerage works extensions. Drawings and specifications seen, and quantities from Mr. W. L. Beckwell, Engineer, Council Offices, on deposit of 11. 1s.

AUGUST 23.—**Bonchurch.**—DRAINAGE.—Supplying and laying surface-water drain. Plans and specification, and quantities from Mr. T. R. Saunders, Assoc. M.Inst.C.E., Belgrave-chambers, Ventnor, Isle of Wight, on deposit of 11. 1s.

AUGUST 31.—**New Barnet.**—MATERIALS.—For supply of materials. Mr. Henry York, C.E., Surveyor, Station-road, New Barnet.

AUGUST 31.—**Wantage.**—SEWERAGE.—Laying of stoneware and cast-iron outfall sewers, and construction of purification works, and the construction of an approach road. Drawings and specifications seen, and quantities from Mr. John William Harris, Engineer and Surveyor, East Challow, Wantage, on deposit of 21. 2s.

NO DATE.—**Cardiff.**—DRAINAGE, ETC.—For road and drainage works. Mr. J. A. Sank, architect and surveyor, St. John's-square, Cardiff.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
TEMPORARY ARCHITECTURAL ASSISTANT.....	Pinchley U.D.C.	3l. per week	Aug. 19
WORKS FOREMAN	Southern Nigeria	See advertisement in this issue	No date.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
BUILDER'S STOCK AND MATERIALS, HARLESSEN—On the Premises.....	Joshua Baker, Cooke, & Stanlen	Aug. 11
DEALS, BATTENS, BOARDS, TIMBER, ETC.—Great Hall, Winchester House, E.C.	Churchill & Son	Aug. 23 or 24

WOOD (Continued).

[illegible]

JOISTS, GIRDERS, &c.

JOISTS, GIRDERS, &c.			
In London, or delivered Railway Vans, per ton			
Rollad Steel Joists, ordinary sections	£ s. d.	£ s. d.	
Compound Girders, ordinary sections	7 0 0	...	7 10 0
Steel Compound Stanchions	9 0 0	...	10 0 0
Angles, Tees, and Channels, ordinary sections	11 0 0	...	12 0 0
Flitch Plates	9 0 0	...	10 0 0
Cast Iron Columns & Stanchions,	9 0 0	...	9 10 0

METALS

		METALS.		Per ton, in London.	
		£	s.	d.	q.
Iron—					
Common Bars	.....	8	10	0	...
Staffordshire Crown Bars, good	.....	8	15	0	...
Staffordshire "Marked Bars" .....	.....	10	10	0	...
Mild Steel Bars .....	.....	8	15	0	...
Hoop Iron, beams &c. ....	.....	9	5	0	...
Galvanised .....	.....	17	0	0	...
(And upwards, according to size and gauge.)					
Sheet Iron—					
Ordinary sizes to 20 g.	.....	9	15	0	...
" " " 24 g.	.....	10	15	0	...
" " " 28 g.	.....	12	5	0	...
Sheet Iron, Galvanised, ordinary quality—					
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	.....	15	10	0	...
" " " 24 g.	.....	15	10	0	...
" " " 28 g.	.....	15	10	0	...

WOOL

BUILDING WOOD.		At per standard.	
Deals: best 3 in. by 11 in. and 4 in.	£ s. d.	£ s. d.	
by 9 in. and 11 in.....	14 0 0 ..	15 10 0	
Deals: best 2 by 9	13 10 0	14 10 0	

and 3 by 4

Battens: best 2½ by 6 and 3 by 6...	0	10	0	less than 7 in. and 8 in.
Deals: seconds	1	0	0	less than best.
Battens: seconds	0	10	0	" " "
2 in. by in. and 2 in. by 6 in. ...	9	10	0	... 10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	... 10 0 0
Foreign Sawn Boards—				
1 in. and 1½ in. by 7 in.	0	10	0	more than battens.

LEAD \pm

4 in.	1	0	0	battens.
For timber: best middling Danzig or Menzel (average specification)	5	0	0	
Do. 3 in. by 9 in.	5	1	0	
Small timber (8 in. to 10 in.)	3	1	6	
Small timber (10 in. to 8 in.)	3	5	0	
Second yellow deals, 3 in. by 11 in.	2	0	0	
Pitch-pine timber (30 ft. average)	4	1	0	
Joneses' Wood.				At per standard.
White Sea: first yellow deals, 3 in.	24	1	0	
3 in. by 9 in.	22	1	0	
Battens 2 in. and 3 in. by 7 in.	17	0	0	
Second yellow deals, 3 in. by 11 in.	18	0	0	
Battens 2 in. and 3 in. by 7 in.	14	0	0	
Third yellow deals, 3 in. by 11 in.	14	0	0	
Battens 2 in. and 3 in. by 7 in.	11	0	0	
Fourth yellow deals, 3 in. by 11 in.	18	1	0	
Do. 3 in. by 9 in.	14	0	0	
Second yellow deals, 3 in. by 11 in.	15	0	0	
Battens	11	1	0	
Third yellow deals, 3 in. by 11 in.	13	1	0	
Battens	10	0	0	
White Sea and Petersburg	10	5	0	

DEAD, 80

Under 2 in., thick extra.....	0	10	0	...	1	0	0
Yellow Pine—First, regular sizes	44	0	0	...	upwards.		
Oddments	32	0	0		#		
Seconds, regular sizes	33	0	0		#		
Oddments	28	0	0		#		
Kauri Pine—Planks, per ft. cube.	0	3	6	...	0	5	

LEAD to

	£ s. d.	£ s. d.
LEAD—Sheet, English, 4lb. up	17 5 0	...
Pipe in coils	17 15 0	...
Soil pipe	17 15 0	...
Compo pipe	20 15 0	...
ZINC—Sheet—	In caeks of 10 cwt.	
Vielle Montagne	32 5 0	...
Slesiam	31 15 0	...
	Zinc, in bundles, ls. per cwt. extra.	
COPPER—		
Strong Sheet	per lb.	0 1 0
Thin	"	0 1 0
Copper nail	"	0 10 "
Copper wire	"	0 10 "
BRASS—		
Strong Sheet	"	0 11 "
Thin	"	0 10 "
TIN—English Ingots	"	0 11 "
SOLDER—Plumbers	"	0 8 1/2
Flux	"	0 1 1/2
Blowpipe	"	0 1 1/2

ENGLISH SHEET GLASS IN CRATES OF

STOCK SIZES.*			
Per Ft., Delivered.			
15 oz.	thirds	.....	24d.
"	fourths	.....	14d.
21 oz.	thirds	.....	34d.
"	fourths	.....	24d.
23 oz.	thirds	.....	44d.
26 oz.	fourths	.....	34d.
"	thirds	.....	54d.
"	fourths	.....	44d.
Fluted Sheet, 15 oz.		.....	34d.

ENGLISH ROLLED PLATE IN CRATES OF

STOCK SIZES.*		
Per Ft., Delivered.		
1/4 Hartley's	2d.	Figured Rolled, Ox-
1/4 "	2 1/2d.	ford Rolled, Oce-
1/4 "	2 1/2d.	anic, Arctic, Muffed,
		and Rolled Cathed-
		ral, white..... 3d.
		Ditto, tinted..... 5d.

* Not less than three crates.

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 3 7
" " in barrels	"	0 3 8
" " in drums	"	0 3 10
Boiled " in barrels	"	0 3 10
" " in drums	"	0 4 1
Turpentine in barrels	"	0 3 3
" " in drums	"	0 3 5
Genuine Ground English White Lead, per ton	21 10 0	
Red Lead, Dry	20 0 0	
Best Linseed Oil Putty	per cwt.	11 0 0
Stockholm Tar	per barrel	1 12 0
VARNISHES, &c.		£ s. d.
Fine Pale Oak Varnish	0 8 0	
Superfine Pale Elastic Oak	0 12 0	
Fine Extra Hard Church Oak	0 10 0	
Superfine Hard-drying Oak, for seats of Churches	0 14 6	
Fine Elastic Carriage	0 12 0	
Superfine Pale Elastic Carriage	0 16 0	
Fine Pale Maple	0 10 0	
Finest Pale Durable Copal	0 18 0	
Extra Pale French Oil	1 1 0	
Eggshell Flatting Varnish	0 18 0	
White Pale Enamel	1 4 0	
Extra Pale Paper	0 12 0	
Best Japan Gold Size	0 10 0	
Best Black Japan	0 16 0	
Oak and Mahogany Stain	0 9 0	
Brunswick Black	0 8 0	
Black and White	0 16 0	
Knocking	0 10 9	
French and Brush Polish	0 10 6	

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not; notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications, and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Promoted Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the owner; and we cannot publish announcements of Tenders unless in which the amount of the Tender is stated, nor any list in which the lowest Tender is under 100L, unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

BOURNEMOUTH.—For Charminster-road International Stores. Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, London, W.C.2.

A. B. and C.		Total of Estimates
Bainbridge & Son	£ 2,592 0 0	
Musellwhite & Sapp	£ 243 0 0	
Brown & Sons	£ 540 12 0	
W. G. Tarrant	£ 540 4 0	
George & Harding	£ 511 15 8	
Jones & Son	£ 510 0 0	
Jenkins & Sons	£ 492 0 0	

BRIGHTON.—For new Presbyterian church. Mr. Edward Procter, M.R.A., architect and surveyor, 33, St. Paul's-churchyard, London, E.C.4.

Church.	Bound.	Months	Total to Com- plete.
£	£	£	£
Atterley, Sons, & Holmes	6,298	275	5,573
W. Lawrence & Son	6,272	212	6,514
Barclay & Co.	6,239	325	6,853
W. Lawrence Bros.	6,230	352	6,982
Smith & Sons	5,885	325	6,110
W. Bates & Sons	5,570	290	6,100
[All of London.]			
Parsons & Sons	5,554	238	6,002
Lynn & Sons	5,502	247	6,009
Gold & Sons	5,479	248	6,017
Langley & Son	5,718	245	5,993
Barnes & Sons	5,749	237	5,981
[All of Sussex.]	5,708	224	5,933

[Architect's estimate, £6,000.]

Accepted on account of time.

BRIDLINGTON.—For alterations to the Corn Exchange. Mr. J. Earnshaw, architect, Carlton House, Bridlington.— £114 16 6

EDGWARE.—For additions and alterations to the Edgware Council school, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee

HARLOW (Essex).—For the erection of six cottages at Harlow, for the Oddfellows Society Harlow. Mr. Chas. E. Blackburn, architect, 355, High-road, South Tottenham

HAROLD WOOD (Essex).—For the erection of new domestic buildings, convalescent home, Harold Wood. Mr. J. G. Morley, Borough Engineer, West Ham

HEMEL HEMPSTEAD.—For erection of a school, for the Education Committee of the Corporation of Hemel Hempstead. Mr. Walter R. Locke, architect. Quantities by Mr. J. E. H. Low, Chesham

ILFORD.—For constructing a reinforced concrete culvert, for the Ilford Urban District Council. Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council

LONDON.—For erection of a public library at Enfield. Mr. R. Collins, Surveyor, Public Offices, Enfield

LONDON.—For redecorating the Central Offices, Storey-court, Strand, for the Metropolitan Water Board

LONDON.—For erection of a cottage at the Stoke Newington Reservoirs, for the Metropolitan Water Board

LONDON.—For roofing over Dowson's dock subway with steelwork, to support the public highway in Narrow-street, Limehouse, E., for the Metropolitan Borough of Stepney. Mr. M. W. Jamieson, A.M.Inst.C.E., Borough Engineer

LONDON.—For alterations to the domestic portion of 85, Balford-road, Hackney. Messrs. Gordon, Wilson, & Co., architects, 1, Vaughan-avenue, Goldhawk-road, W.2.

LONDON.—For alterations to No. 5, Upper Berkeley-street. Mr. Fredk. W. Foster, architect, 25, Bedford-row, W.C.2. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row, W.C.2.

LONDON.—For alterations and additions to Warwick House, St. James's, S.W., for Miss M. Headley Dodge. Mr. Frederick W. Foster, architect, 25, Bedford-row, W.C.2. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row, W.C.2.

LONDON.—For alterations to premises, 42 and 44, Stoke Newington School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For extending the boys' staircase at the Silwood-street School, Rotherhithe, for the London County Council

LONDON.—For erecting a housewife's centre at the Daniel-centre School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For rebuilding No. 312, Vauxhall-bridge-road, S.W. Mr. Fredk. W. Foster, architect, 25, Bedford-row, W.C.2. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row, W.C.2.

LONDON.—For alterations and additions to 7, Crownwell-road, South Kensington, for the Hon. Kenneth Campbell. Mr. B. Vaughan Johnson, M.A., A.R.B.A., architect, 10, Queen Ann's-square, S.W. Quantities by Messrs. Tucker & Huntley, 22, Buckenham-street, W.C.2

LONDON.—For drainage work at the Brownhill-road School, Lewisham, for the London County Council

LONDON.—For construction of conveniences at Wandsworth Common, for the London County Council

LONDON.—For underpinning walls at the Industrial School, Hammersmith, for the London County Council

LONDON.—For painting and cleaning the Westville-road School, Hammersmith, for the London County Council

LONDON.—For electric lighting at the Kensington (North) fire-station, for the London County Council

LONDON.—For alterations to the chief fire-station, for the London County Council

LONDON.—For the erection of a secondary school for girls on the "Furzedown" site, Wandsworth, for the London County Council

LONDON.—For extending the boys' staircase at the Silwood-street School, Rotherhithe, for the London County Council

LONDON.—For erecting a housewife's centre at the Daniel-centre School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For alterations to premises, 42 and 44, Stoke Newington School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For extending the boys' staircase at the Silwood-street School, Rotherhithe, for the London County Council

LONDON.—For erecting a housewife's centre at the Daniel-centre School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For alterations to premises, 42 and 44, Stoke Newington School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For extending the boys' staircase at the Silwood-street School, Rotherhithe, for the London County Council

LONDON.—For erecting a housewife's centre at the Daniel-centre School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For alterations to premises, 42 and 44, Stoke Newington School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For extending the boys' staircase at the Silwood-street School, Rotherhithe, for the London County Council

LONDON.—For erecting a housewife's centre at the Daniel-centre School, Behnd Green, and conversion of a combined cookery and laundry centre, for the London County Council

LONDON.—For reconstruction on the conduit system of electric traction of tramways in (i) Seven Sisters-road and Green lanes and (ii) Green-lanes and Southgate-road, for the London County Council—

	Tramway Works.		Paving Works.		Total.	
	£	s. d.	£	s. d.	£	s. d.
W. Underwood & Bros.	80,505	19 6	5,441	15 10	85,946	35 4
Dick, Kerr, & Co., Ltd.	67,750	15 0	5,788	10 6	73,538	3 6
A. N. Coles.	67,686	1 3	5,350	17 2	73,036	18 5
Kirk & Randall.	67,015	0 0	5,618	6 0	72,633	6 0
J. Mowlem & Co., Ltd., Westminster, S.W.*	66,646	2 2	5,347	0 8	71,993	2 10

LONDON. For work in connection with the construction, on the overhead system, of electric traction of tramways from Brixton-road to Herne-hill, for the London County Council—

	Tramway Works.		Paving Works.		Total.	
	£	s. d.	£	s. d.	£	s. d.
W. Underwood & Bros.	20,681	0 4	9,968	7 5	30,649	7 9
J. Mowlem & Co., Ltd.	19,846	15 8	9,002	5 11	28,849	1 7
A. N. Coles.	19,010	7 10	9,681	0 3	28,691	8 1
G. Wimpsey & Co.	18,407	6 10	9,280	2 2	27,687	0 0
Dick, Kerr, & Co., Ltd.	18,850	4 6	8,653	16 2	27,503	0 8
Kirk & Randall, Woolwich, S.E.*	18,104	9 0	9,004	11 10	27,108	0 10

LONDON.—For extending the boys' staircase at the Rosebery-avenue School, E.C., for the London County Council—

A. Roberts & Co., Ltd., £600	G. Godson & Sons, £483
A. J. Staines & Co., Ltd. 595	Marchant, Hirst, & Co. 480
L. C. Tennant & Co., 588	T. Bendon, Ltd. 150
J. Garrett & Son 583	Lama, Thornton, & Co., 289, High-street, Camden Town* 399
W. Reason 499	
H. W. Crook & Sons, Ltd. 402	

LONDON.—For supply of machine tools for the third section of central car repair depot, for the London County Council—

Thayges, Ltd.	£3,398	0 0
Judson Jackson Co., Ltd.	3,274	0 0
Pollock & Macnab, Ltd.	2,906	10 0
J. Parkinson & Son	2,853	12 6
Buck & Hickman, Ltd., White-chapel-road, E.	2,777	12 4
H. W. Ward & Co., Ltd.	1,547	8 6
Ward, Haegras, & Smith.	1,376	5 0
J. Holroyd & Co., Ltd.	1,332	0 0
Nelson Bros.	706	10 0
Selson Engineering Co., Ltd.	373	0 0

* Less 2½ per cent. discount.

LONDON.—For heating and ventilation at the old building at the London County Council Shoreditch Technical Institute, for the London County Council—

G. & E. Bradley.	£697	0
E. Deane & Beal, Ltd.	612	8
W. G. Cannon & Sons, Ltd., 107, London road*	650	0

LONDON.—For installation of electric light at the Horniman Museum, for the London County Council—

Waring & Withers.	£188	7 6
E. Newbold.	170	0 0
G. Weston & Sons, Ltd.	155	0 0
Tilley Bros., 53, Kingsland-road, N.E.*	151	0 0

LOWESTOFT. For the erection of a parish hall and institute, for the Building Committee. Mr. A. C. W. Blyth, M.S.A., architect, Victoria-chambers, 62, London road, Lowestoft—

W. T. Croft.	£4,364	18 6	Bedwell & Parker.	£4,065	0 0
T. H. Yell.	4,250	0 0	G. E. Hawes & Son.	3,994	0 0
R. C. Todd.	4,220	0 0	Mobbs Bros., Gordon-road, Lowestoft*	3,987	0 0
W. Forder.	4,200	0 0			
A. G. Bennett & Son.	4,188	0 0			
C. R. Cole.	4,127	10 0			

NUNEATON.—For additions to the engine-house and enlargement of the pump-well. Mr. F. C. Cook, Borough Surveyor, Nuneaton—

W. Sangwin.	£1,392	5 11
T. Hickman & Sons.	1,362	19 3
Bowles & Son.	950	0 0
G. E. & W. Wincott, Nuneaton*	839	3 11

PL UMSTEAD.—For repairs to the Plumstead pumping-station, for the Metropolitan Water Board—

Thames Iron Works, etc., Co., Ltd.	£450	0
Sengers, Ltd.*	288	12

SHROPSHIRE. For the erection of two labourers' cottages at New House Farm, Crumser Arms, Shropshire, for Mr. F. Fleming Baxter. Messrs. Hayward & Maynard, architects, 14, John-street, Adelphi:—

Turford & Southward, Ltd., Ludlow.	£450
---	------

STONE (Staffs). For sewage-disposal works, pumping machinery, and destructor. Mr. Frank J. Commis, engineer, 5, Victoria-street, Westminster, S.W.—

T. Mason & Son, £7,100	0 0	F. Barke & Son, £6,751	4 10		
A. H. Price & Co., £9,083	14 3	Sanders & T. Godwin.	6,900	0 0	
C. J. Seville, Ltd.	6,247	17	Stoke-on-Trent*	6,658	19 3

[Engineer's estimate, £7,655.]

TONGE. For completion of nave and aisles to St. Michael's Church, Tonge, Middleton, near Manchester. Messrs. Austin & Paley, architects, Lancaster. Quantities by Messrs. Wright & Son, surveyors, Lancaster—

Grundy, Sons, & Co., Middleton*	£3,496	2 6
--------------------------------------	--------	-----

J. J. ETRIDGE, JR.
SLATE MERCHANTS. LTD.

EXPERTS IN
**SLATING,
TILING.
BEST WORK ONLY.**

Telephone 2685 Wall, or write

**BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.**

**Ham Hill Stone,
Doulting Stone,
Portland Stone.**
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son,
The Doulting Stone Co.)
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Grey Stone Lime,
GROUND LIME, WHITE CHALK LIME,
PORTLAND CEMENT,
PLASTER, SIRAPITE, AND SAND.
Delivered in truck loads to any Station, or by vans in London.
ADDRESS: **JOSEPH S. PETERS.**
Works: **MERTHAM, SURREY.** Tel.: Mersham 3.
Depot: 417, OLD KENT ROAD. Tel.: Hop 3681.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

OGILVIE & CO. Telephone: DALSTON 1388.
Many years connected with the late firm of W. H. J. LARSEN & CO., Ltd., of Bunhill Row.

Amhurst Works, DALSTON LANE, N.E.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by

THE
French Asphalte Co.

Whose name and address should be inserted in all specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

**5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.**

EWART'S

Cures in 19 cases out of 20.

"**EMPRESS**"

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

Established 1834.

Telephone:
2550 North.

SMOKE-CURE

THE BUILDER

VOL. CL.—No. 7575.

AUGUST 11, 1911.

CONTENTS.

	PAGE
EVIDENCE IN PRIVATE BILLS	153
THE ARCHITECT AS BUILDER	154
NOTES	154
THE STORY OF THE BRIDGE I. PRIMITIVE BRIDGES (WITH ILLUSTRATIONS)	155
DEPTFORD LIBRARY COMPETITION (WITH ILLUSTRATIONS)	156
"SOUTH KENSINGTON"	158
THE ROYAL SANITARY INSTITUTE CONGRESS, BEL FAST (WITH PLANS)	160
THE ROYAL ARCHEOLOGICAL INSTITUTE IN SOUTH WALES	162
GENERAL NEWS	162
CORRESPONDENCE (WITH ILLUSTRATION)	163
INTERCOMMUNICATION COLUMN	163
EDITORIAL SUMMARY	164
COMPETITION NEWS	164
NOTES TO ILLUSTRATIONS	164

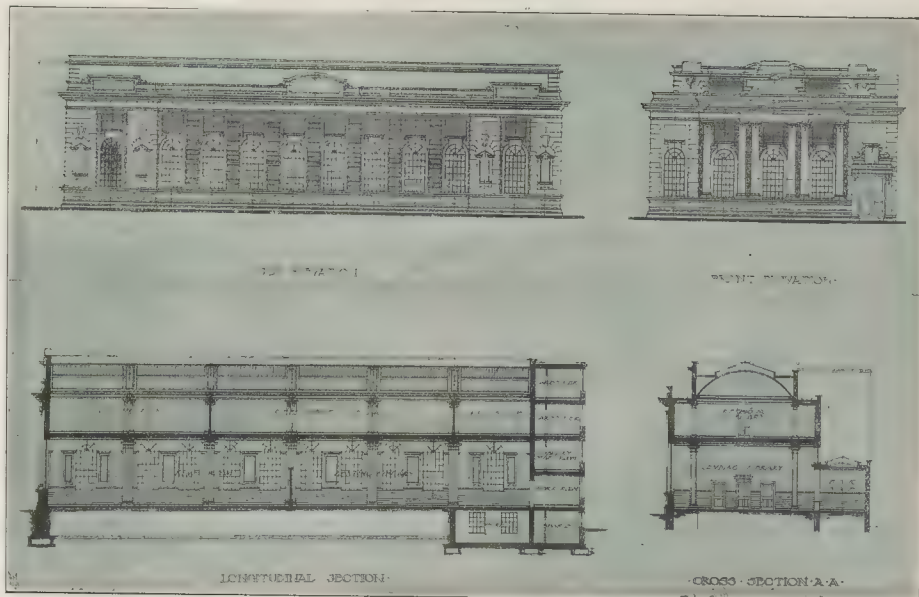
	PAGE
MONTHLY REVIEW OF CONSTRUCTION	165
BUILDING IN CANADA (WITH ILLUSTRATION)	165
NOTES ON SOME DEFINITIONS USED IN STRUCTURAL MECHANICS (WITH DIAGRAMS)	165
THE TOWER OF PISA (WITH ILLUSTRATION)	167
REINFORCED CONCRETE GIRDER OF 80-FT. SPAN (WITH ILLUSTRATIONS)	168
NOTES	168
THE BUILDING TRADES	169
AUSTRALIAN BUILDING AND LABOUR NOTES	169
IS EXTERNAL POINTING IN BRICKWORK DOOMED?	169
SOME LEGAL QUESTIONS ABOUT EXTRAS	169
BUILDING AND LABOUR IN MELBOURNE	170
GENERAL BUILDING NEWS	170
APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909	171
PROJECTED NEW BUILDINGS IN THE PROVINCES	171

	PAGE
LAW REPORT	172
FOREIGN AND COLONIAL	173
LONDON COUNCILS	173
OBITUARY	173
PATENTS	173
SOME RECENT SALES	174
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ..	175
PRICES CURRENT	177
TENDERS	178

Illustrations.

A LOGGIA IN A PUBLIC GARDEN: R.A. SCHOOLS
TRAVELLING STUDENTSHIP. BY MR. ADRIAN
BERRINGTON.

ILLUSTRATIONS OF BRIDGES: DARTMOOR, DARJEELING
AND SRINAGAR, KASHMIR.



Deptford Library Competition: First Premiated Design, by Sir A. Brumwell Thomas. (See page 156.)

EVIDENCE IN PRIVATE BILLS.

PARLIAMENT having now laid down the general principle that in future all Private Bills must show a proper consideration for any æsthetic questions involved; and must be prepared by and with the advice of qualified experts, it is time that the procedure of the Select Committees should be so altered and improved as to give effect to the will of the nation.

If we consider this ruling in conjunction with the emphasis laid on the value of the amenities of our cities in the Town Planning Act we are encouraged to assume that the national conscience is at last fully awakened to the enormity of

our previous methods, and that we have at length realised that material prosperity is not the ultimate end of life, or even of the conduct of public affairs, or the practical satisfaction of material necessities the only object of our public improvements.

Interpreting this principle in the widest sense, we are justified in saying that it should not apply only to bridges over the Thames, but to all constructive and engineering work throughout the country, not only bridges, but railways, docks, canals, and harbours—in fact, to every class of work of whatever description that affects the amenities of the town or alters the face of the country-side.

The difficulty is that when a Private Bill comes before a Select Committee there is no one to say whether or not it involves æsthetic questions. When we think of some of the so-called improvements perpetrated in the past we are quite prepared to believe that a Select Committee approved them without ever realising that any artistic questions were involved; and even now we could almost believe it to be possible, for we are not aware that there is any competent authority whose duty it is to say whether a Bill does or does not affect them. Neither are we aware that any machinery exists to ensure that where such questions

are affected they shall receive adequate consideration.

Possibly it might be better to withdraw all Bills affecting artistic questions from the Select Committees and deal with them otherwise, but while the present method obtains the procedure should at least be more suitable to the nature of the matters to be discussed.

The extraordinary thing is that, although their interests may be vitally affected, the general public can do nothing. They have no standing and no right to protest. The proposals before the Committee may prejudice public interests, but, unless they also prejudice private interests, it seems to be left to the chance that some public-spirited society may happen to notice what is going on, and be willing to be heavily penalised for presuming to be so public-spirited as to oppose it in the interests of the general welfare of the State. Even then it seems that they have no legal right to appear, but must obtain the permission of the Committee and the gracious consent of the promoters, who have a right to object to their appearance. Surely such matters should not be left to chance; recognised opposition seems as necessary here as in the House itself.

At present the procedure seems all in favour of the promoters—whether their proposals are good or bad. If anyone whose personal interests are affected opposes the scheme his opposition is discounted as being prompted solely by a selfish regard for his own interests. If any one who, having special knowledge of the subject and no personal interest to serve, might be credited with a disinterested regard for the public welfare, ventures to say a word he is promptly told to mind his own business. If he does get in a word of protest it is by favour of the Committee, and not by right. In either event the promoters score. Given a sufficiently wealthy Corporation and anything may go through.

We could well imagine that this procedure might be a relic of the days when influential capitalists were able to influence the procedure of Parliament to suit their own interests and not those of the public, but it seems rather out-of-date in these democratic days.

When the subject under discussion is of an ordinary business nature, with which the ordinary business man is competent to deal, it might with justice be contended that the members of the Committee are there to represent the public and to protect the interests of the State; but even if they could always be trusted immediately to grasp the full significance and effect of a scheme with which they were not previously acquainted, and to discover for themselves the many aspects of the case deliberately withheld from their notice by the promoters, they would not be competent to protect the interests of the public, where architectural and other artistic questions were concerned, unless they happened to be artists themselves.

If, realising their own limitations, they admit the value of expert evidence, they should also realise that the case for the promoters is only one side of the question. If this is supported by expert evidence the interests of the State may demand that

equally competent evidence be called in support of the other. There is never any harm in hearing both sides of a question.

THE ARCHITECT AS BUILDER.

THE more recent developments in the organisation of garden suburbs have included one that has aroused a marked interest among architects and others. The fact that this interest has taken the form of criticism, in some cases favourable, but in others most definitely adverse, does not in our view prove it to be undesirable that the experiment in question should have been made; indeed, we are inclined to think that it must have been of considerable value in many cases in bringing home to many a young architect a number of practical considerations, unconnected with the art of architecture, but very germane to the execution of building work. The exhibition at Gidea Park and others of a similar character have admittedly been more or less experimental, and, while both from the architectural and the commercial standpoint some defects have become apparent, yet the knowledge gained may be held to have justified the experiment.

The promoters seem to have clearly indicated the terms that they were prepared to offer. These were evidently intended to be fair and reasonable, and, if a competitor thought not, he was in no way compelled to take part. The conditions appear to have been closely adhered to throughout, and on the business side we cannot see that any case has been made out against the promoters. Of course, we must recognise the regrettable case in which a young and struggling architect may have been tempted into taking up financial responsibilities for which he is unfitted, and which may distract him from his legitimate avocation, but, on the other hand, there are others to whom such a competition must have given a lead as to the direction in which they can be of most service to the public.

As a general rule, however, it is certainly not in the best interests of architecture that it should be combined with financial speculation, though there are a limited number who can work usefully on these lines. This being the case, we think that any future schemes for improving the architecture of our suburbs should keep quite distinct the questions of design and of building. There are many ways of doing this, and not only will such a division, which is but the one generally recognised as expedient, avoid the objections that have been pointed out, but it will result in a far superior architectural treatment for such an estate.

The weak point in the garden city and garden suburb is the "bitty" and confused effect resulting from the multiplicity of ideas packed into a limited space. However careful the arrangement, when we see in a road some 200 yds. long the work of some twenty architects, each of whose designs was prepared without any knowledge of what the others were doing, there is bound to be too great a

variety of treatment and consequent confusion in the ensemble.

If prizes were offered for designs only, then the successful competitors can be allotted, not a scanty 40-ft. or 50-ft. plot, but an area sufficient for a group of houses harmoniously arranged. The building should be done by the estate; or if this is, for financial reasons, impracticable, the promoters are surely in as good a position to arrange for builders to take up the ground as is the individual architect. At Gidea Park some of the estate is being dealt with in this manner, and this portion compares favourably with that devoted to the exhibition, simply because of the advantage gained by designing a group of houses on uniform lines, over the more or less haphazard juxtaposition of specimen cottages.

Thus we find two drawbacks to the method of making the architect his own builder—one the personal influence on the architect as an artist, and the other the effect on the architectural character of the estate owing to the compression of too many ideas into too small an area. Taking both these into consideration, we think that promoters will be wiser in future if they rely on the older method of obtaining their architecture and their financial support from distinct sources.

We would not discount the value of the experiments that have been made, as we cannot but feel that without them we should not have been able to realise many of the possibilities before us in suburban developments. Probably most of the architects who have taken part in them have gained valuable information at not too costly a rate; but experiments are useless unless they add to our stock of knowledge, and we may anticipate that future ones will take a somewhat different form.

NOTES.

Hyde Park
Corner
for King
Edward VII.

WE are very pleased to find such a general consensus of public opinion in favour of Professor Adshead's plan for the memorial to King Edward VII. published in our columns last week. It has been placed before a number of Members of Parliament and their opinion is almost unanimously in favour of this site in preference to that at present approved by the Committee. This Committee will be asked to consider the new proposal, and we cannot but feel that they will be impressed by its many advantages. Among these it may be mentioned that it is in as close a relationship to Buckingham Palace as either of the previous sites, and is on that ground likely to meet with the King's approval, while its detachment from the Victoria Memorial gives it an independent value of its own instead of rendering it merely a kind of annex to that scheme, such as it would have been in both the first site selected and the one at present officially supported by the Committee.

The Traffic
Question.

WHILE the question of a memorial should be decided solely on the grounds of its expressing artistically the attributes of the individual commemorated and should not be mixed up with

the fulfilment of practical demands, only a pedant would object, if it can be shown that these first requirements are adequately met, if other gains can be claimed in addition. Now Professor Adshead's scheme, as well as providing a fine site for the monument, very greatly improves the possibilities for traffic control at this point. Since the time of last "improvement" at Hyde Park Corner, we have grasped the disadvantages and risks of large open spaces intersected by numerous traffic routes, of which this is a typical example. We now know them to be dangerous to the pedestrian, and costly in the amount of direction demanded for the traffic. Any scheme more in accord with our present knowledge of traffic requirements may certainly claim this as an added merit.

The Greater London Railway.

We cannot think that in rejecting the Greater London railway scheme, the Committee of the House of Lords has acted in the best interests of our great city. Though at the present time the scheme may be a little in advance of the requirements, it will in the near future become impossible to carry out on account of the enhanced value of the land it would require to schedule. It possesses many points of similarity to the railway portion of the scheme propounded by Mr. D. Barclay Niven, and supported by Mr. G. L. Pepler in a carefully reasoned paper read before the Town Planning Conference last October. The general merits of such a scheme are obvious, and we must naturally feel some regret in seeing the rejection of any proposal that might lead to its adoption, if only in part. We do not believe that we have heard the last of the Greater London Railway, and we should not be surprised to find the proposal revived. Might we hint to the promoters that if their scheme provided for an outer boulevard, and other amenities, it should carry with it a force of public support that no Parliamentary Committee could resist?

The Citadel of Aleppo.

In a letter to the *Times*, Mr. H. Pirie-Gordon draws attention to the shameful neglect of the historic monuments in Asia Minor and the supine attitude of the Government at Constantinople towards these. In Urfa the Byzantine walls are in process of being destroyed; at Berdjik, a similar destruction is taking place; and now it has been publicly announced that the Castle of Aleppo is to be levelled, and the stones sold as building material. It is almost inconceivable in these days that such a piece of vandalism should be attempted. Aleppo, without the castle on its citadel hill, will lose all claim to distinction; one might almost as well talk of levelling the Acropolis by way of improving Athens. The extent to which Aleppo depends on this citadel group for its effect may be appreciated by any who have at hand "Amurath to Amurath," by Gertrude Lothian Bell.

A CASE recently decided in the Courts, in the course of which it was alleged that an architect had, by special request or instruction from his

client, withheld a certificate due to the builder, led to a judicial pronouncement which cannot fail to be of service to the profession. Some clients seem to think that an architect can be retained, like an attorney, to exact the last pound of flesh from the builder, and to strain the authority vested in him by the contract in the owner's interest to the utmost extent that legal technicalities will permit. On the contrary, the judges laid it down that the position of the architect, as between client and contractor, is an impartial and judicial one. We think this fact cannot be emphasised too often, and that its recognition by the courts cannot fail to be specially helpful to young architects. Being naturally anxious to build up a practice by pleasing their clients, they may find it rather difficult at times to hold their own with influential people, who may be disposed to be overbearing.

THE STORY OF THE BRIDGE.

By WALTER SHAW SPARROW.

I.—PRIMITIVE BRIDGES.

It is reasonable to suppose that prehistoric man owed his first timber bridge to a storm of wind, which hurled down a tall tree across a wide crevasse in a glacier of the Ice Age. Many a bridge of this accidental sort was probably used long before the period of the cavemen, during those mysterious times when a type of ape, growing tired of its own active life on all-fours, passed through its evolution from monkeyhood into manhood, leaving a great many of its kith and kin either stranded for ever at the halfway stations of gorillahood and chimpanzeeism, or hopelessly in the rear as little and agile tree-climbers. As man seems to have had for his first ancestors a breed of apes born with a taste for experiment and discontent, it is not surprising to find that the earliest human efforts to pass from bad to better took hints from Nature and her marvels. Cave-lions and cave-bears were compelled to give up their homes to man; the fire stored in flint was discovered when the first human weapons were chipped to a point; clay was moulded into utensils, and the building methods of birds and beasts were patterns for imitation. We know, for instance, that man dug round pit-dwellings into which he crawled on his stomach along a circular burrow, finding warmth and safety

in the earth like many other animals. Later, encouraged by the example set by beavers in their dams and lodges, human craftsmanship evolved the lake-dwelling and the round hut, using for the timber walls the same plaster of mud mixed with straw and loam that house martins have ever employed in their nest-building.

Well now, as soon as man had passed through that technical evolution to which he owed the solid foundation of his lake-homes he was a primitive architect, with knowledge enough to build a bridge of timber; and if we keep in mind the way in which he laid enduring foundations in a lake we may infer, without any great extravagance, that his wooden bridges were akin to those at Srinagar, the capital of Kashmir, a city founded in the Vth century A.D., and justly famous for the quaint youth of its unchanging architecture. Seven bridges there span the River Jhelum, which is the Hydaspes of the Greek historians, and to study their construction is to feel oneself intimately in touch with a little Venice belonging to the long-ago of primeval handicrafts. I give two photographs, and as each represents a bridge having a superstructure of frail shops, partly held up by poles, the probable resemblance to a lake-village is plain for us to see. The piers are made of beams laid criss-cross, and in one bridge there is no angular platform below the piers to break the force of the current after heavy rains, while the pier timbers in the other rest on foundations similar in shape to those that Colechurch and Isebert designed and made for the great Old London Bridge, with its romantic houses, its chapel, its defensive towers, and cellars in the thickness of the piers. Old London Bridge, finished in 1209, and destroyed in 1830-31, had the same lineage as the shop-bridges of Srinagar, the first ancestors being prehistoric huts built over lakes on artificial islands formed of logs, brushwood and peat, with upper layers of timber, and branches held in position by scores of little piles.

But, although the workmanship at Srinagar is very primitive, you will see that the piers have been influenced by the progress of art in India, for the horizontal beams, cut in varying lengths, are composed, and they suggest a rude arch between the piers. This evidence of progress, too, is more noteworthy in another bridge at Srinagar, a bridge of unmortared stone, with booths of timber, over the Marqual Canal. Here the arch is nearly triangular, suggesting a descent from that cone-shaped hut from which the beehive houses of stone inherited the inclined jambs to their doorways.



Thirlmere Bridges.

(Photo. by Frith.)

The bridges at Srinagar, again, are not all burdened with houses. Some have nothing more than a narrow footway of boards and parapets of simple latticework. A very attractive example, with six piers, crosses the Jhelum at Baramulla, and beyond, but near to it, a primeval-looking village basks in the shade of the Himalaya Mountains. Here, if anywhere, we have a type of bridge similar to the prehistoric—if, as certainly seems probable, the art of the lake-dwellers left its sheltered moorings and adventured across rivers.

India is rich in primitive bridges, and I have now to speak of the suspension bridges of bamboo, near Darjeeling, for instance, and also in the Bermuda Hills. Here, in the Buria Kol, bridge-ropes are made with the glossy and silky fibres of the Nilgiri nettle. As to the general look of the handicraft, it is like human spider-webbing, and its effective simplicity and strength ought to lessen the busy pride that engineers now take in metal suspension bridges having often a prodigal ungainliness.

Thus far we have taken a rapid glance at primitive work in wood and in cane. To this part of our subject several Roman bridges belong. The earliest bridge built at Rome was called the Bridge of Stakes, Pons Sublicius, built, it is said, by Ancus Martius, then reconstructed by the high priests, who thereupon became known as "Pontifices." An illustration of the Pons Sublicius, adapted from historical descriptions, will be found in Colonel Emy's *Traité de l'Art de la Charpenterie*. The piles were driven into the river's bed, then straightened at the top with strong wind-braces; hurdle-like piers were formed in this way for the superstructure, which had latticed parapets. On this bridge Horatius Coclès passed for all time into the heroisms that beget their like.

The Pons Sublicius is believed to be the form of bridge that the Romans used frequently in their colonies, and this belief is reasonable, particularly as regards England, for England was a land of forests, and if the Romans had built important bridges of stone some relics of them would have been found in our larger rivers. Timber bridges, too, belong to the traditions of English workmanship, and a good many of them were stake-and-pile bridges. There was one at Windsor in the XVIIth century, and its primitive craftsmanship contrasted oddly with the Castle. Artists liked to draw it, and I have seen it in a picture by Joseph Farington, R.A., who lived from 1747 to 1821. Twenty years ago a very picturesque bridge of stakes kept the past alive at Old Shoreham, Sussex, but a recent illustration in Mr. F. G. Brabant's "Sussex" shows that it has been made as dull as grammar at

a wedding breakfast. Even so, its lineage is very ancient; there was a lawsuit about the bridge in the sixth year of Edward II., and it was then so old that a part of the woodwork had fallen into the river. And I dwell upon these matters here because the Old Shoreham Bridge of twenty years ago showed no more art in its construction than that which went to the making of a prehistoric lake-village.

But we turn now to another point. How were stone bridges evolved? This question belongs to the domain of speculative reasoning, but we can start out from definite facts. It is safe to believe that primitive man must have used the stepping-stones across rivers that the hazards of Nature often placed in the waters. This was the earliest bridge of stones, but its value to man not only varied from day to day, but was of no use at all when it was needed particularly—that is to say, after heavy rains, when rivers became too rapid or too deep to be forded on foot. Primitive man could not fail to notice this fact, and would he not apply to it his ripening intelligence as a builder? Each stepping-stone was a foundation for other stones to rest upon, and a cluster of them, carried up to a given height above the surface of the river during a flood, would form a pier, across which logs or slabs of stone could be laid to another pier, just as they are to-day in the Pont-y-Pant, in the Lledr Valley, Wales.

One remembers, in this connexion, that a famous bridge at Babylon, over the Euphrates, mentioned by Herodotus and Diodorus Siculus, had stone piers and a footway of movable planks, which were not left down at night. This bridge is ascribed by Herodotus to Nitocris, and by Siculus to Semiramis. It was easy to defend, and this good quality gave a long life to its central idea. A mediæval bridge with movable planking still exists in France. I have seen a photograph of it, but forget the name.

Very often the Romans used stone piers and a superstructure of wood, as in Trajan's magnificent bridge across the Danube, just below the rapids of the Iron Gate. This great achievement, dating from A.D. 104, and designed by Apollodorus of Damascus, was partly destroyed by Hadrian, who said that it made a passage along which the natives could make raids to the injury of the Roman rule; as if a system of barriers and guards could not have held the great footway against all comers. Still, relics of thirteen piers remain to this day. Originally the bridge was about 1,300 yds. long, with twenty arches of hewn stone, which, according to Dion Cassius, were 150 ft. high, 60 ft. wide, and 170 ft. from each other. Here we have travelled far from the Pons Sublicius

and the primitive bridge of planks or of stone slabs resting on stones. It is believed that in Trajan's bridge the piers were founded by sinking caissons, while during the building of the piers for the Babylon Bridge the Euphrates was diverted from its course. This happened also to the Thames when Old London Bridge was constructed, according to Stow.

Finally, which is the earliest type of stone bridge in Great Britain? If stepping-stones were ever developed into piers of loose boulders, we must expect to find some tradition of it in those parts of the country where descendants of the prehistoric inhabitants sheltered themselves from successive invasions. Ethnologists are now pretty well agreed that there are people in the British Isles whose lineage is probably as old as the Neolithic folk of England. They are dark, short, virile, and oval-headed; their features are small and their tempers quick; they are to be met with in Cornwall, Wales, the Isle of Man, Ireland, and the West of Scotland, as far north as the Orkneys. Well now, it is from Dartmoor that I choose for illustration a very primitive bridge made with granite slabs resting on granite piers. It stands at Postbridge on the East Dart. Locally it is called a "clapper" bridge, and its type is common in Cornwall. One is reminded at once of Stonehenge.

This does not mean that the "clapper" bridges still extant belong to pre-Roman times. They are mediæval, but the principle of their structure is prehistoric. The same type, but with variations, is found also in Wales, and I note particularly the Pont-y-Pant, in the Lledr Valley, for its piers are loose fragments of rock, and the wooden footway is primitively rustic. Here is a bridge that belongs to what I venture to call the period of developed stepping-stones. Among my illustrations is a good English example of primitiveness, at Thirlmere. In this quaint thing the stones form a sort of dam with angular holes in it, across which run wooden hand-bridges. Imagine how easy it would be in a shallow river to convert stepping-stones into a bridge of this kind, leaving a space here and there for the water to pass through.

DEPTFORD LIBRARY COMPETITION.

The site provided for this building is perhaps as good as could be expected. An island site is, of course, necessary to a perfect architectural rendering of the programme, but, where one with three frontages is provided, we are bound to recognise how much worse it might have been, and to be grateful accordingly.

The chief trouble with the site is that it faces the wrong way. It is rather long and narrow for a library, and its shorter side faces the main street. This leads to difficulties with the entrance. Considering the shape of the site, the natural place for the entrance is perhaps in the centre of the longer frontage to the side street; but from the point of view of approach it should be in the shorter frontage to the main road.

In the circumstances the competitors seem to have been in considerable doubt as to the course to pursue. The majority, including the author of the first premiated design, Sir A. Brunwell Thomas, and of the second, Messrs. Castle & Warren, place the front entrance at the narrow end of the site in the main street, while the author of the third premiated design, Mr. Henry T. Hare, was evidently so keenly alive to the advantages of both positions as to send in two complete designs. Others again, such as Mr. S. B. Russell, and Messrs. North & Robin, make out a very good case for placing the entrance at the side.

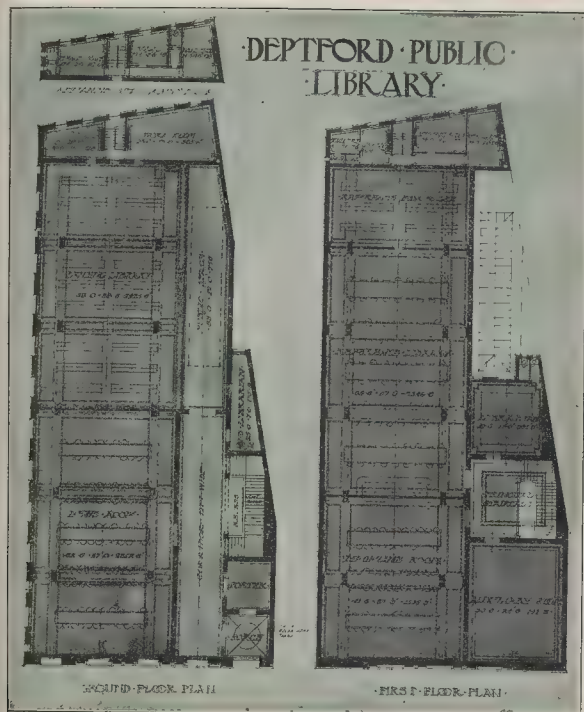
When a premium is awarded to a competitor who has submitted two complete schemes it would always be interesting to know to which the premium is given. In this case, we presume, it is to the one with the entrance in the same position as those placed first and second, but in other cases it might not be so obvious.

If we accept the point of view that the entrance direct from the main street is of the



[Photo. by C. S. Sargisson.]

The Weaver's Bridge, Wycollar.



First Premiated Design, by Sir A. Brumwell Thomas.

first importance, we find that the frontage is too narrow to admit of a central entrance. This has led to the entrance being placed on the side nearest the adjoining buildings, and the result is a type of plan that is more characteristic of a town house than a public library. The entrance corridor with staircase is taken straight through the depth of the news-room, which has its narrow end to the front, and is lit from front and side, and leads direct to a large room at the back—the lending library—the whole width of the site, which is lit from the side street, as behind it again is a block of staff rooms and stores lit from the back street.

This at once leads to difficulties with the sub-librarian's room, which cannot be both conveniently situated and properly lit, and with the lighting of the corridor, and the public space and counter of the lending library. To obtain light from the windows of the side street between the rows of stacks, the counter has had to be placed on the opposite side of the room where there is no light for the indicators. To obtain this light the public space is top lit, which involves the main wall of the reference library on the first floors being set back over the counter and carried over a space of some 30 ft. Practically the only one of the competitors on these lines who has been able to avoid this structural and aesthetic defect is Mr. Maurice B. Adams, who solves the problem

by boldly lighting both his ground and first floors from the garden of the adjoining property. Assuming that this expedient is allowable by the terms of the conditions, it has, of course, the added advantage of giving more room on the first floor.

The winning design by Sir A. Brumwell Thomas has achieved an apparent simplicity and straightforwardness of plan which probably went far to gain him the award. In order to obtain such desirable simplicity it may, of course, be necessary to make some sacrifice of accommodation and convenience of arrangement. It is, however, just a question whether in this case the process has not been carried too far, unduly cramping the staff and store rooms at the back—the book store being reduced by nearly one-half its area—crowding out the librarian's room from its most convenient position and placing it where it would be more suitable for a public room, and crushing the sub-librarian into a distorted apology for a room on the wrong side of the entrance corridor. Everything goes to the wall for the sake of a straight line—especially the sub-librarian. It is just possible that in revising this scheme for execution some of its simplicity will disappear, for it seems to be more or less arbitrarily imposed on the plan.

The main justification for making any undue sacrifice for the sake of breadth and simplicity of plan is, we suppose, that the loss can be

repaid by simpler and sounder construction, and by the greater breadth and finer architectural character of an elevation which is the natural result of such a plan. In this case, however, the elevation, although in itself one of the most pleasing, has no relation to the plan, and gains nothing by this process over those which show no undue sacrifice.

What seems so unaccountable is that, having taken considerable pains and some liberties with the programme to pull the plan together into an architectural form—which presumably he thinks the right form—the author should deliberately go back on himself and refrain from making use of the advantages so obtained by declining to give a straightforward expression of his straightforward plan. He takes some trouble, he appears to think it worth while to make some sacrifice, to obtain the structural suggestion of an interesting elevation, and then he seems to think better, or worse, of it, and hides it all behind a screen wall, as if he was ashamed of it. Had the main bulk of the large rooms been emphasised on the elevations and a separate feature made of the entrance block something characteristic would have resulted. As it is, the elevation is a sham, having no proper relation to the internal structure.

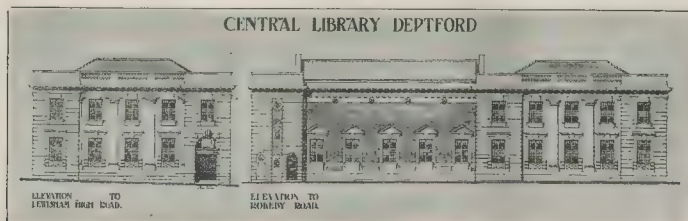
To produce a striking plan and an equally striking elevation having no relation one to the other is not the way to produce architecture, but it may be the way to win competitions while assessors continue to be impressed by such methods.

It must not, however, be supposed that the winning design is the only sinner in this respect. Indeed this falsity of elevation seems to be the weak spot of nearly all the designs that enter from the front. With the exception of Mr. Adams they all shirk the logic of the situation and try to make this entrance front look as if it was one large room from end to end. Curiously enough, they all adopt the same general treatment—a more or less solid mass at either end with three bays between, but as this is evidently not suggested by the plan, we can only guess at its source of inspiration.

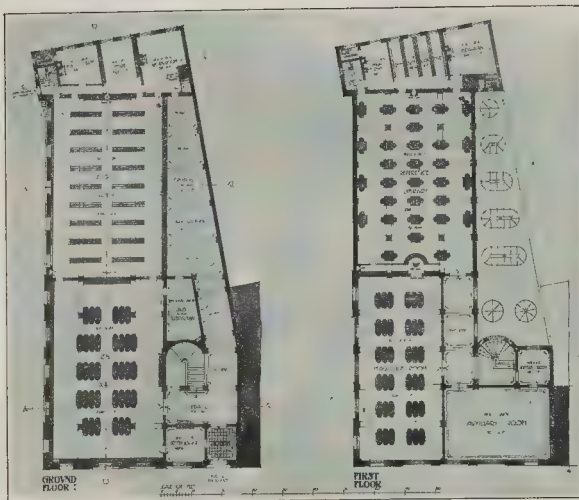
The advantage of the side entrance as illustrated by the designs by Mr. S. B. Russell and Messrs. North & Robin, is that, apart from arrangement, it seems to avoid the necessity for dishonest construction. Neither does it tempt to false elevational treatment of the front. As the newsroom can be taken from end to end the single unit expression of this front, after which most of the competitors seem to hanker, can be naturally and reasonably obtained. In this matter of straightforward expression Mr. Russell's design is, we think, one of the best submitted. The elevations themselves considered without reference to what is behind them—which, however absurd, seems the fashion here—may not perhaps be generally considered so pleasing as those of the winner, but they are more truthful and expressive, and the design generally, whatever its defects, is, in our opinion, more on the lines that make serious architecture possible.

Other designs on the same general lines as the premiated ones are those by Mr. Albert L. Guy, Mr. Arnold S. Tayler—who in sacrificing convenience for the benefit of his sub-librarian obtains an awkward staircase—Messrs. F. J. Edle & Meyers—whose attractive plan shows a sense of the value of internal architectural forms, but whose treatment of the house-keeper's apartments can hardly be justified—and Messrs. Newman & Newman.

Messrs. Young & Horsley submit a completed alternative. Both designs have pleasing elevations, and both plans show the counter of the lending library parallel with the book



Second Premiated Design, by Messrs. Castle & Warren.



Second Premiated Design, by Messrs. Castle & Warren.

stacks, and dividing this room from the newsroom.

We do not consider that the general level of achievement shown by these designs is any argument in favour of limited competitions.

"SOUTH KENSINGTON."

THE EXHIBITIONS OF THE NATIONAL COMPETITION AND THE ROYAL COLLEGE OF ART.

The exhibition of work by students of the Royal College of Art and that of the prize-winning and the commended designs submitted in the National Competition may be taken and grouped together because they are both for the greater part the outcome of a systematic attempt to educate the nation in art and the crafts, which may be conveyed by the term "South Kensington." The definiteness of the connotation implicit in those words is sufficiently established; all that is official, all of education in matters connected with the arts, that is controlled from Whitehall is thereby conveyed. And these exhibitions, both open at present, the one of the Royal College, recruited for the most part from those who have graduated—who have obtained a diploma—from one of the many schools associated with South Kensington and subject more or less to its control, and the other, of the National Competition, are the product and vindication of the Board of Education machine.

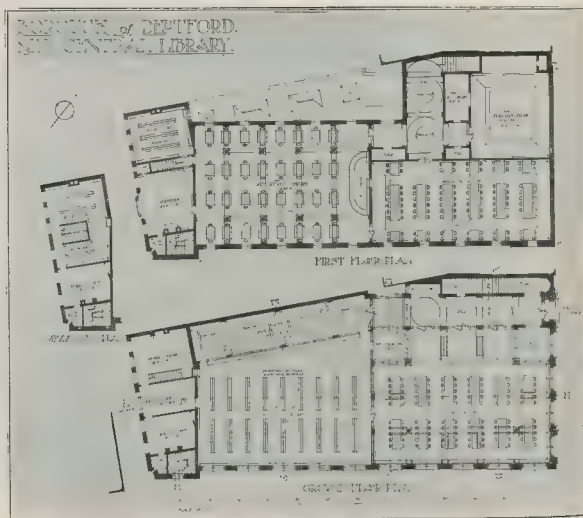
The term "machine" is by no means intended to convey disapproval or contempt. But it should be borne in mind that it is a "machine," that it is an organisation of a sort commonly assumed to be repugnant to the British mind when it turns its pellucid gaze upon affairs of art; an organisation, in fact, in a realm over which a whisper of any such thing must sweep like a blighting wind. It is, moreover, an uncommonly big machine. In every town in the kingdom of any considerable size it has its net spread wide. More often than not, the only art and technical school in the place is subject, if not in official fact, then as helplessly in a slavery of method and aim. For the power which has in its gift the mead of official reward with "National" as compelling prefix, must impose, whether it thinks it does so or even wants to or not, some measure of the methods necessary to procure the results of which it approves. The inevitable tendency of the permanent, yet subordinate teacher is to work for immediate results. And so all but the very wayward or the seemingly obtuse, the very poor or those who are rather rich, get caught.

It is not our business here and now to expound, defend, or condemn "South Kensington" as an influence in the artistic development of national talent. As a system

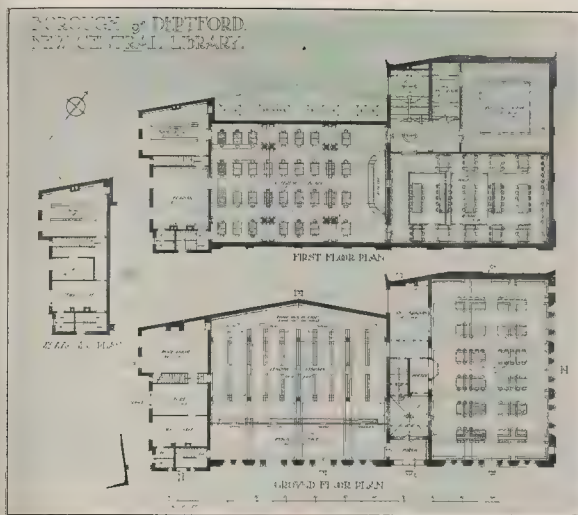
of teaching it has its apologists, one must confess; by many of those whose opinions really count it stands condemned. But let any who feel inclined to associate themselves with its antagonists reflect that the movement (it is perhaps too firmly rooted in matter-of-fact acceptance now to be called a movement) has afforded innumerable opportunities for learning which might otherwise only with difficulty have been obtained; on the other hand, it may be argued that facility of access may be too pronounced. And so on indefinitely, with innumerable arguments—a case, for one side or the other, being made in the usual way by uttering half of them. We leave the methods to those immediately interested—our concern is with the results.

At the exhibition of works rewarded in the National Competition it is interesting to observe once more that the brighter sections are those by their nature least influenced in their course by the schools. The examples of illustration, for instance, in black and white or in colour, show not only a more complete measure of achievement (natural enough in that, granted talent, no long labour is

required), but also an alertness, individuality, and life, which, combined with the knowledge that, except in matters of technique, the school has not, necessarily had any hand in it, leads one to the view that this possibility is perhaps the reason of such marked superiority. On the other hand, such productions as (to make use of a sort of generic title) "designs based on a plan," in which "South Kensington," with its pseudo-scientific botanical study has fuller play and more direct influence, are for the most part desperately dull and uninspired. "Nature study" is of very little use to those on whom the affluat does not descend; tradition is, however, with its appeal to all the associations of culture. It is therefore pleasing to observe that traditional forms are gaining fast, and may soon entirely oust the strugglers *ab initio* from the field. In lace-work, which has suffered much, this tendency is marked and especially pleasing. Indeed, in all the smaller matters of design, those directions in which "South Kensington" formerly held strongest sway, "South Kensington" is being slowly thrust out. Designs for book-covers, embroidery, plasterwork, fabric, and all the little things to which this style may be applied, show more and more that tradition is coming back to its own; and the many examples entitled "Study of the Historic Styles of Ornament" indicate that this return is being encouraged. But there is much more to be done in what would a short time ago have been considered this retrogressive direction before any real advance can be made. Technical ability, often surprisingly precocious (notably in two gold medal jewellery exhibits—we hope age is not taken into account by the judges) is sometimes buried in design which does not deserve a second glance. In no case, naturally, does the design outstrip its execution—if one may in one's mind predicate the possibility of a separation of the two. They are most happily worthy of each other perhaps in the encaustic work submitted by the schools in the Potteries district. Turning, however, to those realms called pure art as opposed to applied (or rather to the technical preparation for it, for hardly any of the exhibits are anything but essays in technique), we find ourselves (for just that reason) unwilling, and perhaps unable, to deliver an opinion (necessarily on technical points) of any value. But what one may say concerning the painting and the sculpture in the course of a consideration of "South Kensington" is that, though at certain schools these arts may be very well taught, at none of them, as far as a spectator can tell, is there an atmosphere permitting the desirable *flair*; that "South Kensington" as an environment tends to suppress



Third Premiated Design, by Mr. Henry T. Hare.



Deptford Library: Alternative Design, by Mr. Henry T. Hare.

ecture—in those directions of decorative art with which "South Kensington" concerns itself most directly, that is to say—the impression given is merely that of an extension of the other exhibition, of considerable technical ability, with here and there individual merit, but no indication of any definite tendency or exceptional power of personal direction. The coloured glass seems sound, except for an inclination to studied awkwardness of leading (of a fine fitness at times, as in the case of the little three-piece light of the head by Botticelli). There is some pleasing pottery, woodcarving, metalwork, and embroidery of the customary type—taking our impression as a whole. Lettering is good, as it usually is in these days, but manuscript and illumination should be embarked upon seriously, if at all. We find nature study tiresome.

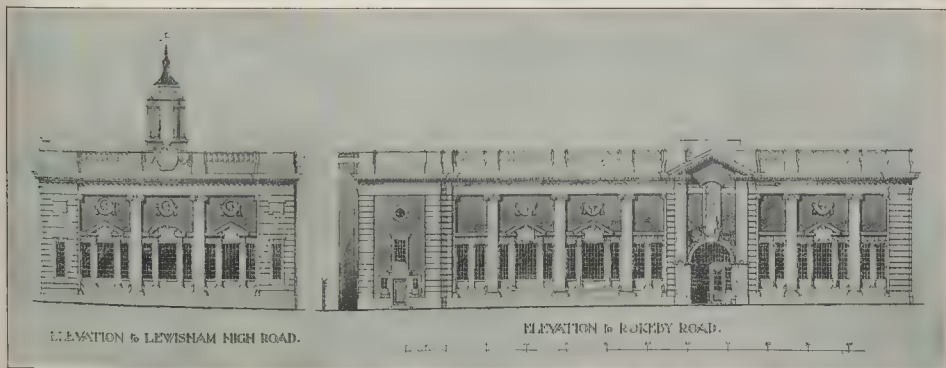
Whether the improvement in the amount of knowledge of architectural detail in the section devoted to "room decoration" is due in any measure to our animadversion last



Deptford Library: Third Design, by Mr. Henry T. Hare.

year or not we are unable to say. It would please us to think so, and afford hope and encouragement to the expression of our view that the improvement can and will continue. There are still exhibits at which the trained architect would laugh, and the colour schemes are often unpleasantly emphatic. It is not enough, too, that thorough knowledge of the grammar of architectural design should be applied to the walls and static features of an apartment. A room should be conceived as a whole replete and harmonious in every particular, even perhaps, in the German fashion, to the size, shape, and tone of the pictures upon the walls.

In the architectural section for the first time in all our peregrination do we find evidence of definite teaching and assured direction. The exhibition is restrained in quantity because from what one knows of the way in



Deptford Library: Alternative Design, by Mr. Henry T. Hare.

which the R.C.A. student works one is aware that only a very small proportion of the work done is shown, and in kind because of the strictness with which the more severe methods of Italian Renaissance design are adhered to. The exceptional facilities afforded by the adjacent Museum are fully used, especially as regards the coloured models of Italian interiors with which it is so well stocked. And the result under Professor Pite is a strongly Italianate style of design, carefully and often remarkably drawn, and freshened with touches of the individual neo-Grecque which the Professor has at times used in his own practice.

Little space remains to us in which to deal with the painting. As is to be expected, the larger essays in decorative painting in point of vigour of colour and design fall as far short of the students' own sketches as of the high measure in these matters attained in Professor Moira's own work. Indeed, we would have expected to see his influence more directly apparent. It is in the monthly sketches of given subjects, interesting and very enjoyable as pictures *sans arrière pensée*, with their very highly-developed feeling for composition, that the effect of the personality of the Professor is felt.

THE ROYAL SANITARY INSTITUTE CONGRESS, BELFAST. ENGINEERING AND ARCHITECTURE.

The following is the conclusion of our report of the congress of the Royal Sanitary Institute, which has just been held at Belfast. The report was commenced in our issue for July 28, p. 98, and continued last week on p. 127:—

Artificial Lighting of Hospitals.

Mr. John Darch in discussing this question said that in visiting the principal London and other hospitals he had been keenly struck with the universal want of discrimination in lighting. There was a kind of trade orthodoxy which cherished certain forms and fittings and decreed their use, often in defiance of common sense. There was to be avoided, on the one hand, the evils of glare, and, on the other, the risk of eye strain consequent on insufficient light, or upon the effort to see in the face of misguided lights. The value of illumination depended not on the amount of light that was shed throughout a room, but on that which was reflected for visible objects. An essential part, therefore, of any scheme of illumination was the colouring of walls and ceilings, the strength of which must be properly balanced with the amount of light available. Dark colours ate up the light, and were therefore wasteful. White ceilings, cornices, and friezes not glossy, with pale-tinted walls and slightly darker dadoes, would best serve the hospital and its inmates. The author, without entering into a comparison of the merits of various lighting media, proceeded to show by means of diagrams how lights should be placed so as to successfully illuminate every department of a hospital.

Mr. Leon Gaster congratulated the Institute on the fact that lighting was being taken up from the sanitarian's point of view. He also pointed out that the French Government had recently appointed a committee, consisting of doctors, architects, and engineers, to consider and report to the Public Health Department on the conditions of different illuminants and their hygienic aspects, etc. He expressed the hope that the Home Office of this country would take the matter up.

Major Blackman referred to the bad lighting of barracks and regimental institutes, and thought it was essentially a matter on which the Government ought to take some action.

Mr. E. T. Hall criticised some of the diagrams of the author, and said his preference was for a light 2 ft. from the wall, but suspended from the ceiling.

Planning of School Classrooms.

Mr. W. R. Webb (Licentiate R.I.B.A.) said the chief object to be borne in mind in the planning of the classroom was to secure the concentration of the scholar on his work, and to afford the teacher complete control of the classroom, isolated and independent,

without communication of any kind with the adjoining classrooms. In this respect the general practice in Continental schools was a striking improvement on that of many English examples, in which glazed doors and glazed movable partitions between the

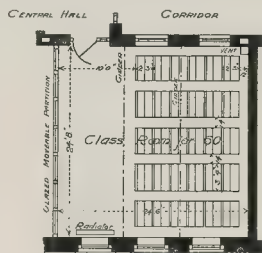


FIG 1. ENGLAND

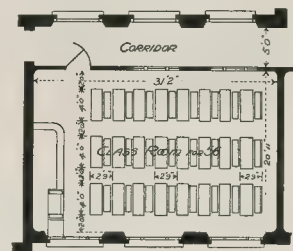


FIG 2. FRANCE

classrooms were much too freely introduced. Figures Nos. 1, 2, 3, and 4 were common types of school classrooms in England, France, Germany, and Switzerland, and show at a glance the different methods of arrangement of desks and the shape of classrooms.

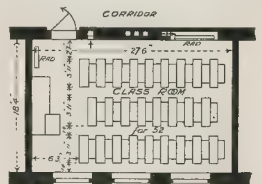


FIG 3. GERMANY

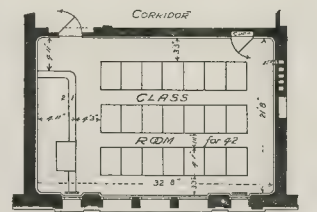


FIG 4. SWITZERLAND

The length of the classroom should be determined by the acuity of vision of the scholars and the vocal energy of the teacher, and the width should be limited by the application of the rules governing the lighting. The application of these two rules had

resulted in the adoption in nearly all countries of a rectangular classroom, having length and width in the proportion of 3 to 2 or 5 to 3. The height of a classroom, which should not exceed 13 ft., was determined by the question of acoustics and cost. Many Continental authorities considered that the width of a classroom should not exceed one and a half times its height, which view was confirmed by Dr. Kerr, of the London County Council, who had recently stated that classrooms should not exceed 20 ft. in width. If the suggestions contained in the report of the recent Departmental Committee of the Board of Education on the cost of school buildings were adopted, buildings of the permanent type might be designed by the architect in the various methods of reinforced brickwork or concrete, so successfully employed in other structures; and for those division walls between classrooms, clinker breeze, hollow and solid concrete partition blocks offer considerable advantage in regard to facility of construction and economy in cost. The use of glazed brick dados, which are in any case open to many objections, would not be practicable with walls of this description; glazed tiles, which, however, were open to similar objections, could be employed if desired, but in his opinion the use of a cement dado was much to be preferred. The portions of the walls above the cement dado and the ceilings required to be finished with a plaster of a much softer description than that generally used, both for acoustic reasons and to prevent undue condensation. All the surfaces should be brought to as smooth a face as possible, with the internal angles between walls and ceilings rounded in the plaster. The colouring of the walls should be most carefully selected, as the value of reflected light from suitably selected tints could not be over-estimated. The most suitable tints for this purpose were those of the sage-green or eau-de-nil, containing a proportion of about two-thirds of body white. But the dados should, of course, be finished with a darker tint with a plain line band as border. Dealing with the various materials for flooring, the author advocated linoleum, the cost of laying which, he said, compared favourably with batten, parquet, or wood block floors. The economy with which cleaning and repairs could be effected were points of considerable importance. Many authorities in this and other countries agreed that the best aspect for classroom purposes from all points of view was that of the south-east. Unilateral left-hand lighting for classrooms was universally recommended and adopted, and the generally accepted rule of the window-glass area in relation to the floor area was in the proportion of 1 to 5. Recent investigations were convincing and conclusive that some means of thorough or cross ventilation by ample natural prelation obtained by external windows was absolutely essential for perfectly ventilated classrooms. The central system of supplying heat was one which should be recommended for all school purposes. Properly screened open fireplaces, in addition to the other means of heating, should, however, always be provided for the babies' rooms.

Considerable discussion ensued on the paper, which largely turned on the advantages of unilateral and bilateral lighting.

Irish National Schools.

In a paper dealing with the "Cleaning, Heating, and Ventilation of Irish National Schools," Mr. W. R. Maguire, J.P., pointed out that a large proportion of Irish national school buildings were dangerously defective, in bad sanitary condition, and devoid of any attractive comfort for either children or teachers, and he urged the necessity for more Government aid to deal with the defects. He said it would cost more to bring the majority of substantial school buildings erected thirty years ago, structurally sound, up to the standard of to-day than to build suitable modern schools. But where these fine buildings stand they must be utilised; the finer they are, architecturally, the more they cost to alter and adapt. The school architect, then, had to consider the problem of future demands for alteration and extension on one hand, and the possible abandonment of his structure at a future date, and so plan his building on simple lines. Architects are to a large extent called on to act as prophets in designing schools. School

buildings need not be palatial, but rather built for the comfort and benefit of children and teachers, well planned, sound, weather-proof, warmed, ventilated, lighted, easily cleaned and maintained for a reasonable period, sacrificing quite legitimately an eternal durability to the stern demands which limit first cost in this world.

Roads.

Discussing the evils of the dust nuisance and the remedies, Mr. J. S. Brodie (Borough Engineer, Blackpool) pointed out that where financial conditions were favourable the modern road-maker need have no difficulty in laying down a practically dustless road; but with existing water-bound road surfaces the difficulties to be overcome in the prevention of dust were vastly greater. He had found that the treatment of water-bound road surfaces with properly prepared tar compounds at a cost of from 1d. to 3d. per square yard was the most satisfactory under the local conditions with which he had to work.

Mr. J. Parker (City Surveyor, Hereford) submitted a paper on "Tar Macadam," and discussed the various forms of tar construction at present in vogue. The cost of tarmac in Hereford during the past eight years had varied from 1s. 3d. to 2s. per square yard; steam-rolled ordinary macadam being 1s. 3d. to 1s. 7d. Tar grouting averaged 1s. 7d. per square yard. Tar painting had been done as low as one-fifth of a penny; but the average cost, including the rolling in of Cleve Hill 4-in. and 4-in. clean screenings, was 14d. per yard.

Mr. H. F. Gullman described the Belfast tar macadam plant, the general features of which were as follows:—The stone supplied from the quarries is delivered at a high level to the drying towers. In its passage, by gravity, through the towers, the stone is thoroughly dried and heated, and passes out at the lower end into a revolving mixer. Boiling tar, of sufficient quantity to thoroughly coat the stone, is also fed into the mixer, and the whole discharged at the outlet, thoroughly mixed, in the form of tar macadam. With a staff of one foreman and five men the output of tar macadam is upwards of 150 tons a week.

Several speakers followed in the discussion, and gave experience of the different systems of tar spraying or painting they had tried, with more or less success, for dealing with the dust nuisance.

Smoke Abatement.

Several papers were read in the different sections dealing with the subject of the smoke nuisance and its abatement, when the use of smokeless fuel, gas, and electricity was strongly urged. Mr. J. Macaulay (Chief Smoke Abatement Inspector, Liverpool), who read a paper before the Sanitary Inspectors' section, advocated the use of more fire-brick and less iron in the construction of domestic chimney places, and said that chimney flues would offer less resistance to the ascending gases if lined with smooth fireclay pipes, properly jointed, than they do now with the rough angular projections formed by the ends of bricks, which make the cleaning of the flues an impossibility.

Discharge of Sewage into Tidal Waters.

Mr. W. Harpur (City Engineer, Cardiff), in introducing the above subject, gave details of an outfall sewage scheme, discharging into the Bristol Channel, which he had carried out, and which had after fourteen months' working proved very successful. If observations as to the safe conditions for discharging sewage into tidal waters were carefully made it would be found that while in certain cases crude sewage might be discharged at all times of the tide, in other cases it would be found necessary to store the sewage in suitable reservoirs and discharge only at certain hours of each tide, while in extreme cases, as at Belfast, it might be found even necessary to pass the sewage through sedimentation tanks, and then to discharge it only at certain periods of the tide, and these conditions he was of opinion were the extreme that was in any case necessary to ensure perfect safety to the community, where suitable points of discharge under proper conditions were available.

Professor E. A. Lister, as the result of investigations into the chemical principles involved in the discharge of sewage into

tidal waters, practically endorsed the conclusions arrived at by Mr. Harpur.

Dr. Fowler (Manchester) warned engineers against the employment of disinfectants, such as chloride of lime, etc., as in attempting one thing they might get into a worse state of things.

Mr. Cotterill (Bristol) emphasised the importance of dealing with each case on its merits, and said that Mr. Harpur's scheme at Cardiff furnished a case where no injury could arise, and another instance was that of Torquay.

Mr. Barker described the methods adopted at Portsmouth, where the crude sewage was discharged into a large volume of water which passed out of the harbour at a rapid rate.

Mr. A. J. Martin agreed that drastic safeguards against disease germs might do far more harm than good if they upset the balance of nature.

Incompetent Engineers and Architects.

Mr. P. C. Cowan (Chief Engineering Inspector of the Local Government Board for Ireland), who presided over the sitting of the Conference of Municipal Representatives, dealt with the law in force in Ireland with regard to engineers and surveyors, and said in some respects it was more favourable than the law in England. The absence of provisions in the statutes to prevent incompetent persons from acting as engineers and architects was much to be regretted, and doubtless accounted for the low estimate often put on their services. It was a matter which could be more easily dealt with than the wider question of registration of engineers and architects, and the thin end of the wedge had been inserted by the provisions of the Labourers Act of 1906, which laid down rules as to the persons who should be deemed eligible for employment as architect, engineer, or surveyor. He ventured to think that the time was now opportune for legislation which would protect engineers and architects from unfair competition, and the public from the very serious loss which now arose from their displacement by practitioners who were not qualified. There was now a sufficient supply of properly-trained men, and no good reason why the safeguards afforded to the practice of law and medicine should not be extended to those whose function was "the art of directing the great sources of power in Nature for the use and convenience of man."

If the Institutions of Civil Engineers and the corresponding Architectural Associations and the Universities were to combine in an effort to secure proper recognition of the professions of engineering and architecture, success would ere long be obtained.

National Sanatoria.

Mr. E. T. Hall, F.R.I.B.A., gave the paper he had prepared for the Engineering and Architectural Section as a popular lecture on the closing evening of the Conference. He said that "National Sanatoria" was now proposed to be recognised as a national obligation, whereas hitherto it had been left to private charity. The author gave some details of the number of consumptives in the country, and remarked that the sanatorium in a nutshell was the embodiment of the root idea of open-air treatment under medical supervision. There was much to be considered in the selection of a site for a sanatorium. First of all, in considering competing sites they must ascertain the average number of hours of sunlight to which they were subject, and give preference to those with the best record; next, learn the relative humidity of the air from local causes, and note that site which had least. A great altitude was of no importance. What was important was that the site should be open to the winds of heaven, that was to say that there should be free currents of air all round and through the buildings, that there should be abundant access for sunlight, and it should be cheerful. To attain these ends the site should be elevated above the land to the south, and on the colder sides it should be protected. But here a note of warning was necessary. By many a dense belt of woodland quite close up to the building on the northern and eastern sides had been encouraged. That was a mistake. Trees should be cut back to a considerable distance, and avenues should be made through them to allow great rivers of air to sweep through and around the

buildings. Prospect was of great importance. Shut in by woods or other limitation of panorama, a feeling of depression was engendered which was greatly to the detriment of patients. Extensive views, on the other hand, broadened the outlook not only of the physical eye, but of the mental vision. Subsoil was of importance. Clay as a subsoil was liable to get waterlogged, with resultant mists from evaporation. Gravel pockets in a general clay formation were not good, because the subsoil water became stagnant and gave off noxious gases. Loose sand on the surface was worse of all, the gritty brittle particles blown by the winds were great irritants to the respiratory organs. A rocky soil was best, so long as it had a verdant supersoil. The greensand formations were good, and pine-trees flourish on it with their resinous perfume. The buildings should be set well away from all dusty roads. As to the type of building itself, much had been said and written as to the relative advantages and single and multi bed wards, of isolated huts and congregated rooms. Single huts were reasonable were few patients had to be treated. The one-room habitation was primitive, whether it be of wattle, of canvas, or of boards; but if a large number of people were to be housed, fed, and supervised, and were to have the amenities of prospect and open surroundings, their huts would cumber the ground, and their abodes must be brought together so as to leave the necessary open spaces. This eventuated in a large building, or might be series of buildings, where apartments for patients were convenient of access from the administration, where baths for washing and for hydrotherapeutic treatment, and sanitary accessories might be disposed for general convenience, and where drainage might be concentrated and minimised.

If this be admitted as the necessarily practical development of the aggregation of sick persons, as in its essence it accounted for the formation of towns, then he thought it would be fair to say that public sanatoria which had to deal with the masses should be started on the lines in which, as they became larger, they must develop. Practically all the sanatoria dealing with any considerable number of patients abroad or at home were on the concentrated principle.

The author proceeded to discuss the question of planning, and said that he felt sure from his own investigations and from conversations with medical superintendents that the large majority of rooms should be single bed, but that a few of two, three, and four, and perhaps five, might be of advantage. Large wards were to be deprecated. It was manifest that cost was an element of great importance when large numbers had to be dealt with; that the prevention of fire was another. The cost per bed varies naturally in relation to accessibility of building material and cost of labour. Sanatoria in England, built of brick and stone as distinct from temporary wooden structures, ranged from 350l. to 1,000l., and it was said in one case to be nearer 2,000l. per bed. In cases where local material was not available, when the distance from a railway was considerable, and where the institution is a large centre, self-contained, perfectly equipped, and built on up-to-date hospital lines, providing its own water, electricity for power and lighting, its heating and hot-water installations, its laundry full of machinery, engine and boiler house, kitchen, etc., fitted with labour-saving plant, ovens, etc., stores, recreation-room, workshops, research laboratories, mortuary and post-mortem rooms, an elaborate system of drainage, residences for medical and nursing staff, servants, gardeners, etc., he did not think 500l. per bed was excessive. These central institutions were necessary, and filled a definite place. But the sanatoria under the Insurance Bill could not be of the same elaboration. They ought not to be of boards (that material was far too dangerous in a wooded district), but might be, *pace* all by-laws, of a permanent character, one story in height, with walls and roof 3 in. or 4 in. in thickness, without elaborate foundations and all the cost these entailed. As a result of a lot of study, he showed on the walls designs of sanatoria of various sizes which he believed could be erected on a suitable and fairly accessible site for 100l. per bed. He had standardised every part of the construction as well as the eight-bed units of wards, the units of administration and of residence. The two latter were made

proportionate to the number of beds. If a sanatorium of sixteen beds was erected it could be increased at any time to thirty-two or forty-eight or sixty-four or more with a corresponding increase in other departments, without pulling down the old. A laundry was provided at the north. The enclosing material, including floors, was of non-combustible slabs of standard size, impervious to vermin and readily fitted together. A pure water supply was, of course, a *sine quâ non*, and if no public gas supply was available a small plant could be installed for heating baths, for cooking, and for lighting. Fire-places of special design to avoid dirt were adopted, to avoid the great expense of an engineering plant. Earth closets could be used if the site was in a rural situation. The drainage would then be of soiled water only, taken to cesspools, emptied by suction carts as at Nordrach, and distributed on the agricultural land. If a small establishment of sixteen beds was in contemplation, a qualified matron and nurses would be supervised by a non-resident physician. For thirty-two beds, quarters were provided for a resident medical superintendent. For forty-eight provision was made for two resident doctors, with a matron, a housekeeper, and, of course, a larger staff of nurses and servants.

It was suggested that, as at Frimley, patients should not only be trained to make their own beds, but to do all kinds of other work, such as digging and planting, carpentering, painting, etc., so that the maintenance would be reduced to a minimum. In all essentials it would be seen that the design comprised everything that was found in the larger and more costly sanatoria. All rooms faced south, south-south-east, and south-south-west. Each unit had six single-bed and one two-bed ward, with a sanitary annex and linen store. Each unit was detached from its neighbour, allowing for classification and avoiding the spread of fire in the possible event of carelessness. All rooms were accessible at the rear by a covered verandah, and had a terrace in front covered at discretion, either by a glass roof, or, as at Frimley, by canvas shop blinds. A common dining-room was in the central block, close to the kitchen and stores. The whole scheme was one for open-air treatment in the fullest sense.

The Most Rev. His Grace the Lord Archbishop of York has consented to accept the office of President of the Twenty-seventh Congress of the Royal Sanitary Institute, to be held in York in July, 1912.

THE ROYAL ARCHÆOLOGICAL INSTITUTE IN SOUTH WALES.*

On Friday, July 28, an excursion was made by rail and motor-cars to Coity Castle, which was described by Mr. Hope. It consists of a pear-shaped inner wall, originally encircled by its own ditch, and containing all the principal buildings, as well as a curious semi-detached round garderobe tower projecting from its southwards from behind the hall and lodgings. There is a gatehouse on the north-east, and the remains of another on the west that communicated with the outer ward. This seems to be an addition to the first plan, and is roughly oblong in plan, with a gatehouse in its western end. The whole of the castle buildings are mainly of the XIIIth century; but everything is now in such a hopeless state of ruin that it is difficult to find architectural details from which dates may be deduced. Some interesting details concerning the successive owners of the castle were contributed by Mr. Hynd Nichol. Coity Church, which adjoins the castle, was next visited, and described by Mr. Brakspear. It is a small aisleless, cruciform building with a tower over the vaulted crossing, all of early XIVth century work. In the north transept are two charming little XIVth century effigies of Tueberville children—a boy and a girl. In the chancel stands a five-gabled oak cupboard of late XVth century date, ornamented with emblems of the Passion. The journey was next continued to the church at Coychurch, which resembles that of Coity in plan. It has a fine lofty arcade to the nave, with good open roof, with panelling in the first bay over the place of the roof-loft. In the north transept is an interesting effigy in cassock and surplice of Thomas Evans, clerk, "parson of this church,"

1591, and a late XIVth century effigy of a layman. After luncheon at Bridgend a visit was paid to Ewenny Priory Church, which was described by Col. Tueberville. The priory was founded early in the XIIIth century by the lords of Ogmere, one of whom, Maurice of London, gave it as a cell to Gloucester Abbey in 1141. The church of that time, which alone survives, consisted of a vaulted presbytery, north and south transepts, each with two eastern chapels, a low middle tower, and a nave with north aisle only. The north transept and all the chapels are now ruined. The church was both parochial and monastic, and there still stands under the western arch of the crossing the screen wall against which the nave altar was placed, with procession doors at either end. Mr. Hope pointed out that the XIVth century wooden screen now under the eastern arch could not possibly be in its original place, which was across the nave at the second bay, where the grooves for fixing it still exist in the pier. Mr. Hope also showed, from the position of the various doorways, what was the old arrangement of the eastern arm prior to the suppression of the priory. The church contains an extensive series of incised slabs and early monuments. The priory precinct was fortified by a wall and towers in the XIVth century, and is still entered by two of the original gatehouses with alterations of the later date. The party subsequently returned to Cardiff. At the evening meeting Mr. W. H. St. John Hope gave an account, illustrated by lantern slides, of the extensive excavations carried out in 1909 and 1910 by the Society of Antiquaries at Old Sarum. These had brought to light the remains of the castle that once occupied the site, including a curious postern-gate and tower and a keep of remarkable plan, with an unusual series of garderobe shafts. The works are still in progress, and will probably be spread over a number of years.

On Saturday, the 29th, the party first went by train to Pyle, and thence by motor-cars to Margam Abbey. This was described by Mr. Brakspear as having been founded for Cistercian monks by Robert, Earl of Gloucester, about 1150. Part of the nave of the first church, with simple round-headed openings for its arcades, remains, and is still used for service. The transepts and presbytery were rebuilt on the same plan as the Tintern in the XIIIth century, but are much ruined. Of the romantic buildings nothing is left but the foundations of the eastern range, with the bridge to the rood-chester, and the shell of the chapter-house. This stands clear of the range, through which it is approached by a vaulted vestibule, and was round within and polygonal without. The vaulting, which sprang from a central pillar, fell in 1774, but the building is otherwise fairly perfect.

The contrast between the sylvan surroundings and beautiful gardens of St. Mary Talbot at Margam and the blackened and sordid site of Neath Abbey, which was next visited, is remarkable. Otherwise the remains of Neath Abbey are even more important. According to Mr. Brakspear, who again acted as guide, the abbey was founded about 1130 by Richard de Granville for monks of the Order of Savigny, but the buildings date from the XIIIth century. To this period belong the considerable remains of a church of the Tintern type, with all its parts vaulted; also the western range of buildings and much of the doister range, with its vaulted undercroft and bridge to the rood-chester, like Margam. The buildings owe their preservation to their having been converted into a manor-house at the suppression by Sir Peter Holby, and considerable remains of this exist. The sites of the church and cloister would well repay excavation if properly carried out. Later in the day the journey was resumed to Tenby, in readiness for the second part of the meeting in the district about that town.

The proceedings at Tenby began at 10 a.m. on Monday, July 31, at the Town Hall, where the Mayor (Captain Hughes-Morgan), in his official robe and chain, and supported by the aldermen and councillors, with the attendant sergeants-at-arms, formally welcomed the Institute on behalf of himself and the Corporation. The party was then conducted round the town by Mr. Edward Laws, who described the remains of the Norman castle and of the walls, towers, and gates built about the town, probably by William of Valence, Earl of Pembroke, about 1288. Much rebuilding of these was carried on during the XVth and XVIth centuries, but a good deal has since been destroyed, particularly on the two sides next the sea. At noon the party

again assembled at the Town Hall, to join, by special invitation of the Mayor, in the state procession for the annual opening of St. Margaret's Fair and the Pie-Powder Court in connection therewith. Headed by a brass band, and preceded by police constables, the procession of Mayor, Corporation, mace-bearers, and archaeologists, with divers townsfolk, wended its way through the principal streets to the scene of the Fair in St. John's Croft, with occasional halts while the crier proclaimed the Fair and Court open, in accordance with the charter of Queen Elizabeth.

After lunch a visit was made by sea to Caldey Island, where Mr. J. Coates Carter acted as guide. The little church used by the islanders was first inspected. It consists of a square nave and a chancel of smaller size, all of the simplest possible character, and Mr. Hope said he saw no reason why the pre-Norman origin claimed for it should be disputed, though little architectural evidence existed except part of the west doorway. Hard by are the modern buildings of the abbey of the English Benedictines, established then by charter of the Archbishop of Canterbury, and whose fame has brought the island into special notice. The old buildings of the small Benedictine priory that existed here until the suppression were described by the Rev. W. Done Bushell, to whose residence they are annexed, and are of special interest not only from their small size, but as having been the first home of the Benedictines on their re-establishment on Caldey Island. They comprise an aisleless church of the XIIIth century, with vaulted quire, and western tower and spire, with a small cloister on the north, with a western gatehouse, and much of the eastern range. In the church is the famous Caldey stone, with its Latin and Ogam inscriptions. The party subsequently re-embarked for Tenby, after an enjoyable afternoon. The evening was filled by a conversation given in honour of the Institute by the Mayor and Mayoress of Tenby, at which the valuable series of charters given to the town was exhibited, as well as the two silver maces and the records of the old manorial courts. A number of prints and objects of local antiquarian interest were also exhibited by Mr. Edward Laws and Miss Eli-Edwards.

[To be concluded in our next issue.]

GENERAL NEWS.

Professional Announcement.

The office of Mr. Edw. Dru Drury, District Surveyor, will in future be at Parliament Chambers, No. 14, Great Smith-street, Westminster, S.W. Telephone: 1587 Victoria.

Hampton Court Palace and Precautions Against Fire.

The Office of Works have taken steps to greatly improve the means and appliances for dealing with any outbreak of fire in the Palace, and have thoroughly overhauled the water supply. They have installed a special fire alarm, which affords direct communication with the fire-station at Kingston, and have made arrangements with the Kingston Fire Brigade for rendering their prompt assistance if required.

The London Museum.

A movement is afoot for providing a suitable and permanent building for the collections which are now housed temporarily in the State apartments of Kensington Palace. The London County Council have agreed to offer upon permanent loan to the Trustees all the valuable and multifarious objects and relics which they have preserved and which are at present stored in the Horniman Museum at Forest-hill, in the County Hall at Lambeth; and in the Exhibition at Shepherd's Bush.

Decorations of the Royal Exchange.

Mr. F. O. Salisbury is appointed to paint the panel which Alderman Sir Charles Wakefield will present to the Gresham Committee. The panel, having for its subject the rebuilding of the wall of London by King Alfred the Great after the departure of the Danes, will be fixed in the ambulatory.

The British Pavilion, Rome Fine Art Exhibition.

We learn that the British Government have ratified an agreement to purchase the Pavilion of the British Section, with a view to the establishment of a permanent British Palace

* Continued from page 151.

of Fine Arts in Rome. The building was erected after the plans and designs of Mr. E. L. Lutyens, F.R.I.B.A., the general scheme being modelled, with the necessary modifications, after the façade of St. Paul's Cathedral.

The National Portrait Gallery.

A Government Bill is passed for third reading in the House of Commons which provides for the transfer from the War Office and vesting in the Office of Works some land that appertained to the St. George's Barracks, in order that it may be utilised for extensions of the National Portrait and of the National Galleries. In the case of the former the Trustees, in their fifty-fourth annual report, which has just been issued, direct attention to their existing urgent requirements for further room, and to a considerable extent, inasmuch as the available wall space is so completely occupied that it is almost impossible to find proper place for new acquisitions. In addition to engravings, photographs, and similar supplementary reproductions there are 1,605 registered portraits. In the year 1910 a total of 175,251 persons visited the Gallery.

The Road Board and Advances in Aid.

With the sanction of the Treasury a third batch of advances from out of the Roads Improvement Fund has been made by the Road Board to highway authorities and county councils. The advances amount to an aggregate of 11,000*l.*, whereof 6,600*l.* is for England, so that the total sum advanced in January-June last is 275,350*l.*, of which 209,890*l.* goes towards the improvement of road crusts, and includes grants in aid for macadam and surface tarring.

CORRESPONDENCE.

The King Edward Memorial.

Sir, By a happy inspiration Professor Adshead appears to have solved the difficulty of finding the site for the memorial to our late King. Professor Adshead's plan for placing the memorial at Hyde Park-corner provides a most appropriate site for it, and at the same time transforms what is now an ugly open space into one of beauty. Decimus Burton's arch on Constitution Hill, now so awkwardly placed, will be brought into symmetry with its surroundings, and Hyde Park-corner at last become worthy of London.

It is only necessary to place side by side Professor Adshead's plan and a plan of the area as it now is to at once realise the vast improvement which would be effected by

carrying out the proposal. Probably there never was another proposal for so great a Metropolitan improvement realisable at so moderate a cost.

MARK H. JUDGE,
Honorary Secretary of the Further Strand Improvement Committee.

Gidea Park Competition.

Sir,—Apart from the question raised by Mr. Webb in his letter regarding the desirability of architects entering into competitions involving building, he seems to be under several misapprehensions in the matter of the above competition. Surely he does not imagine that the 140 or so architects bought the land and built houses solely on the chance of obtaining one of a few prizes. There was, indeed, the chance, but for the bulk of the competitors it was a small one, and without any doubt the competition was regarded as a building speculation.

Mr. Webb's letter gives the impression that the charge for opening houses and watering gardens is a compulsory one. This is not the case, and it is purely optional on the part of competitors whether they avail themselves of these arrangements.

Again, it is optional for competitors to employ the company to act as agents for the sale of their houses, and the handsome consideration referred to by Mr. Webb is the ordinary agent's commission.

Speaking as a competitor, I know from experience that the company have been most helpful to competitors, and have assisted them in every way. The competition was organised as a business transaction, and competitors have entered it as such with their eyes open.

CHARLES W. YATES.

Deptford Central Library Competition.

Sir, Can the award as regards the first premiated design in the above have been made regardless of the conditions attached to the competition? To me it appears undoubtedly so.

For instance, the newsroom in this plan is without supervision of any kind, while it was distinctly required by the conditions that the lending library and the attendant's lobby should both supervise this room. Again, the sub-librarian's room, as now planned on this scheme, is impossible for the use intended.

Many other conditions have been ignored in a manner which suggests to me that this award is unfair to those competitors who regarded the conditions as governing the competition, and submitted their designs in accordance therewith.

There was a distinct clause in the conditions by which any designs not conforming to

them would be excluded. Comment is needless.

I may mention that I am not a competitor, nor have I interest with any of those who have submitted designs.

NONFUSED.

Architects and Shop Design.

Sir,—In your issue of March 24 you have a paragraph referring to the shopkeepers' objections to Mr. Norman Shaw's fine design for the rebuilding of Regent-street.

That the design is not a good one from a shopkeeper's point of view is apparent to any architect who has had experience in designing this class of building, but the same design, with a very slight modification, can be continued and give the shopkeepers all they desire—plate glass.

I think in the matter of shop design we Straits architects have solved the difficulty, as the enclosed tracing will show. We agree with the shopkeeper that the maximum area of shop window is necessary, but we never carry our heavy superstructure on plate glass and glazing beads, as is usual in Europe. As you will see, we put up a masonry structure with piers that appear capable of and do carry the weight of the building above. This is built out to the building line, and we then put in a plate-glass front, which is simply a huge showcase, some 5 ft. to 8 ft. back, and this looks exactly what it is—a fitting that can be moved in any way, as it does not carry, nor does it appear to carry, any weight.

This system has other advantages from the shopkeeper's point of view, as it gives the public a covered space from which to view the display, and saves the cost of sun-blinds. Of course, against this has to be placed small loss of area on the ground floor. The enclosed plan is not a lone example, but one that is always adopted here.

Singapore.

ARCHITECT.

Temple of Artemis.

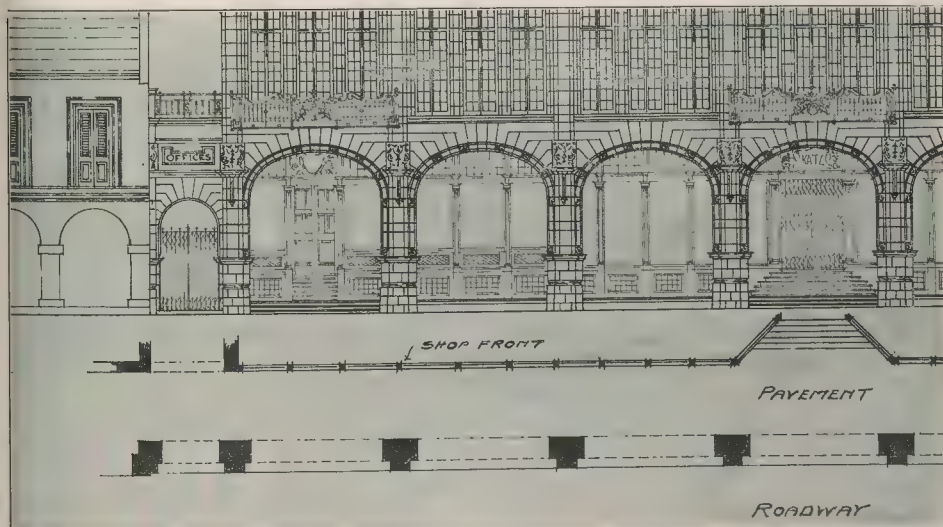
Sir,—I notice two slight mistakes in the above article. The first should read 60 Greek ft. = 60 ft. 9½ in. English, and the second should be large dentils or square consoles.

A. E. HENDERSON.

INTERCOMMUNICATION COLUMN.

Rainwater "Tipper."

We hear that the "Roberts' rainwater separator is supplied by Messrs. Frederick Braby & Co., Ltd., Ashton Gate Works, Bristol.



"Architects and Shop Design."

EDITORIAL SUMMARY.

The leading article is entitled "Evidence in Private Bills" and has reference to the method of obtaining architectural evidence before Parliament.

Our second article, "The Architect as Builder," deals with the Gidea Park Competition (p. 154).

Notes (p. 154) include: "The Citadel of Aleppo"; "The Architect's Judicial Position"; "The Greater London Railway"; "Hyde Park Corner for King Edward VII."; and "The Traffic Question."

In this issue we commence a series of articles on "The Story of the Bridge," with illustrations (p. 155). One page of our plates is given in connexion with the article.

An illustrated article on the Deptford Library Competition appears on p. 156.

An article entitled "South Kensington" will be found on p. 158. It includes notices of the National Competition and the Royal College of Art Students' work.

Our report of the Belfast Congress of the Royal Sanitary Institute is concluded in this issue (p. 160).

Our report of the proceedings of the Royal Archaeological Institute in South Wales is continued this week (p. 162).

Correspondence (p. 163) includes: "Gidea Park Competition"; "Temple of Artemis"; "Memorial to King Edward"; "The Deptford Library Competition"; "Architects and Shop Design."

The Monthly Review of Construction (illustrated) contains: "Building in Canada"; "Notes on Some Definitions Used in Structural Mechanics"; "The Tower of Pisa"; "Reinforced Concrete Girders"; and Note (p. 165).

The Building Trade (p. 169) includes: "Australian Building and Labour Notes"; "Is Pointing in Brickwork Doomed?"; "Some Legal Questions about Extras"; "Building and Labour in Melbourne"; "Projected New Buildings in the Provinces"; etc.

Law Reports (p. 172) include: "Action by Contractor against Building Owner."

COMPETITION NEWS.

Deptford Central Library.

In connexion with this competition the Borough Council, at its meeting on the 1st inst., opened the award of the assessor, and it was found that he had placed Design No. 8 first, Design No. 7 second, Design No. 6 third. The envelopes containing the names and addresses of the competitors having then been opened it was found that the authors of the above-mentioned three designs were as follows:—

- No. 8 (first), Sir A. Brumwell Thomas, 37, Old Queen-street, Queen Anne's Gate, S.W.
- No. 7 (second) Castle & Warren, Amberley House, Norfolk-street, W.C.
- No. 6 (third) Henry T. Hare, 13, Hart-street, Bloomsbury-square, W.C.

Aixminster Cottage Hospital.

In the recent competition for a design for the new Aixminster Cottage Hospital, the scheme prepared by Mr. Leslie T. Moore, A.R.I.B.A., of 3, Raymond-buildings, Gray's Inn, W.C., has been placed first by the assessor, Mr. G. H. Oatley, F.R.I.B.A., of Bristol. The contract of £1,725, is being carried out by Mr. R. G. Spiller, of Chard, Somerset.

CONTEMPORARY ARCHITECTS AND THEIR WORK.

In our account of the life and work of Professor Blomfield, A.R.A., which appeared in the *Builder* of July 23, there are two errors:—(1) Professor Blomfield got a leaving exhibition at Haileybury, and a scholarship at Exeter College in 1875, not a "scholarship exhibition," as stated. (2) He went up to Oxford in January, 1876, and took a first in Greats in December, 1879, not 1870, as stated.

ILLUSTRATIONS.

On Loggia.

HERE are two supreme divisions of architecture, and as they are supreme so are they primitive, as they are eternal so have they their counterparts in the earliest life of the race. The first of these is the building of tombs, because men build tombs for their dead before they build houses for themselves, and the second is termed secular building to distinguish it from the first. All architecture is of these two kinds, of which the calm and the mound for the one and the plaited bower of branches for the other, are the basic nuclei.

But before man began to build at all and for long after that time, there remained, as the customary setting to all his deeds, the architecture of nature—"sylvan fancies" and "craggy fortresses," with which we may assume Eden was replete. It should always be kept in mind that structure beyond man's stature and not made by him for his use, was the first emplacement given by Jehovah; architecture as a setting to lives of natural leisure was the primitive intention of the gods. The conception of its only purpose was theirs, with the name we credit them in retrospect for it is the postulate condition of architecture that it shall have been made by man.

Now architecture lies in just that part of building those proportions, this form, that colour which is superfluous and superior to the mere necessities of the case, empirically considered. Your common fellow is right, from his point of view, and a sound critic in his estimate of architecture as trimmings and adornment; but there are not lacking even to-day, those who think the mere fact of building of little moment and an edifice of no account at all, unless its functions, by the agency of art, fashion its proportions and parts into terms of fitness, if not into forms of beauty.

It is in those kinds of building then, wherein the form is most nearly conditioned only by the significance it has to express and the beauty it must embody, that the purest satisfaction of Urania will be found and Clio will discover, since at this later year of grace she is come into her own—safest refuge, truest zeal, and steadfast satisfaction. The primitive division of building into two kinds still persists on the higher plane of art. And precisely in the proportion that its forms are supreme do examples enfold the embryo of the type. From the first cairn to the Pyramids, from them to Halicarnassos, from that to the Albert Memorial, or one more recent still, is but a flickering open of the eyelids of the mind.

Of all that pertains the gods and to the state of death their realm, the cairn is still in fact the purest art. And as for the sylvan

bower, in that which is nearest still to its early use, in these sad days the Loggie are dead. Commerce and Calvinism—two corbies—have plucked their e'en. Tangled terrace makes their ditch, arch and shadow are their breast-



A Loggia.

plate, arabesque their damascene; sonnets are their vanished valour. Not the Loggia di Lanzi—that's the agora of the Hellene or the atrium of the Roman, not a loggia at all. As well "the Street" in New York City or Threadneedle-street in ours. For these places have their uses, contrary to the precepts of the gods. No, the loggia is private, intimate and undisturbed—its shades and vaulting coloured with the fragrance of the lute. Careless are those who are in it and forgetful of all but themselves. For this is not Olympus, which is more a belvedere. It is like the earliest garden, but nothing like so tiresome. Apex of the centuries—its floor is strewn with only the peel of apples from the tree.

"The Story of the Bridge."

THESE illustrations are given in connexion with the first of a series of articles on the subject, which will be found on p. 155.

BOOKS RECEIVED.

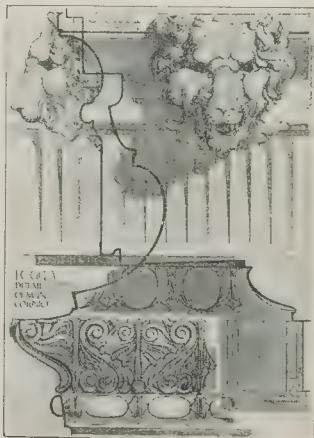
Ceilings and Their Decorations. By Guy Cadogan Rothery. (London: T. Werner Laurie. 6s. net.)

THE HOUSING OF THE WORKING CLASSES ACTS, 1890-1909, and TOWN PLANNING. By Charles E. Allan, M.A., LL.B. London: Butterworth & Co. and Shaw & Sons.)

SEWAGE SCHEME FOR HARTLEY WINTNEY (ANTS). Mr. T. J. Moss-Flower, C.E., F.R.San.I., of Westminster, S.W., and Bristol, has been instructed to prepare a scheme of sewage disposal for this district to meet the requirements of the Local Government Board and the Thames Conservators.

WINCHESTER CATHEDRAL RESTORATION WORKS.

The Dean and Chapter have presented a silver rose bowl to Mr. W. B. Walker in testimony of his services during the past six years upon the restoration works at the Cathedral. Mr. Walker, a diver, on the staff of Messrs. Siebe, Gorman & Co., of Lambeth, working in absolute darkness in 20 ft. of water, succeeded in gradually excavating the peat at the foundations and in spreading cement, which was lowered to him in bags. Pumping operations were discarded through fear of drawing the sand and silt away from other parts of the foundations, and the use of artificial light was found to be impossible. Mr. Francis Fox, C.E., in diving dress, examined from time to time the progress of the work.



Detail of Design for Loggia.

By Mr. Adrian Ferrington.



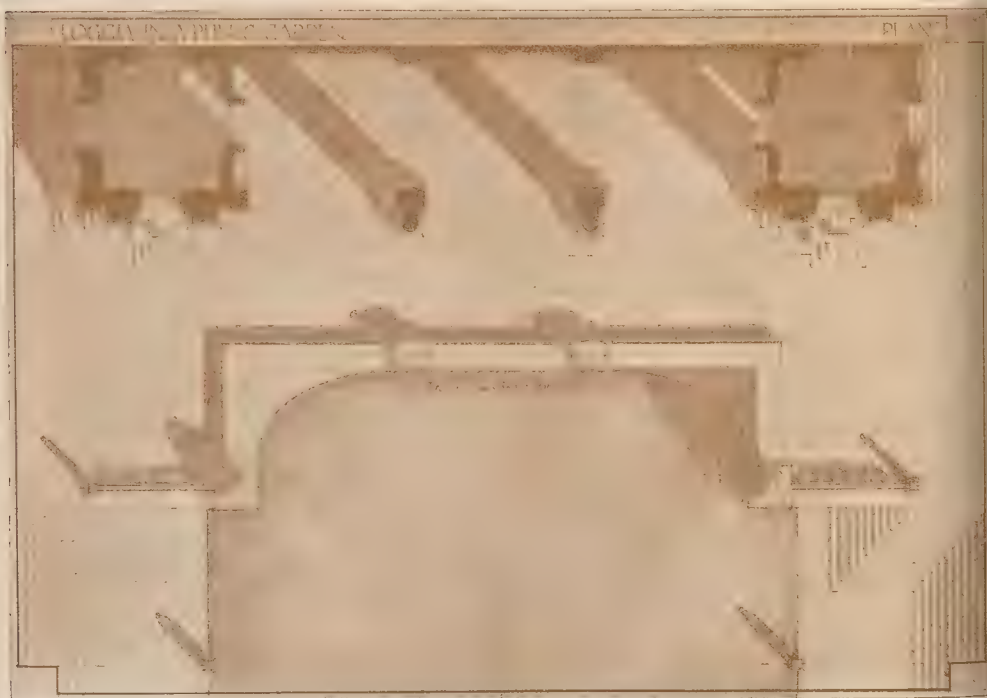
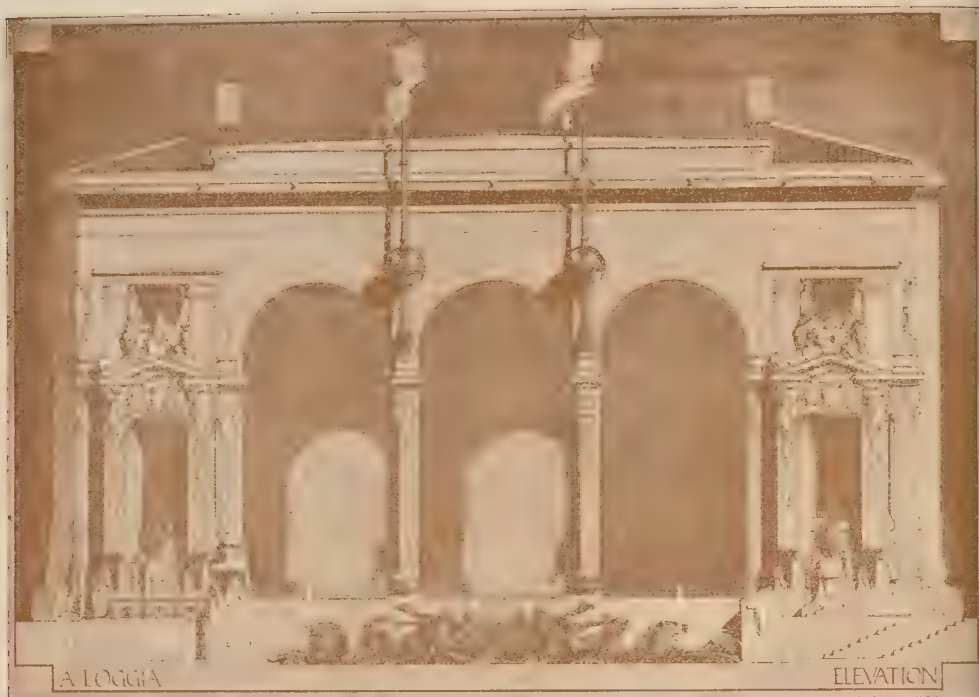
Photo by Frih.

PACKHORSE CLAPPER BRIDGE AT POSTBRIDGE, DARTMOOR.



Photo by Frih.

BAMBOO SUSPENSION BRIDGE ON THE TEESTA, DARJEELING, INDIA.



A LOGGIA IN A PUBLIC GARDEN BY MR. ADRIAN BERRINGTON



R A Schools, 1910 Travelling Studentship (£60)

A LOGGIA IN A PUBLIC BUILDING



NO. 1011. N.Y. P.B. 1888. A.A. VAN FARMER. 1888. 1011. 1011. 1011.



LOGGIA
HALF INCH DETAIL

A LOGGIA IN A PUBLIC GARDEN By MR. ADRIAN BERRINGTON

A. Schoell, 1910 Travelling Studentship (£60)

Royal Academy Exhibition, 1911



Photo by Frith.

THE BRIDGE OF SHOPS, SRINAGAR, KASHMIR.



Photo by Frith.

THE BRIDGE OF SHOPS, SRINAGAR, KASHMIR.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

MONTHLY REVIEW *of* CONSTRUCTION.

BUILDING IN CANADA.

As an example of the manner in which the rapid development of Canada forces building under difficulties, the illustration on this page is interesting. The building in question is a branch of the Canadian Bank of Commerce at Fort William, Ontario. The principal façade fell to be built in the winter months, and was consequently subject to temperature at times as low as 40 deg. below zero.

In this case the rear and side walls were already built and their openings closed. The area of the front with a due allowance of working space was enclosed by a hoarding to its full height. The permanent heating system was roughed in at an early state, and the building heated by temporarily-placed radiators, with the result that the work proceeded independently of atmospheric conditions. Needless to say, plaster work can be proceeded with by the same means. Conditions do not always call for this system of enclosure. Much work can be done in the open in fairly severe frost. Concrete work is executed, for instance, with the sand, gravel, and water all heated in an old boiler or cylinder, and the resulting work is found to be quite sound, as the cement is set before the materials are sufficiently cooled to freeze.

NOTES ON SOME DEFINITIONS USED IN STRUCTURAL MECHANICS—(Contd. from p. 45).

BY PERCY J. WALDRAM, F.S.I.

MODULUS OF ELASTICITY AND DEFLECTION.

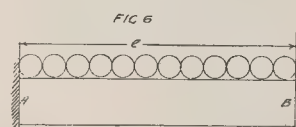
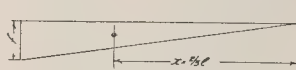
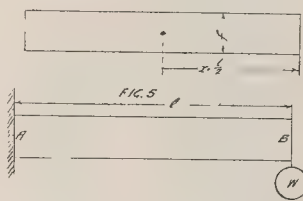
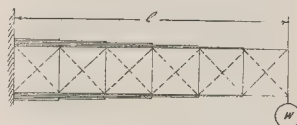
Cantilever Concentrated Load Uniform Flange Stress.

In the last article (see *Builder*, June 14, 1911, page 45) it was shown that the greatest deflection (Δ) of a cantilever would be correctly expressed by multiplying the area (G) of a diagram of flange stresses by 2 and by the distance (X) of the centre of gravity of that area from the point of greatest deflection, and dividing it by the depth (D) of the cantilever and the modulus of elasticity (E) of the material or $\Delta = \frac{2GX}{ED}$.

This solution can be applied to determine the deflection of parallel beams and cantilevers as follows:—

First, take a cantilever in Fig. 5 with flanges proportioned to give a uniform flange stress. The flange stress diagram will be a rectangle—its area (G) will be fA , its leverage

X will be $\frac{1}{2}l$, and $\frac{2GX}{ED}$ will, in this case,



be represented by $\frac{2fl \times \frac{1}{2}l}{Ed}$, or $\frac{fl^2}{Ed}$.

If we want to represent this in terms of load (W), then f = the bending moment \div the flange area and depth, or $\frac{Wl}{Ad}$ and the

$$\text{deflection} = \frac{Wl^2}{EAd^2}$$

Cantilever Distributed Load Uniform Flange Stress.

If the load W had been distributed then both f and the deflection would be half these values when expressed in terms of W .

Cantilever Uniform Section Concentrated Load.

Next take a cantilever of uniform section as Fig. 6 loaded at one end. The area of the stress diagram in this case will be $\frac{fl}{2}$, the distance of its c.g. from B will be $\frac{3}{4}l$ and $\frac{2GX}{ED}$ will be represented by $\frac{2fl}{3Ed}$,

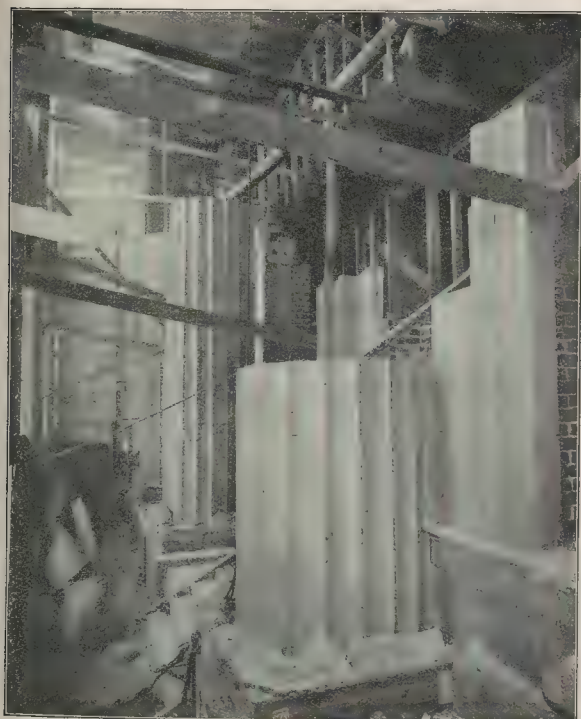
or expressed in terms of the load W ; $f = \frac{Wl}{Ad}$

$$\Delta = \frac{1}{3} \frac{Wl^2}{EAd^2}$$

Cantilever Uniform Section Distributed Load.

Next take such a cantilever loaded with a distributed load as Fig. 7. In this case the diagram of stress intensity is traced by a parabola. The area of it (obtained from the particulars given in Fig. 8) would be $\frac{2fl}{3}$, the distance of its c.g. would be $\frac{3}{4}l$

and $\frac{2GX}{ED}$ would be $\frac{2fl}{3} \times \frac{3}{4} \times \frac{1}{Ad}$ or



Canada Bank of Commerce, Fort William.

Mr. Victor D. Horsburgh, A.R.I.B.A., Architect.

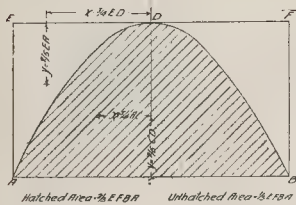


FIG. 8

$\frac{6f^2}{12Ed}$ or $\frac{f^2}{2Ed}$ f in this case would be $\frac{WL}{2Ad}$ and the Δ for any distributed

load W would be $\frac{W^2}{4EA d^2}$.

Obviously the deflection in any kind of parallel cantilever can be expressed in simple terms of load, span, depth, flange area, and the modulus of elasticity of the particular material of which the cantilever is constructed.

Girder Uniform Section Concentrated Load.

Fig. 9 shows a girder under a concentrated load. This may be considered as two cantilevers back to back fixed in the centre against the downward bearing load and loaded with the end reactions of $\frac{W}{2}$, the central deflection being equal to the deflections of either cantilever.

In this case the area of the stress diagram $G = f \times \frac{l}{2} \times \frac{1}{2} \times \frac{l}{4} = \frac{f l^2}{8}$, the distance of its c.g. from the point of greatest deflection at the bearings, would be $\frac{2}{3}$ of $\frac{l}{4}$ or $\frac{l}{6}$ and

$\frac{2GX}{Ed} = \frac{2 \times \frac{f l^2}{8} \times \frac{l}{6}}{Ed} = \frac{f l^3}{24Ed}$. If $f = \frac{WL}{4Ad}$, then the deflection expressed as

before in terms of $W = \frac{WL}{24EA d^2}$.

Girder Uniform Section Distributed Load.

The next case is that of a girder loaded with a distributed load W (Fig. 10). Treating it in the same way as two cantilevers under a distributed load, we attribute the values in $\frac{2GX}{Ed}$ as before. G (the area of either

half of the stress diagram) $= \frac{3}{8} \times \frac{fl}{2}$, and the distance of its c.g. from A (X) $= \frac{5}{16} l$.

$$\Delta = 2 \times \frac{3}{8} \times \frac{fl}{2} \times \frac{5l}{16} \times \frac{1}{Ed} = \frac{5f l^3}{64Ed}$$

In this case $f = \frac{WL}{8Ad}$ so that the deflection in terms of W is

$$\Delta = \frac{5 \times WL \times l^3}{64 \times 8 \times Ad \times Ed} = \frac{5}{1024} \frac{W l^4}{EA d^2}$$

Girder Uniform Flange Stress Distributed Load.

The next case (Fig. 11) is that of a girder with flanges proportioned to the load, giving a uniform flange stress under a distributed load.

The values of $\frac{2GX}{Ed}$ will be as follows:—

$$G = fl \quad X = \frac{1}{2}l \quad f = \frac{Wl}{8Ad}$$

$$\frac{2GX}{Ed} = \frac{fl \times l}{4Ed} = \frac{f l^2}{4Ed} \quad \Delta = \frac{W l^4}{32EA d^2}$$

Girder Uniform Flange Stress Concentrated Load.

It is obvious by inspection that in such a girder under a concentrated load the value of $\frac{2GX}{Ed}$ would be the same $\frac{f l^2}{4Ed}$ but

as $f = \frac{WL}{4Ad}$ then $\Delta = \frac{W l^3}{16EA d^2}$.

Each of the seven cases dealt with results in the term $\frac{W l^3}{EA d^2}$ multiplied by the varying figures $1, \frac{5}{1024}, \frac{1}{32}, \frac{1}{16}, \frac{1}{8}, \frac{1}{4}$, and $\frac{1}{2}$, which varying figures may be expressed as a constant C .

In the foregoing deductions the approximation Ad (flange area \times effective depth) has been used to express the section modulus for the sake of clearness. This should now be replaced by the more exact expression Z , so that the general formula would read

$$= \frac{W l^3}{EZ d} \times C. \text{ The term } d \text{ in this formula}$$

would be the full depth in rectangular and other sections which are symmetrical about their neutral axes. In such sections the flange stress f which causes the stretch setting up the initial gradient, is measured in the outermost fibres. For such sections, therefore, the formula can be further simplified, for $Zd = \frac{I}{d} \times d = 2I$ and $\frac{CWP}{EZ d} = \frac{CWP}{2EI}$, and if the foregoing values of C be halved, a new constant n ($= \frac{1}{2}C$) can be used with the formula $\Delta = \frac{nW l^3}{EI}$.

The values of n may be tabulated as follows:—

	Uniform Section	Uniform Flange Stress.
Cantilever concentrated load ...	$\frac{1}{8}$	$\frac{1}{4}$
Cantilever distributed load ...	$\frac{5}{1024}$	$\frac{1}{16}$
Girder central load ...	$\frac{1}{32}$	$\frac{1}{8}$
Girder distributed load ...	$\frac{1}{16}$	$\frac{1}{4}$

For T and other sections which are not symmetrical about their neutral axes the formula can be used in the same form. In the form of $\frac{CWP}{EZ d}$ the depth d would be twice the greatest distance (y) of the neutral axis from the outer fibres.

The fibre stress to which such a beam would be calculated would be that in the extreme fibres at the tip of the web, and the gradient setting up deflection would be determined by the stretch of these fibres \div the distance Y . This gradient would be just the same as that determined by the lesser distortion in the fibres at the top of the table \div the lesser

distance X . But as the lesser fibre stresses in the table of a T section is not calculated, therefore the lesser distance X is not used. The deflection is, in fact, precisely the same as that of a symmetrical section of a depth equal to $2y$ under the same flange stress, and is, therefore, calculated on precisely the same way. In the practical calculation beams the flange stress f is almost invariably calculated first, and when this is known the factors of load, section modulus, and bending moment can be disregarded, the deflection being merely determined by the span and depth, or $\Delta = \frac{1}{8} \frac{W l^3}{E d^3}$, p being a constant varying with the type of beam and method of loading. E for structural steel can be taken at 13,000 tons, and for a working stress of $7\frac{1}{2}$ tons per square inch the formula can be simplified to

$$\Delta = \frac{p l^4}{d^3} \quad \frac{7.5}{13,000} \div \frac{p l^4}{d^3} = 0.000576,$$

or if S in feet be substituted for l in inches —

$$\Delta = \frac{p S^4}{d^3} \times 0.083$$

p can be tabulated as follows:—

$$\text{Value of } p \text{ in formula } \Delta = \frac{p S^4}{d^3} \times 0.083.$$

	Detail of Beam.	Uniform Section.	Uniform Flange Stress.
Beam and Load.			
Cantilever concentrated load ...	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$
Cantilever distributed load ...	$\frac{5}{1024}$	$\frac{1}{16}$	$\frac{1}{16}$
Girder concentrated load ...	$\frac{1}{32}$	$\frac{1}{8}$	$\frac{1}{8}$
Girder distributed load ...	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{1}{4}$

Handy Formula for the Deflection of Wooden Beams.

If a rectangular beam of clean deal 1 in. broad and 1 in. deep be placed over a span of 1 ft. and loaded centrally with a weight of 1 lb., the deflection will be found to be in the neighbourhood of 0.003 of an inch. Any increase in breadth would decrease the deflection directly, and any increase in depth would decrease it according to the cube of such increase in depth.

If the load be distributed by applying it in the shape of flexible strips of lead the deflection for a 1-lb. load over a 1-ft. span would be about 0.0002, for a 2-ft. span 0.0016, and for a 3-ft. span 0.0054, etc., and any alteration of breadth and depth would have the same effect as in the case of the concentrated load. It is possible to obtain very useful handy formulae from the results of these experiments.

In everyday practice it is very frequently necessary to know for wood beams what is the load in hundredweights either concentrated or distributed which will cause a deflection not exceeding $\frac{1}{16}$ in. per foot of span or $\frac{1}{128}$ in. — the deflection which is usually considered to be sufficient to crack plastered ceilings.

This limit of deflection for a 1-ft. span would be represented by $\frac{1}{128} S$ or 0.021 S . With a beam 1 in. in breadth, 1 in. in depth, and 1 ft. in span, a deflection of 0.002 was caused by a distributed load of 1 lb. Had the beam been 112 lb. the deflection would have been about 0.224 in. In other words, for a unit span of 1 in feet, a unit breadth of 1 in inches, and a unit depth of 1 in inches, a unit distributed load of 1 in hundredweights causes a deflection of approximately $\frac{1}{128}$ in. per foot of span.

For any beam of clean fir, therefore, it can be assumed that the distributed load in hundredweights which will produce a deflection of $\frac{1}{128}$ in. per foot of span will be expressed by $\frac{bd^3}{S^3}$ in feet.

For concentrated central loads the result should be multiplied by $\frac{3}{8}$, and for hard woods the deflection may be taken for practical purposes as the same as deal.

The above handy formula can be further extended. We have ascertained that the load in timber beams which causes a deflection of $\frac{1}{128}$ in. per foot of span can be shortly put as $W = \frac{bd^3}{S^3}$, and we can similarly use the

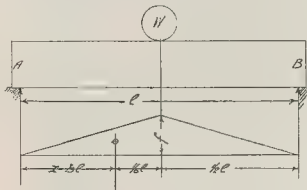


FIG. 9

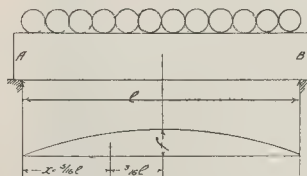


FIG. 10

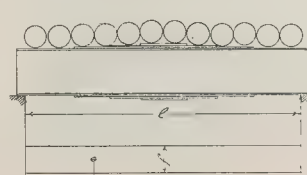


FIG. 11

results of experiments to determine the deflection of a timber beam under any load. In model beam deflected .03 or $\frac{3}{100}$ in. under concentrated load of 1 cwt. in a span of $\frac{1}{4}$ ft., and .02 under a distributed load. Obviously, therefore, to obtain the deflection of any beam we have merely to regard the conditions, i.e., breadth and depth in inches and span in feet of our beam in the experiment and multiply by the relation $\frac{1}{180}$ the deflections of $\frac{1}{100}$ in. per hundredweight

load for beams under concentrated load, and $\frac{1}{180}$ in. for distributed load. If instead of beams we had cantilevers, we can easily use the same experimental results and increase the figure of $\frac{1}{180}$ in. by the relation between the deflections of girders and cantilevers shown in the table. Thus the deflection of a cantilever 1 in. \times 1 in. \times 1 ft. span under a concentrated load of 1 cwt. could be to the deflection $\frac{1}{180}$ in. for a beam of the same section and load in the proportion $\frac{3}{2}$ to $\frac{1}{180}$, or would be $\frac{1}{120}$ in. \times $\frac{3}{2} \div \frac{1}{180}$ or $\frac{1}{80}$ in. say $\frac{1}{80}$ in. It is, however, in practice more convenient to know what deflection is going to take place in a timber beam loaded to the extent of the handy formula for timber beams under distributed load in hundredweights = $\frac{S^2}{30d}$ inches

S in feet
Under these circumstances, assuming the modulus of elasticity for large scantlings to be 9,000 cwt. per square inch and f to be 9 cwt. per square inch, which is the safe f assumed in that formula, then

$$\Delta = \frac{5}{24} \frac{f l^4}{E I} \quad L \text{ in inches} = 512 \text{ in feet.}$$
$$= \frac{5 \times 9 \times 12 S \times 12 S}{24 \times 9,000 \times d} = \frac{S^2}{30d}$$

So that for wood beams loaded with the safe distributed weight allowed by the handy formula (or any other arrangement of weight involving a flange stress of 9 cwt. per square inch) the deflection can be calculated from the very simple formula = $\frac{S^2}{30d}$. If

modulus of 10,800 be assumed, the formula becomes $\frac{S^2}{40d}$

Limiting Ratio of Depth to Span for Given Ratios of Deflection to Span.

It is often convenient in practical design to determine the limiting proportion of depth to span which will keep deflection within defined limits. For fir timber beams and joists under distributed loads the limit of deflection usually fixed is $\frac{1}{180}$ in. per foot of span of $\frac{1}{180}$ in. and the material is almost invariably calculated for an f of 9 cwt. per square inch. Assuming a modulus of 9,000 cwt. the deflection in such beams,

$$\Delta = \frac{5}{24} \frac{f l^4}{E I} \quad \text{and when this is } \frac{1}{180} \text{ in.}$$
$$\text{then } \frac{1}{180} = \frac{5 \times 24 \times 9}{24 \times 10,800} \times \frac{l^4}{d^3}$$
$$\text{or } \frac{1}{d} = \frac{10,800 \times 24}{480 \times 5 \times 9} = 12$$

depth in inches = span in feet. Which is obviously much more than experience has found necessary.

In this connexion it should be recollected that ceilings are cracked not by the deflection due to the total load, but by that portion which it is represented by the superload. The deflection due to structural load is constant and permanent from the time the structure is completed. When the superload is about half the total load—the old rule for floor joists—depth in inches = half span in feet + 1 would be correct.

For rolled joists or steel girders as beams under distributed load with uniform flanges working to a stress (f) of $7\frac{1}{2}$ tons per square inch and using steel possessing a modulus of 10,000 tons,

$$\Delta = \frac{5}{24} \times \frac{f l^4}{E I} \quad \text{and when this is } \frac{1}{180}$$
$$\text{then } \frac{1}{180} = \frac{5 \times 7.5}{24 \times 10,000} \times \frac{l^4}{d^3}$$
$$\frac{l}{d} = \frac{24 \times 13,000}{480 \times 5 \times 7.5} = 17.5$$

The limiting deflection of rolled joists is more frequently taken at about $\frac{1}{360}$ under which conditions the ratio $\frac{l}{d}$ would be about

24 or depth in inches = half span in feet.
Before leaving the subject of deflection it is necessary to note one practical point with regard to cantilevers. It will be found that these often show a deflection greater than is expected. This is because the formula assumes that one end of the cantilever is fixed; but absolutely fixed ends are in ordinary building work almost impossible, and a very slight yielding of the material anchoring the short arm may mean a considerable drooping of the end of the long arm. Take the case of a cantilever 12 ft. long built into a wall with plates top and bottom, and so arranged that the effective centre of the top plate carrying the counterweighting masonry is 18 in. from the front edge of the bottom plate upon which the long arm would tend to rotate. If the top plate moved upwards under the action of the load and compressed the counterweight of masonry to the extent of $\frac{1}{16}$ in., the long arm would drop eight times as much, or $\frac{1}{2}$ in. in addition to the elastic deflection. In the case of a cantilever which is a prolongation of a

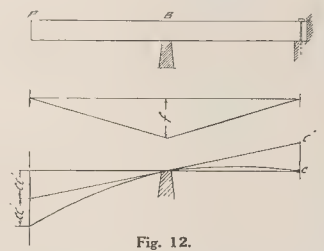
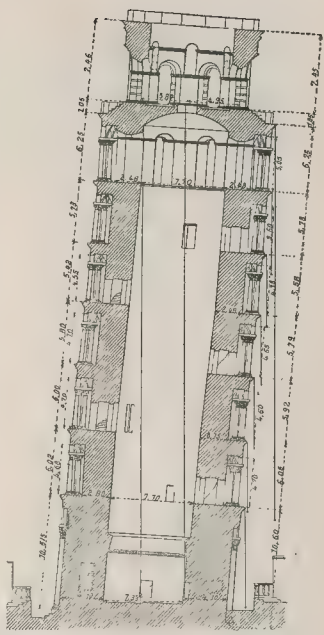


Fig. 12.

girder over one of the bearings, the fixing of the cantilever is obviously flexible. In the case of a cantilever loaded with a distributed weight and counterweighted by means of such a girder similarly loaded and of the same span, as in Fig. 12, the deflection is just double the normal, the difference being due to the flexibility of the counterweighting arm.
Cases necessitating the exact calculation of the deflection of balanced cantilevers do not often arise in architectural practice, cantilever arms being usually kept short; but, if necessary, simple methods of calculation there will be found in Professor T. Claxton Fidler's well-known book on "Bridge Construction."

THE TOWER OF PISA.

In consequence of representations made relative to the stability of the Tower of Pisa the Italian Government last year appointed a Commission to inquire into the actual condition of the structure and to compare the results ascertained with those obtained in 1817 by Cresy and Taylor and in 1859 by Rohault de Fleury.
Measurements taken by the Commission show that the projection of the seventh cornice beyond the first cornice is 2.868 metres, the inclination of the axis being 5.248 metres for the total height of the tower.
According to the measurements made in 1817 by Cresy and Taylor, the inclination of the axis was 3.053 metres. Therefore, if both sets of measurements are accurate, the summit of the tower has moved through the space of 195 millimetres, or nearly 8 in., during the past ninety-three years.
Again, the observations by Rohault de



The Leaning Tower of Pisa.
(From Genie Civil.)

Fleury in 1859 showed the inclination to be 3.180 metres, representing an increase of 127 millimetres since the investigation forty-two years earlier, and giving 68 millimetres as the movement during the succeeding period of fifty-one years.
Thus we get the mean annual increases of inclination of 3 millimetres for the period 1817-59, 1.3 millimetres for the period 1859-1911, and 2.1 millimetres for the period 1817-1911.
Of course, it would not be safe to draw any inferences from the figures quoted unless first satisfied that all of them were absolutely reliable, a matter concerning which there is reason for doubt. The original report and drawings by Cresy and Taylor are not to be found to-day, and the only drawing at the disposition of the Commission was the copy of a section of the tower made in 1831 by Raniere-Grassat from the original of Cresy and Taylor. From this section it appears to be clear that the measurements taken by the two architects mentioned were taken in a direction not exactly agreeing with the maximum inclination, but at a vertical section making an angle of 5° 31' with the section of maximum inclination.
Consequently, comparison of the latest records with those of previous dates is of no practical utility, and we have no means of judging whether the inclination of the tower has changed or remained constant during the past century.
It is generally admitted to-day that the tower was originally intended to be vertical, but that after its commencement in 1174 subsidence took place, giving rise to the inclination which has made the tower not only a curiosity, but also an instructive object-lesson in building construction. Various discoveries by Rohault de Fleury show the accuracy of this view, one being the presence of a gargoyle at first-floor level, the channel of which is at an angle opposed to that of the outward flow of water, and another the evidence of attempts made to correct the inclination of the tower by increasing the height of six successive stories at the gradually-sinking side. According to De Fleury, the differences of height for the stories in question are 3, 4, 7, 14, 8, and 9 centimetres respectively, and it is interesting to recall the fact that the same kind of artifice has been adopted at

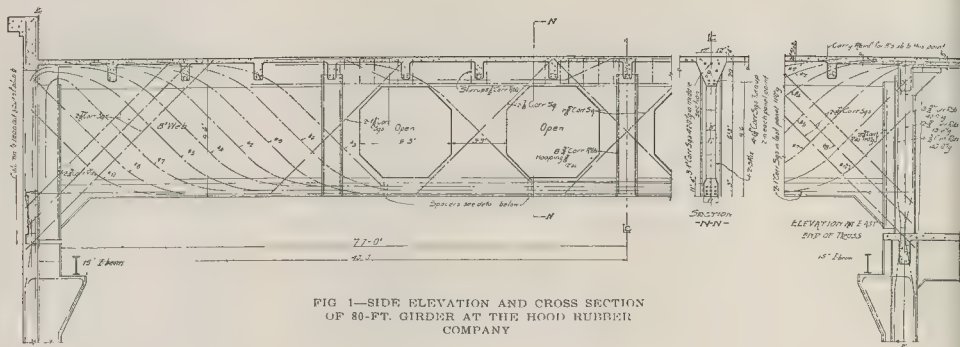


FIG. 1—SIDE ELEVATION AND CROSS SECTION OF 80-FT. GIRDER AT THE HOOD RUBBER COMPANY

(From Cement Age.)

other places in Italy with the object of correcting the inclination of towers which, like that of Pisa, were built during successive epochs.

Borings made under the direction of the present Commission have proved that, contrary to hitherto prevailing views, the tower was not founded upon a solid cylindrical masonry base but upon a masonry ring 3 metres thick beneath the circular wall of the tower, and now having the same inclination as the first floor of the structure.

The most satisfactory conclusion drawn by the Commission is that, as no sign of recent movement exists, the stability of the tower is not endangered. However, a series of bench-marks has been established by means of which it will be easy to follow any deviations of the axis which may occur in future years.

REINFORCED CONCRETE GIRDER OF 80-FT. SPAN.

In a new factory at Watertown, U.S.A., the flat roof of the main building is carried by reinforced concrete girders, 80 ft. long by 9 ft. 6 in. deep, spaced at intervals of 20 ft. apart. The object of employing members of this exceptional span was to obviate the use of interior columns, which would have interfered with the operation of a travelling crane extending across the building.

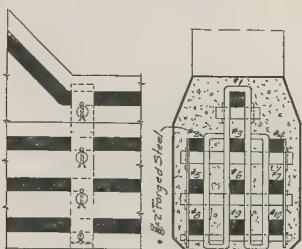


FIG. 2—DETAIL SHOWING SPACER TO HOLD STEEL BARS IN POSITION IN THE 80-FT. GIRDER.

(From Cement Age.)

Fig. 1 is a side elevation and cross-section of a typical girder, the weight of which was kept down by the hexagonal openings shown, which in the girder at one end of the building are utilised for the insertion of windows. Fig. 2 shows the arrangement of the bars in

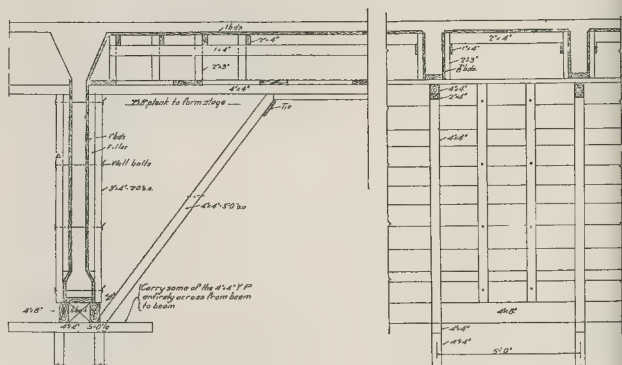


FIG. 3—SECTION AND ELEVATION OF CENTERING USED ON AN 80-FT. GIRDER.

the tension boom, and the spacing clips employed to hold the bars in the predetermined positions.

Owing to the unusual length of the girders the reinforcing bars were specially rolled in 100-ft. lengths, so as to avoid joints in the metal. The main tension reinforcement consists of ten 1½-in. square bars, and diagonal reinforcement is provided by ½-in. square corrugated bars arranged in pairs on each side of the centre line. To provide resistance to shear at the ends of the girder, three ½-in. square corrugated bars are carved down diagonally as represented in Fig. 1.

The whole of the reinforcement is of high carbon steel, the working stress having been taken at 20,000 lb. per square inch. Details are given in Fig. 3 of the moulds used in forming the girders, which, together with the building itself, were constructed by the Abertaw Construction Company, of Boston.

CONSTRUCTION NOTE.

The subjoined notes are taken from specification clauses prepared by Mr. H. H. Quimby and adopted by the National Association of Cement Users (U.S.A.):—

Moulds.—For all surfaces of concrete intended to be exposed the face of the moulds shall be straight, smooth, evenly matched, and watertight, and made so as to be removable

without injury to the concrete. Any offsets at joints shall be dressed off flush, and any openings or knotholes shall be caulked with some stiff, plastic material, such as clay mixed with plaster of Paris or sand. The interior of the moulds shall be treated with petroleum or other water repellent to obviate adhesion between the concrete and the wood.

Depositing Concrete.—The concrete should be wet enough to flush, and be spaded against the face of the mould. The spade is then to be used to push the aggregate forward, care being taken to obtain uniformity of mixture and texture at the face. Concreting shall be continuous throughout definite stages of the work, so that joints shall be at the time of some structural feature, or be made truly straight and level.

Scrubbing Surface.—While the concrete is friable or pulverable, the face boards shall be carefully removed and the concrete surface scrubbed with ordinary fibre brushes with a light stream of water from a hose, until the aggregate is exposed to uniform degree and then rinsed off with water and kept moist for several days. If the concrete has set too hard, wire brushes, followed by fibre brushes and rinsing, may be used. Any voids and similar defects shall be patched with concrete of the same mixture immediately after scrubbing, using the hand or a wooden float—not a steel trowel—for applying and smoothing the patches. After they are sufficiently set—say within from five to twenty-four hours—patches shall be scrubbed to the same texture as the general surface, and be rinsed clean and kept moist for several days.



THE BUILDING TRADE.

AUSTRALIAN BUILDING AND LABOUR NOTES.

THE New South Wales Government has embarked upon a scheme for the manufacture of bricks. An area of twenty-two acres has been secured in a suburb of Sydney, which, it is presumed, will produce fifty millions of bricks per acre. The construction of the kilns is under way, and forty-five workmen employed. Several improved square-end Hoffman kilns are being installed, and seven brick-making machines are being put in, and an output of 300,000 bricks per week is promised in the immediate future.

One of the reasons why the New South Wales Government is undertaking the manufacture of bricks upon a large scale is in order to combat a brick combine which, it is alleged, exists in Sydney, for the purpose of keeping up prices and pressing out smaller competitors. The present prices of bricks in Sydney is about 40s. per 1,000 at the kiln. The Manager of the Government Brick Works says he considers 19s. or 17s. 6d. per 1,000 a fair price, and then he will be able to supply bricks at these figures.

The State Government is not going to limit its enterprise to brick-making only. The Minister for Works says that it is his intention to undertake building, and establish a thoroughly-equipped building yard. He will then be able to compete with any builder in Sydney. He says that the present difficulty he experiences is to get a suitable man to take control of the work. The salary (£1,000 a year) is not sufficient to induce any one of the leading Australian builders to take the position. Several have been sounded. Their replies have been to the effect that they are now making 3,000s. or 4,000s. a year. Under the circumstances, the Minister says if a suitable man cannot be obtained in Australia at £1,000, or even £1,500, he will be compelled to go to England or America for a man.

There is no question that the labour legislation in Australia has in view making the country a close preserve for workmen already there. Not only is every obstacle put in the way of the workmen abroad becoming familiar with the high wages and comparatively easy conditions ruling there, but efforts are made to prevent boys becoming tradesmen. Journeyman painters, for instance, in a claim now being considered before the Painters' Wages Board, at Sydney, asked that only one apprentice be allowed to every six journeymen painters employed by any one employer.

How the union came to base this demand for this limitation was shown in argument at the first sitting of the Wages Board, which took place last month. The Secretary of the union said that the basis was on the assumption that the average painter now at the trade would live thirty years. One boy turned out every five years in a shop employing six journeymen would mean that there would be six apprentices at the end of thirty years to replace the six workmen. It was pointed out by the Chairman that this proportion would be quite insufficient. In the first place, the average life of painters at various ages at any one time would be considerably under thirty years, and nearer fifteen years. The union also assumed that every man entitled to apprenticeship would take the proportionate number allowed, that every apprentice would remain at the trade, that no apprentice would die, and that there would be no increase in population in Sydney. As these assumptions are erroneous, it can easily be seen that the limitation of one in six would mean that in thirty years there would be only half the present number of journeymen.

All unions, however, do not take such narrow views in regard to the matter of competition. The Secretary of the Journeymen Plasterers' Union recently announced in the daily papers that his union did not discourage journeymen plasterers coming to Australia. He said there was more work than the existing number of tradesmen could cope

with. This union welcomed English plasterers so long as they were good tradesmen. The Bricklayers' Union also said through its Secretary there was plenty of work at Sydney for bricklayers for many years to come. The difficulty experienced was to obtain supplies of bricks, notwithstanding the fact that brick kilns were working high pressure and several new kilns had recently been put into operation.

The building of a church measuring 65 ft. by 52 ft. and 35 ft. high was started and completed in one day at Preston Victoria, on March 27 last. The structure had weatherboard walls and galvanised-iron roof. The whole of the work was carried out by a large staff of carpenters, plumbers, and painters, all of whom gave their services gratis. The suggestion of completing the church in one day was made by a clergyman connected with the Associated Churches of Christ, who before he became a clergyman had been a carpenter. The carpenters got a start early, and the plumbers followed them and commenced operations by 2.30 p.m. Between that hour and the evening of the same day the spouting, down pipes, galvanised-iron roof, and gas fittings were in position, and the painters also carried out their part of the work. The church was ready for divine worship on the following day.

There is great divergence in materials used for building in various parts of Australia. It is not always easy to account for the differences apparent, except that the fact that people get accustomed to particular styles of materials and are disinclined to change. The availability of materials is also in consideration. Before the heavy duties placed on timbers the wood house had a distinct advantage over the brick house in Australia. Now, owing to the Customs duties imposed on imported timbers, the cost of wood houses has increased considerably, and in the case of a five-roomed house there is generally not more than 60s. difference in favour of the wood house.

Except for the risk of fire, the extra cost for insurance, and the extra cost of painting and keeping in repair, the wood house, as far as Australia is concerned, makes a satisfactory dwelling. It is cool and attractive, and the cost of material and labour entailed in its construction being less, there is less temptation to skimp the size of rooms.

Roughly, there are two classes of wood houses generally built in Australia. One is the weatherboard house, with the galvanised-iron roof. All outside, excepting the roof, is usually painted. The other style is a variation of the half-timbered Elizabethan house. It has hardwood framing, and tongue and groove timber weatherboard or rough-cast walls, with slate, tile, or shingle roof.

The use of shingles in Australia for roof or walling is not uncommon. The class of shingles used are usually either oak or American redwood. Oak shingles are left unfinished. They weather to a pleasing grey tone. The redwood is usually stained green or brown. For purposes of roofs, shingles are more costly than either slate or tiles, and are only used to give a homely or distinctive look to private houses.

IS EXTERNAL POINTING IN BRICKWORK DOOMED?

In all the treatises on building construction very lengthy descriptions are given of the various kinds of pointed joints in brickwork, and the advantages and disadvantages of each, but there is always a warning against building brickwork or pointing in frosty weather. The use of mortar in frosty weather has in some cases been continued by mixing sugar with it, and satisfactory results are said to have resulted.

The warning against frost, however, would have struck Gilbert as a useful idea if he could ever have been able to employ it literally, for why caution the builder against something he cannot prevent. His work, sooner or later, will have to stand the test

of frost as well as time. If the mortar will not stand frost, whilst it is wet, then, although it dries and hardens, water can still enter through the absorbent bricks.

Bricks, unless they be of the pressed, hard-burnt vitrified type, such as Staffordshires, will absorb moisture, rain will soak well into porous sand-faced bricks, and then the mortar is attacked internally as well as externally. The so-called weather-struck joint, with its nice slope, retains more water than a plain flush vertical joint; besides, wherever there is a crevice water will accumulate. Instead of the water running or trickling down the surface of the joint, some of it creeps upward, and the other only soaks into the brickwork underneath the joint.

Unless, therefore, both the mortar and bricks be hard the water will enter, and it is only a matter of time and disintegration must take place. This is very apparent to everyone, for it is necessary to repoint brickwork every few years to keep it smart in appearance.

Mechanical brickwork, like mechanical lettering, has no beauty, except, perhaps, a statistician to be the judge, for although a straight line—or a few straight lines judiciously congregated as in a cornice—be a thing of beauty, innumerable straight lines mathematically arranged with others at right angles tire the eyes, lacking sympathy.

Many of our large industrial towns owe their lack of beauty to this very fact, and the sausage-machine-like turn-out of the endless rows of houses. The sharp, clear-cut edges of the Victorian type of machine-made red bricks added to this unpicturesqueness, and even where that was lacking the various forms of false jointing of the patch-as-patch-can type brought about the same results.

The sole aim and object of the brick manufacturer seemed to be to get the maximum size of brick allowable within the statute limit for taxation, which, combined with the proportions of breadth and thickness for proper bonding, gave the universal size of the bricks employed.

The use of hard bricks, although commendable from the point of weatherproofness, has been found to be conducive to dampness internally. With a soft brick a certain amount of "breathing" takes place, and is probably one great reason why houses built with them have not been universally damp.

When the mortar was set back in the joints of the Church Hall at Westminster the fact was freely commented upon and questioned as to its advantages, but the idea has taken root and been greatly employed elsewhere. Flush joints have also been greatly employed, the mortar simply being finished off with the trowel as the work proceeds.

Thin bricks after the Roman type have also come into vogue, and their judicious employment in arches, strings, and to jambs of doors and windows introduces an artistic element entirely lacking in mechanically-jointed brickwork.

SOME LEGAL QUESTIONS ABOUT EXTRAS.

WE have received the following communication from Mr. J. E. Yerbury, F.S.S.:—
"The article in your issue for August 4 last raises a point which has struck me very forcibly on many occasions when engaged in arbitration and High Court cases, viz.—Is it not time to call a conference of representative architects and builders to revise the present R.I.B.A. form of contract?"

I have had a good deal of experience in arbitrations and in cases before official referees, and am quite convinced that the majority of those cases might have been saved by the use of a more simple form of contract.

I cannot at the moment enter into a detailed criticism of the R.I.B.A. contract, but I should like to refer to one or two of the points raised in your article.

1. Who is liable to pay for extras?

It is obvious that if the building owner requires extra works, and orders them, or

allows the architect, his agent, to do so on his behalf, he (the building owner) is liable. And I think, if having knowledge that work is being done which he has been informed would be an extra, he would make himself liable if he did not repudiate as soon as it became within his knowledge that the work was being done.

But in the rare cases, I think, when the contract limits the agency of the architect, by the insertion of a clause, or an addition to one of the clauses of the R.I.B.A. contract, setting out that the architect shall not have power to order extra works, or limiting the amount he is authorised to spend upon extras, it is obvious, to my mind, that the architect is liable for all extras ordered by him, not covered by the contract.

It would follow from this that the builder must obtain an order for all works he wishes to charge for as extras, and it will depend upon the form of contract to whom he is to look for the order.

- (a) Entirely to the architect where no restriction is put upon his authority under the contract.
- (b) To the architect where his agency is limited in amount, first up to the limit of his authority, and then to the employer.
- (c) Entirely to the employer where all authority is taken from the architect by the contract.

Under the R.I.B.A. contract the builder must obtain the order for extras in writing, and the failure of unbusiness-like architects to comply with this condition has cost builders thousands of pounds. It is the duty of a builder's foreman to look after his employer's interests, and he is naturally on the look-out for extras. It is the architect's desire to make his work as perfect as possible, and improvements which suggest themselves as the work proceeds are ordered and carried out, and it is only when the builder's account is rendered at the end of the job that the architect is aware that he has been reckless.

The builder naturally charges as much as he can, generally from 25 per cent. to 250 per cent. more than the architect expects. The architect cannot deny the order for work, and would pay what he thinks a reasonable amount—the employer perhaps is willing to pay what the architect certifies, but the builder's idea of a reasonable amount is not the architect's. They soon get into a fight, and then the clause that all extras shall be ordered in writing is pointed out, and the builder has to take what he can get.

But is it quite fair that this clause should work so hardly against the builder?

If an architect of repute gives an order on the job, the builder goes on with the work trusting the architect to send the order, and if he fails to do so it is hard that the builder should suffer the loss of the cost of that work.

In other cases the builder does not know of an extra until the work is completed; the foreman takes the order and carries out the work; he cannot say to the architect, without a certain reflection upon the architect's good faith, "Very well, sir, I will stop the work until you send your order in writing," or "I will not go on with this, as it will be an extra, unless you put your order in writing at once."

The method I have adopted in my own practice is a simple one. I have special books printed for omissions and additions, and for extras. On these order-books I have printed at the bottom a notice in black type that no order will be recognised as an extra unless given on one of these special forms, or by letter signed by myself. On my certificates I also state that the certificate is paid on the understanding that no extras will be charged except those authorised by these orders, the total amount of which are shown on the certificate.

And I make this easy by obtaining an estimate before I give an order for extras if it is possible, and where impossible I state the number of the exceptions.

In this way I know exactly where I am, and the builder is in the same position. The building owner, when he receives my certificate, knows that there are extras, and generally the amount—where exceptions are comparatively numerous, he has his attention called to the fact as the work proceeds.

Builders who have worked under me for the

first time have complained that my methods were irksome, but before the end of the job they have usually informed me that they wish every architect would adopt my plan; and I have never had to fight a builder or found a client dissatisfied at the end of a job.

2. The next point I wish to refer to is that under the R.I.B.A. contract the only safeguard to the builder is the arbitration clause, for, as you say in your article, "the builder submits himself entirely to the judgment of the architect" subject to arbitration.

With a strong and just architect this works well enough, but with a weak or unjust one, or one under the thumb of an employer, very badly indeed. It is true the builder, if he can afford it, may take advantage of the arbitration clause, but this means time and money, and at present the arbitrator is nearly always an architect, and my experience is that the architect who is a good arbitrator on a building contract is very difficult to find. The arbitrator should always be a lawyer, or, if an architect, one specially qualified by experience and training to deal with matters in a judicial manner, and they are rare. I remember one case where a distinguished arbitrator, who was an architect, gave very heavy penalties against a builder upon facts which only an architect who had been in similar difficulties himself could possibly have given such an award. He was honest, but he treated his brother architect as he would wish himself to be treated, and could not appreciate the position which really existed.

Had an appeal been possible, I am quite certain his award would have been laughed at by lawyers.

I do not agree that "it is a nice question how far the architect has authority to bind the building owner in making alterations"; it appears to me to be perfectly clear that the architect is the agent of the building owner and has authority to do all an agent may do, unless such authority is clearly and definitely restricted by the contract; and the owner is bound to pay upon presentation of architect's certificate. I believe there is no safer bond to sue upon than an architect's certificate properly given under the R.I.B.A. contract.

I fear your space will not allow me to deal with other points in your article, but I trust you will allow me the opportunity of raising these questions in your columns, viz.—1. Is it not time the R.I.B.A. contract was revised and very greatly simplified? 2. If this is done, would it not be more satisfactory that the arbitrator should be a lawyer rather than an architect? It may be said that this would take remunerative work from one profession and transfer it to another, but I don't think this would be the case. The arbitrator being a lawyer, architects would be employed to state the case rather than counsel.

BUILDING AND LABOUR IN MELBOURNE.

We learn from the Melbourne *Argus* that great difficulty is being found by architects and others who have building contracts to let to find builders who are willing to undertake them. Even for large city jobs, where there is abundant room for high profit, very few tenders are received, while tenders have to be called again and again for important country jobs before anybody can be found willing to execute them. The reason is not that builders are less enterprising or that they are at all unwilling to undertake the work. They are not able to do it, because they cannot obtain tradesmen to man the jobs. The difficulty has reached an acute stage. The Master Builders' Association has 110 members. Details of the number of men urgently needed by all of them showed that the trade was undermanned to the enormous extent of 50 per cent. The number of bricklayers, plasterers, painters, plumbers, and so forth requires to be doubled before it will be possible for the builders to cope with all the work which requires to be done. It is not that there has been any extraordinary boom in the building trade. For years past there has been a steadily increasing activity in the trade. The population of Melbourne and of Victoria has been growing, and people must be housed. Businesses of all sorts have been increasing, and larger buildings will be needed. At all holiday seasons the existing accommodation is unable to meet requirements. There has been extension in this direction. Hundreds of thousands of pounds are being spent every year in that branch of business alone. Warehouses, factories, shops are

being rebuilt and enlarged in all parts of the city. Public buildings are being erected to meet the increased requirements of Government institutions. Hospitals and charitable institutions of all kinds require more building accommodation. The growth of population and the increased prosperity of the country are jointly responsible for this, for it is the same all over Australia. In Sydney a great number of very large building operations have been postponed until the builders are able to deal with them. The tradesmen to do the work are not to be found in Australia, and those who want the buildings just have to wait. At least 500 bricklayers are urgently needed in Melbourne. By "bricklayer" is meant a skilled tradesman. Every man who calls himself a bricklayer does not comply with that description. It is estimated that if 500 bricklayers could be obtained there would be room also for at least 150 additional bricklayers' labourers, 150 plasterers, and 200 painters, carpenters, carpenters' labourers, and plumbers. In these estimates no account has been taken of the needs of the country districts, though the scarcity of labour there is greater than in the city, for tradesmen have gradually deserted the country to take up the more congenial work in Melbourne. Wages in the trade are high, while the hours are limited to forty-four per week. Bricklayers receive a minimum of 1s. 6d. per hour—6s. per week. Plasterers are paid 11s. 8d. per day. Painters receive 1s. 3d. per hour. Plumbers' wages are 1s. 7d. per hour, and tuck-pointers are paid 11s. to 12s. per day. Carpenters receive from 6s. 8d. a week for foremen who exercise control over the work of three men or more to 5s. 3d. a week for ordinary carpenters' labourers. The working carpenter receives 6s. 2d. per week. Their hours are forty-four a week. They do not commence work until a quarter to eight o'clock in the morning (double rates are paid for time worked before that hour), and do not work after a quarter-past five o'clock on week days and a quarter past twelve o'clock on Saturdays. All holiday work is paid for at overtime rates. Wages boards control the wages and hours of all the workmen in the building trade, and some of these boards are even now considering determinations which will increase the rates. Although these rates are fixed by wages boards, they are only the minimum. Builders pay good tradesmen considerably higher rates. An increase of 1s. a day is gladly given to retain the services of good tradesmen.

GENERAL BUILDING NEWS.

NEW SCHOOL, CRAIGTON.

This school has been erected to provide accommodation for 1,020 pupils, and has been designed by Messrs. Watson & Salmond, architects, of Glasgow.

NEW SCHOOL, WEMYSS.

Mr. G. Charles Campbell, of Methil, is the architect for the new school, which is proposed by the Methil Trust. The estimated cost of the work is 10,000l., and the accommodation is for 1,000.

NEW SCHOOL, BITTON VALENC.

These buildings have been erected by Messrs. Wallis & Sons, Ltd., builders, of Maidstone, at a cost of about 30,000l. The architect for the work was Mr. H. Percy Adams.

NEW SCHOOL, MONKTON.

A new school is to be erected, providing accommodation for 160 pupils, at an estimated cost of about 975l. The architect is Mr. W. W. Reid.

PUBLIC SCHOOL, MUTHILL.

Additions are to be made to this school, including rooms for cookery, laundry, and woodwork, etc. The following are contractors for the work: Mason, Mr. J. T. McRobbie, Muthill; joiners, Messrs. Taylor & Scobie, Blackford; glazier, Mr. R. Williams, Muthill; plasterer, Mr. Jas. Gortie, Crieff; plumbers, Messrs. Bennett & Ferguson, Crieff.

PUBLIC LIBRARY, NEW CROSS.

Messrs. Castle & Warren, architects, of Norfolk-street, Strand, W.C., prepared the designs for this new library, which has been erected at a cost of about 12,000l. The building was Mr. F. J. Gorham, and the heating arrangements were carried out by Messrs. Buckley & Co.

PAVILION AND WINTER GARDENS, MARGATE.

These improvements at Margate include the erection of a pavilion, with seating accommodation for 2,500, an open arena with accommodation for 1,200, and balconies overlooking the sea with a provision for 500. The whole scheme has been designed by Mr. Borg, the Borough Engineer, and the estimated cost is about 23,000l. The contractor for the work was Mr. Deane.

TRADE NEWS.

A new clock has been ordered for the Parish Church, Widdow Church, near Ware, Herts, which will strike the hours and show time on a large dial. It is to be fitted with all the latest improvements, and generally to the designs of the late Lord Grimthorpe. The makers are Messrs. John Smith & Sons, Midland Clock Works, Derby. The same firm have also recently made clocks at Saxthorpe Church, Norfolk, and Barton Mills Church, Suffolk.

Boyle's latest patent "air-pump" ventilators have been applied to Burton-on-Trent Grammar School.

The John Coupland Hospital, Gainsborough, being supplied with Shorland's double-ported patent Manchester stoves with descending smoke flues, patent Manchester grates, exhaust roof ventilators, and inlet ventilators, by Messrs. E. H. Shorland & Brother, Ltd., of Failsforth, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

Width of Way.

Holborn.—Erection of a building upon the site of Nos. 9, 10, and 11, Eagle-street, Holborn (Mr. W. C. Waymouth).—Consent.

Width of Way and Line of Frontage.

Fulham.—Erection of buildings on the south-western side of Burlington-road, Fulham (Mr. Kesteven for Mr. F. H. Shepherd).—Consent.

Line of Frontage and Construction.

Hammersmith.—Showcase in front of No. 40, King-street, Hammersmith (Mrs. L. Raleigh).—Consent.

Kensington, South.—Showcase at No. 114, Church-street, Kensington (Mrs. L. D. Candler).—Consent.

Width of Way, Projection, and Construction.
City of London.—Brick, steel, and concrete gangway over the public way of Catherine Wheel alley, Bishopsgate (Mr. H. E. Hoven).—Consent.

Width of Way, Deviation from Certified Plan, Projections, and Construction.

Kensington, South.—Addition over the motor garage at Nos. 39 and 41, Queen's-gate-place, Kensington, the erection of an external iron staircase and balconies, and the erection of a boundary fence (Messrs. W. D. Hodges & Co., Ltd.).—Consent.

Space at Rear.

Kensington, South.—Addition at the rear of No. 44, Duke's-lane, Kensington (Messrs. Moore & Hunter for Mrs. E. E. Annett).—Consent.

Strand.—Hotel building upon a site abutting upon Glasshouse-street, Air street, Brewer-street, and Sherwood-street, Westminster (Messrs. W. J. Ansell and H. Tanner, jun.).—Consent.

Westminster.—House to abut upon the western side of Smith-square (Mr. E. L. Lutons for the Right Hon. R. McKenna, M.P.).—Consent.

Space at Rear and Alteration of Buildings.

Clapham.—Alterations at Nos. 310, 312, and 314, Clapham road, Clapham (Mr. J. J. Freeland for Mr. F. G. McKim).—Consent.

Southwark, West.—Alterations at Nos. 145, 147, and 149, Borough High-street (Messrs. S. Haskins & Brothers). Refused.

Building for the Supply of Electricity.

Hamstead.—Two wooden cooling towers with steel substructures at the Hamstead Metropolitan Borough Council electricity generating-station, Lithos-road, Hamstead (Klein Engineering Company (1908), Ltd., for Hamstead Metropolitan Borough Council).—Consent.

Holborn.—Steel and concrete chimney-shaft at the electricity generating-station, Short's-gate, Holborn (Charing-cross, West-end, and City Electricity Supply Company, Ltd.).—Consent.

Limehouse.—Iron building beneath the coal weighing hopper at the southern end of the telegraph track at the electricity generating-station of the Stepney Metropolitan Borough Council, Narrow-street, Limehouse (Mr. W. C. P. Tapper for Stepney Metropolitan Borough Council).—Consent.

Limehouse.—Coal hopper and an ash hopper at the electricity generating station, Narrows-street, Limehouse (Messrs. Strachan & Henderson, Ltd., for the Stepney Metropolitan Borough Council).—Consent.

Uniting of Buildings.

City of London.—Uniting of a new building in Poppin's-court, Fleet street, with Nos. 107 and 111, Fleet-street (Messrs. Smees & Housh for Messrs. Thomas Cook & Son).—Consent.

Peckham.—Formation of an opening in the party wall between Nos. 24 and 26, Atwell-road, Peckham (Mr. A. Harris for Mr. J. Lennard).—Consent.

Strand.—Additional openings in the party wall between Nos. 3, Clifford-street, and No. 14, Old Burlington street, W. (Mr. C. H. Townsend for Messrs. Owen Grant, Ltd.).—Consent.

Uniting of Buildings and Cubical Extent.

Bermondsey.—Steel, iron, and glass van shelter over a yard at the premises of the Salvation Army on the southern side of Spa-road, Bermondsey (Mr. A. Gordon).—Consent.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ALTRINCHAM.—Institute and alterations to Sunday school (1,600l.); Trustees, Bowdon Downs Congregational Church.

Arnold.—School (4,550l.); Mr. C. J. Bristowe, Secretary, Education Committee, Notts County Council, Nottingham.

Blackhall Mill.—School; Mr. Wood, architect, Burnopfield.

Bymhill.—Enlargement and improvement of schools; Architect, care of The Managers of the parochial schools.

Bolton.—Central offices, Bridgman place (5,000l.); for the Lancashire and Cheshire Miners' Federation.

Branksome Heath.—Enlargement of girls' school; Mr. C. Lisby, Secretary, Education Committee, Poole Town Council.

Brighouse.—St. Chad's Church (12,000l.); Mr. W. H. Wood, architect, The College, Durham, Messrs. W. J. Briggs & Sons, builders, Brighouse. Extensions to premises, Valley Dyeworks, for the Bradford Dyers' Association, Ltd.

Broadstairs.—Showrooms and offices for the Broadstairs Gas Company.

Chelmsford.—Extensions to library (800l.); Mr. C. Brown, surveyor, Chelmsford Town Council.

Chester.—Laundry centre (740l.); Mr. T. G. Huxley, builder, Malpas.

Courthill.—School (250 places); Mr. S. J. Newman, Surveyor, Poole Town Council.

Coventry.—Conversion of Primrose-hill House into slipper baths (2,000l.); Mr. J. E. Swindhurst, Surveyor, Coventry Town Council.

Crowborough.—Enlargement of St. John's School; the Managers.

Darwen.—Cottage home; Architect, care of Clerk to the Guardians.

Dumbarton.—Hall (1,500l.); Mr. W. Reid, Church Street, Dumbarton.

Dunvant.—Extension to Three Crosses in independent Chapel; Mr. W. David, architect, Swansea.

Elgin.—Slipper baths (3,000l.); Mr. A. A. Turfitt, Burgh Hall, Elgin.

Ellesmere Port.—Alterations to Station Hotel (2,000l.), for the Birkenhead Brewery Company.

Folkestone.—The following plans have been passed:—Motor garage, Beacholme, Lower Sandgate road, for Mr. H. R. Kirk; Mr. A. R. Bowles, architect. Additions to garage rear of Nos. 48-50, Rendezvous-street, for Messrs. Gamble & Co.; Mr. O. Marx, architect and builder. Rebuilding additions to No. 23, Ford road, for Mr. H. W. Rye; Mr. H. Vidian, architect.

Glasgow.—Public library, Clydebank (10,000l.); Messrs. Gardner, Millar, & White, architects, 144, St. Vincent street, Glasgow.

Halifax.—Six tramway shelters; Mr. W. M. Rogerson, Tramway Engineer, Halifax Town Council.

Hebden Bridge.—Alterations to Bankfoot Mill for Messrs. Crabtree Brothers.

Herne Bay.—Extensions to East Cliff Pavilion (5,355l.); Messrs. W. Pattinson & Sons, builders, 50, Parliament-street, S.W.

Hornchurch.—Enlargement of the South Hornchurch school (1,450l.); Mr. G. Brown, builder, Maidstone-road, Grays, Essex.

Horton Kirby (Kent).—School, Birchwood corner (2,500l.); Messrs. Hodder & Son, builders, Bromley.

Houston (Renfrewshire).—Extensions to school (2,000l.); Mr. W. Kerr, builder, Houston.

Hull.—Training college (40,290l.); Messrs. G. H. Panten & Sons, builders, 206, Anlaby-road, Hull.

Huntingdon.—Enlargement of school (1,185l.); Mr. J. C. Wrixley, Secretary, Education Committee, North Riding of Yorks County Council, Northallerton.

Hvda (Cheshire).—Swimming baths (3,000l.); Mr. Joseph Mitchell, Council Offices, Hvda.

Keighley.—School (4,700l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

Leeds.—School (2,000l.); Mr. A. P. Harrison, architect, Highfield lane, Keighley; Messrs. H. V. Robinson, Ltd., builders, Lawk-holme-lane, Keighley. School (2,000l.); Mr.

H. Shackleton, Sefton-road, Morecambe. Lloyds Bank (6,000l.); Mr. S. Kitson, architect, Greek-street Chambers, Leeds; Paul Rhodes, builder, Skinner-lane, Leeds.

Langley Green.—Extensions to premises for Messrs. Ham, Baker, & Co.; Mr. William Jackson, builder, Langley Green.

Lithney.—School (1,700l.); Mr. Sampson Hill, architect, Green-lanes, Redruth.

Littlemill.—Instruction centre for the Croydon School Board.

Lowestoft.—School, Christ Church square; Messrs. B. Oliver and H. J. Chatwood, architects, Sudbury.

Manston.—School; Messrs. Cannon & Chorley, 16, Park square, Leeds.

Matlock.—Post Office (12,000l.); Mr. J. W. Wildgoose, builder, Matlock Bath, Derbyshire.

Middlesbrough.—Extensions to shipping offices, Albert-road, for Messrs. Constantine & Pickering. Clothing factory for Messrs. Stewarts, Ltd.

Newhaven.—School; County Architect, East Sussex County Council, County Hall, Lewes.

New Shildon.—Territorial headquarters; Mr. H. C. Chapman, architect, Grainger-street, Newcastle-on-Tyne; Mr. J. Moore, builder, New Shildon. Hall, etc.; Mr. H. Chapman, architect, Grainger-street, Newcastle.

Newton Abbot.—College (40,000l.); Messrs. Mitchell, Son, and Gutteridge, architects, 9, Portland-street, Southampton.

Newtown.—Shop, Buxton-road, for the New Mills Co-operative Society.

Penmau.—(near Liskeard).—School (2,100l.); Mr. J. C. Andrew, architect, Biddicks-court, St. Austell.

Penzance.—School (4,000l.); Mr. Sampson Hill, architect, Green-lanes, Redruth.

Port Erroll.—Extensions to school (2,155l.); Mr. A. H. L. McKinnon, architect, 245, Union-street, Aberdeen.

Radcliffe.—Extensions to asylum (29,300l.); Mr. E. Purnell Hooley, Surveyor, Notts County Council, Shire Hall, Nottingham.

Ilrarny.—(21,155l.); Messrs. Woodbridge & Simpson, builders, Oxford.

Redruth.—House; Mr. Leonard Winn, architect, Boscover street, Truro.

Rochford (Essex).—Alterations to work-house; Mr. F. Grogson, Clerk, Rochford Board of Guardians, Southend.

Rotherham.—Plans have been passed for Messrs. Armstrong & Wortley for nine houses, St. Stephen's-road; also for Mr. D. Hobkin son, for alterations and additions to Nos. 93, 95, and 97, Frederick-street.

Sheffield.—Proposed enlargement of nurses' home (about 9,000l.) for the Sheffield Royal Hospital Board.

Staverton.—Isolation hospital (7,700l.); architect, care of Mr. J. B. Williams, Surveyor, Daventry Rural District Council.

Stretford.—A plan has been passed for Messrs. John Greenwood & Sons, Ltd., for a bakery in Elevator road.

Sutton-in-Ashfield.—School (4,350l.); Mr. J. Greenwood, builder, Mansfield.

Swansea.—Six mills near present works for the Dyffryn Tintplate Company, Morriston.

Taunton.—Additions to library, Corporation-street (1,430l.); Mr. F. Small, builder, Newcastle.

Torquay.—Two houses near Trenchford Dam; Mr. W. B. Crocker, builder. Three conveniences (700l.); Mr. H. A. Garrett, Engineer, Torquay Town Council. The following plans have been passed:—Additions and alterations to Stoodley Knowle, for Colonel Burn, M.P. Additions to "Highfield," Middle Warberry-road; Mr. C. Hankey, alterations and additions to Conway House; Hon. E. Douglas. Additions to "Rocombe," Higher Warberry road, Mr. R. Skir. Motor garage, "The Nest," Mr. J. M. Fodley. Six houses, Mallock-road; Mr. Johnson.

Wallsend.—School (10,000l.); Messrs. Marshall & Tweedy, architects, Eldon-square, Newcastle.

Warrington.—Extensions to warehouse (1,700l.); Messrs. W. & S. Owen, architects, 4, Cairo-street-chambers, Warrington.

Warwick.—Children's homes (3,000l.); Mr. F. Cundell, architect, 34, The Parade, Leamington, Spa.

West Bridgford (Notts).—School (4,050l.); Messrs. Bosworth & Love, builders, Nottingham.

Wigan.—Proposed abattoir for the Wigan and District Co-operative Society. Plans have been passed as follows:—Extensions to slaughter house, etc., Miry-lane, for Messrs. Gallaher Brothers. Three houses, etc., Bolton and Hen streets; Mr. John Winstanley. Additions to Nos. 199 and 201, Poolstock-lane; Mr. H. Tittensor.

Workson.—Twenty-eight houses, Kilton-road, for the Workson Co-operative Society.

York.—Proposed receiving home, Haxby-road (1,200l.); Mr. G. Sykes, Clerk, Board of Guardians, York. Working-class houses, Almaterrace (1,500l.); Mr. F. W. Spurr, Surveyor, York Town Council.

* See also our list of Competitions, Contracts, etc., on another page.

LAW REPORT.

BEFORE THE OFFICIAL REFEREE
(MR. MUR MACKENZIE).
Contractor's Action against Building Owner.
Minter v. Waldstein.*

THE hearing was resumed last week of this case, it being an action brought by Mr. F. G. Minter, a builder and contractor, living at Wimbledon, to recover 2,750*l.* from the defendant, Mr. Chas. Waldstein, a Professor of Fine Art at the University of Cambridge, which sum the plaintiff alleged to be due to him under a certificate of Mr. William Foster, an architect, in respect of the reconstruction of Newton Hall, near Cambridge, of which the defendant is the owner. Defendant counterclaimed for 10,000*l.* damages, alleging that the plaintiff's work was defective, and that the materials used were not in accordance with the specification.

The facts of the case and the evidence were fully reported in the issues of the *Builder* of July 14, 21, 28, and August 4 last.

On Thursday last week Mr. Jude was cross-examined by Mr. Lewis Thomas.

He said he had been in business at Harston, which was a small village near Cambridge. He had never built such a large house as Newton Hall, and never wanted to. He had written to Mr. Foster, before the tenders went out, that he would be glad to do any work in the reconstruction of Newton Hall if he was given the order. He did not get any offer until after Minter was doing the work.

Did considerable friction arise between you and Mr. Minter when you were doing some supplemental work?—If you refer to the conservatory, I say yes.

Cross-examination continued.

It was occasionally the case in new buildings that work had afterwards to be done in easing doors and adjusting locks. Lyon, the butler, gave him the order to come to Newton Hall and ease the doors.

Do you say that it is a proper thing for one man alone to take down a door for the purpose of easing it?—I do not see anything improper in it.

If you put plaster and wood in contact, is it an uncommon thing to find that the plaster will come away from the wood?—I do not recollect ever seeing such a thing before.

Cross-examination continued.

Plaster, of course, had to be put on damp. He did not admit that dry weather would affect it.

What causes a hair crack in a ceiling?—I do not know.

Is it the dry atmosphere on the plaster which causes it?—It might be.

Cross-examination continued.

He considered that the drawing-room ceiling was badly cracked. It had more than a hair crack. The china store cupboard was plugged to the wall, and he thought that the plugs had drawn out of the wall. It was a perfectly proper thing to put linoleum on wood block flooring, provided the flooring was dry when the linoleum was put on. He did not know when he went to Newton Hall, on July 19, that he was to give evidence in this case. He only knew the date when stamp paper was fixed to the cracks by seeing the dates written on the stamp paper in pencil. A good many of the doors which required to be eased were the doors to cupboards. It was not an uncommon thing to have to adjust the doors to cupboards.

The footman's room door required easing from the top. Great heat, no doubt, would affect joinery. He did not know that where the corner cupboards were the hot water pipes were which ran to the radiators; but it might be so.

Mr. John Murray, F.R.I.B.A., Principal Architect and Surveyor to the Commissioners of Woods and Forests in London, and architect to several public bodies, examined by Mr. Clavell Salter, said he had had some twenty-five years' experience, and on March 6 he was retained by the defendant in regard to the contract job in question. He visited Newton Hall on March 11, 13, 27, and 28, and on June 28 and 30. He on all those occasions made a careful inspection, and he had carefully perused the documents in the case, and made a report upon the matters in question. Referring to the roof over the new wing, he said his assistant had prepared a drawing of the roof of the new wing. In his judgment, the roof over the new wing was not properly framed. In his opinion, the timber and wood work was not of the best quality. Some of the timber had shakes in it, and some of it was sappy. The purlins were shaky. The curbs were shaky on both sides. He did not think that the timber of the roof had been subjected to any greater heat than a roof should be capable of bearing. The rafters, too,

had not been properly fitted. The rooms underneath were attic rooms in the roof, and the cross ties or collars of the roof formed the ceiling joists of the attics below. All the ties or collars were fastened to the rafters by spikes or nails, but in his opinion they ought to have been affixed by a half joint, which should also be spiked. He also thought that the spacing of the rafters was faulty. Two rafters, which bore the weight of the water tanks and bearings, were not capable of bearing the weight put upon them. Adjoining the new roof there was a bell turret. He did not think that the supports of that turret were sufficient. The roof plates bedded under the new roof ought to be affixed in some way to the horizontal joists of the second floor—tied in. The roofing felt used, too, was not, in his opinion, of the proper quality. He found that some of the slates had not been properly fixed. He found several of the slates defective. He did not consider the work round the bell turret was properly done.

Referring to the twin roof, the witness said that, in his opinion, it was not properly framed, and there were indications of continuing spreading. The rafters there were improperly fixed to the ridge also. It did not show good workmanship. He did not consider the timber used in the roof was of the best quality, and some of it he regarded as being very bad. Witness also referred in great detail to instances in which he said he did not consider the roof had been constructed in a proper and workmanlike manner.

In his opinion there were not proper and sufficient collars to the roof. Longer collars should have been fixed lower down to tie the purlins together.

Witness also gave evidence to the damage which had been caused by the sagging of the ceiling joists in certain cases. He said that in those cases there were no proper trimmers to the ceiling joists. He had examined throughout the whole house, and made a report upon the actual spacing of the floor joists, and rafters, and things of that kind. The joists did not run parallel as they should do, because they were very unevenly placed and spaced. He had made a very careful examination of the house for the purpose of finding out whether there had been any settlement of the floors. He found that there had been settlement of the floors, which he considered were serious settlements, and he had proved that the settlements had not ceased. The result was, that the ceilings had cracked very largely, and the partitions had also cracked seriously, and the joinery had opened very considerably at the joints. In his report, he had not mentioned mere hair cracks, nor had he put in all the cracks that he had seen. He attributed the cracks to the deflection of the floor above them. He had mentioned in his report the extent of the sags in the floors, and also the extent of the cracks in the ceilings and partitions.

On Friday, Mr. Murray was examined at great length and in great detail as to the alleged defects in the construction of the building, and the cause he assigned for the cracks which had appeared in the ceilings and partitions. He stated that he noticed a considerable increase in the cracks between the visit he made to Newton Hall on June 13 and the visit he made to the Hall last month. He noticed upon his visits in July that the stamp paper, which had been affixed to certain of the cracks upon an earlier occasion, had broken.

The witness said that, in his opinion, to remedy the defects in the construction of the building so as to make it conform with the contract and specification, it would be necessary to have the whole of the valuable furniture in the house removed.

Cross-examined by Mr. Lewis Thomas:

He did not draw himself, personally, every detailed drawing which went out of his office, but he never allowed a single drawing to go out of his office without seeing it first and revising it, if necessary. He had not troubled to find out whether there had been an order upon the plaintiff to put the soil pipes in where they were put, for the reason that he was only instructed to report upon the matter, whether the specification had been carried out or not.

Is it a good thing to subject newly constructed timber to severe heat?—It depends largely on the amount of heat.

Severe heat?—It depends upon what the amount of severe heat is. If you mean very excessive heat, I should say no.

Very excessive heat would be harmful to the timber?—I should say so.

Remember that this timber was put in in a very damp season—1910. In December, 1910, we hear that the temperature of the house was kept up to 84 degrees. Assuming that to be correct, was it fair to subject this timber with damp plaster in the house to a temperature of 84 degrees?

Witness replied that if the mean temperature of the house was kept at 84 degrees, he should say that it was not fair; but he did not understand that the whole of the house was kept at that temperature.

Mr. Clavell Salter said that the evidence showed that the understanding of the witness was correct.

Cross-examination continued.

In his opinion the whole of the timber in the building was not remarkably fine in the smoothness of the cut. It was not bright, to say the least about it. It was probable that it was in consequence of his opinion that the whole of the timber in the building was condemned; but he did not think that it was condemned on his opinion alone. He did not complain of the quality of the rafters, but of the way they were fixed. It was bad workmanship he complained of.

He had heard that the tanks were supplied to special order after the roof had been constructed. That fact did not modify his criticism as to the roof, because the roof could have been properly supported by proper means. Of course, if the contractor had been properly instructed to hang the tanks to the rafters, he would presume he was right.

Mr. Murray, further cross-examined by Mr. Lewis Thomas, said he admitted that Mr. Minter enjoyed a very high reputation for joinery work. He knew that Newton Hall was a house of a professor of art at Cambridge University. He did not suggest that because the house was a more or less show place that Mr. Minter would be less careful about his joinery work than elsewhere. He did not know that the whole of the wood used in the joinery work had been standing for over two years in Mr. Minter's yard. He admitted that a proportion of the joinery was first-class joinery work, but the whole of it was certainly not in his opinion.

Cross-examined as to the twin roof, the witness said that he considered that the joints of the roof were very imperfectly made.

Re-examined by Mr. Clavell Salter:

At the time he was appointed architect, on March 6, he knew that proceedings were going on. At least, he knew that something was going on, but he did not know what it was.

One general question as to the condition of the timber—not as to the quality. You have told my learned friend that excessive heat would tend to increase the number of shakes, that the rapid drying would tend to increase the number of shakes. Are the shakes in this timber of the number or kind you would expect to find in timber of good quality?—No.

It would not be first-class building to put in damp timber?—No.

On no account, replied the witness, could the tanks, battens, and rafters be described as being of the best quality.

If this house had been built of timber of the quality specified, and with the joists spaced as shown on the contract drawings and specification, would these defects, in your opinion, have appeared?—I consider that nearly all of them would not have appeared.

Cross-examination continued.

It was the fact that the rafters of the twin roof were composed of rafters of different lengths. In his view, as an experienced architect, it would not be right or reasonable to leave the sagged floors as they were.

With regard to the slating of the roofs, it was, speaking generally, the fact that he had found several defective slates. He had found the wall plates twisted in the tilting. To his mind that pointed to movement in the roof, which was due to some heavy weight strain. The scheme of reconstruction he had prepared in March or April was confirmed, in his opinion, afterwards, by what had subsequently happened. In plaster work hair cracks were practically unavoidable; but in his view the cracks which had appeared in the plaster work in the present case ought not to be found in first-class work.

Mr. William C. Easdale, examined, said he was a civil engineer and a member of the firm of Messrs. Shenton & Easdale, civil engineers, of Victoria-street, with great experience in drainage matters. Witness stated that, in accordance with instructions, he accompanied by an assistant, went in March last to Newton Hall to inspect the drainage constructed by the plaintiff, and gave evidence detailing defects he had found in the construction of the manholes, thickness of the concrete or masonry, cesspool, and other matters.

Cross-examined, he had been in business on his own account about two years. Before he went into business on his own account as a sanitary engineer, he had acted as the London representative of Messrs. Adams, sanitary engineers. He had expressed his disapproval of the land treatment of sewage, where the land was unsuitable; but he considered that land treatment was best where there was suitable land. He considered that the excavations

* Continued from p. 146.

had made did not affect the stability of construction where the construction was a. He had found that several lengths of m, which appeared in the drawings, had been omitted from the stable yard. He was not an expert in brickwork. He complained that two soil pipes had come inside the house. He admitted that he made a mistake there. He noticed that brickwork of the main part of the cesspool was open jointed. He did not notice the cesspool was constructed to a design a soak-a-way. He thought that a cesspool constructed as a soak-a-way ought to be protected by Act of Parliament. He did not know that the whole of the drainage work was done on "measure and value."

"This is a contract on 'measure and value' for material and labour." If anything else to go in it is at the expense of the employer, is it not?—Yes. Do you say that in these circumstances it is necessary to put in concrete under these pipes?—Yes, certainly.

He saw no sign that the sewage works had been improperly used.

Mr. Alexander Stenning, examined by Mr. John Salter, said he had been a surveyor for many years. He went down to Cowley Hill on July 20. He had examined the spacing of the floors, and found them to be as stated by Mr. Murray. He considered the spacing of the floors was a serious defect from the specification. He considered that the reduction of the strength of the standard provided for by the specification, was about 25 per cent. He found the first floor rooms and the attic rooms spaced upon the average at intervals exceeding 12 inches. He also found that partitions, instead of being wood partitions, were made of patent slab stuff. If they were timber frame partitions, they would be added to the strength of the floor above. He would have helped to take the weight. In his opinion, what is the cause of the sagging and the ceilings and partitions sinking? The insufficient strength of the joists as put in. Examination continued.

He thought that the sagging and cracks did increase as time went on. If nothing done to the floors, and the house continued to be occupied, it was not possible to say far the settlement would go, or what the effect it would be.

With regard to the roofing, the witness equally corroborated the evidence of Mr. Murray.

His witness, cross examined, said he visited Cowley Hill on July 20. He went down by the 1 o'clock train in the morning and returned London by the 4.40 train in the afternoon. Had plenty of time to go over the whole of the house. He had Mr. Murray's figures before him. With regard to the spacing of the floor joists, he relied generally on the evidence of Mr. Murray. He did not know if the joists he had inspected had been replaced in position by the order of the Board.

He replied to the Official Referee, Mr. Lewis, that the joists in that particular case had not, when Sir Alexander saw them, been fixed or permanently placed in position. The case was proceeding as we went to court.

FOREIGN AND COLONIAL.

Building Construction, Brazil.

The *Diario Official* of July 1 notifies that the *Diario* opened on August 21 at the expense of the "Quinta Divisão do Departamento da Guerra, Ministerio da Guerra." Rio Janeiro, for the erection of the main building intended for the Central Army Hospital in a deposit of 5,000 milreis (about 535*l*). He is required to qualify tenders.

St Official, Niteroy, Rio de Janeiro, Brazil.

The *Diario Official* of July 7, publishes a notice (No. 8,805) opening, in favour of the Ministry of Communications and Public Works, a credit of 557,000 milreis (about 60*l*), for the construction of a building intended for the Postal Telegraph Office in Niteroy, State of Rio de Janeiro.

Building in Turkey.

It appears from a recent report to his Excellency by the United States Consul at Beirut that building operations in that port have not kept pace with the growth of population. One cause of the increased demand for houses is that the Eastern habit of permitting several generations of a family to live in the same house, often a small one, is yielding to modern requirements,

and the son who marries now prefers a house of his own. Immigration from the Provinces is now rendered possible by the Constitution, which permits the people to establish their domicile wherever they wish. The fires in the congested quarters seem to destroy more buildings than the people erect. Various signs point toward an approaching "building boom" in Constantinople. There exists a strong demand for apartment houses, office buildings, and warehouses equipped with modern conveniences. Already many new buildings are planned. Five structures at Robert College, a new hotel, and three or four large buildings for the American College for girls, are all in course of erection, mostly of reinforced concrete. Articles for house construction, including structural iron, builders' hardware, galvanised tin and asbestos roofing, lifts, plumbers' supplies, lavatory fittings, should find a market. A list of British commission agents established in Constantinople may be obtained by British firms on application to the Commercial Intelligence Branch of the Board of Trade, 73, Rasinghall-street, London, E.C.

LONDON COUNCILS.

Acton.—The Highways Committee have decided to repair Warple-way, Acton Vale, with "Durax" paving, and Cressfield road with tar macadam, and application is to be made to the Local Government Board for sanction to a loan of 900*l*. and 600*l*. respectively, the estimated cost of the work.

Barnet.—The Council have agreed, subject to the usual sanction, to purchase the Old Barnet brewery at a cost of 1,000*l*. as a site for new Council offices. The Surveyor has been instructed to prepare plans and specifications for the erection of a further twenty-two cottages in Totteridge lane. The following plans have been passed:—Mr. F. W. Hackforth Jones, J.P., three houses, Arkley; Edmonton Co-operative Society, Ltd., look-up shop and store, High-street.

Baling.—500*l*. is to be spent in adapting the premises, 35, Bond-street, for offices for the Electricity Undertaking.

Edmonton.—The Guardians have instructed their architect to prepare plans and specifications for the erection of three workshops for the industrial training of children in schools at an estimated cost of 900*l*.

Finchley.—The following plans have been passed:—Mr. C. W. Scott, three houses, Fairalan-road; Mr. E. Evans, fourteen houses, Fairalan-avenue; Mr. C. H. Talbot, alterations and additions to No. 93, High-street, North Finchley.—A proposal is before the Council to negotiate for a suitable site for an open-air swimming bath.

Hendon.—The following plans have been passed by the Rural District Council:—Alterations and additions, "Duck in Pond" public house, for Messrs. Benskins. Proposed petrol store, High street, Edgware, for the Gas Lighting Improvement Company.

Hornsey.—The result of negotiations between the Borough Council, the County Council, and the Board of Education, in regard to the erection of a new secondary school for girls at Stroud Green, is that plans of the site are to be submitted not later than December 31 next, and plans of the building not later than December, 1912; also that the buildings are to be ready for occupation by September, 1914. The following plans have been passed:—Six houses, Danvers-road, for Mr. H. East, Redstone-road; Hornsey; additions, Hornsey Cottage Hospital, Park-road, for Mr. G. Lothbridge, Draper's-gardens, E.C.; cinematograph theatre, Wightman road, Harringay, for the Estate Land & House Company, Weston-park, Hornsey.

Islington.—The tender of Wm. Griffiths & Co., Ltd., has been accepted at 5,860*l*. for paving the margins of the carriageways in part of Green lanes, Newington Green, and Mild may Park. Repairs are to be carried out to the road paving of the carriageway of Hornsey-road, at an estimated cost of 200*l*. The blocks required are to be obtained from Messrs. Thos. Gabriel & Sons, Commercial-road, S.E.

Richmond.—Plans have been passed as follows by the Town Council:—Additions, Grafton House, Kew-road, for Messrs. Brewer, Smith, & Brewer; alterations, "Duke's Head," public house, for Messrs. Nowell, Parr, & Kates; three houses, West Park-road, for Messrs. Boore & Parker.

Sutton.—The following plans have been passed by the Rural Council:—Rebuilding Baptist Chapel, Bedford; the Trustees, Four houses, Dawley-road, Harlington; Messrs. Newbold & Stevens. Three cottages, Lale ham; Mr. Simpson.

Wutford.—The tender of Messrs. W. King & Son has been accepted by the Urban Council for private street works to Whippendell-road and Sydney-road, at 518*l*. 15*s*. and 192*l*. 2*s*. respectively. The following plans have been passed: Mission hall, Upper Paddock-road, for Mr. A. P. Ibbott; conversion of house into shop, Banbury-street, for Mr. E. Clifford; additions, Coleman House, Clarendon-road, for Mr. T. Febardy; house, stable, etc., Holywell-road, for Mr. T. Simmons; alteration of premises, Loates-lane, for Messrs. Downer & Sons; motor garage, Whippendell-road, for Mr. J. Wheeler. A plan has been lodged for a shop in Queen's-road, for Mrs. Kempton. The Rural Council has passed the following plans:—Alterations and additions, Porters Park Golf Club for the managers; buildings, Caldecote Towers, for Miss Tanner.

Wimbledon.—The Borough Surveyor has been instructed to obtain quotations for paving with soft wood blocks that portion of Merton-road between Holy Trinity Church and St. Winefred's Church. Mount-road and High-bury-road are to be made up at an estimated cost of 833*l*. and 573*l*. respectively, by the Highways Department. Tenders are to be invited for making up Gladstone-road-mews, Lucien road, Gordondale-road, Crescent gardens, The Crescent (Section 1), and The Crescent (Section 2). Instructions have been given to the Borough Electrical Engineer to lay electricity supply mains and house services in seven roads in the urban district of Merton, and as when he considers necessary. He has further been instructed to proceed with the laying of mains and other works necessary for giving a supply of electricity to the Maldens and Coombe Urban District, as soon as possible after the Wimbledon Electric Lighting (Extension) Order, 1911, has been confirmed by Parliament, and the loan to meet the cost of the works has been sanctioned by the Local Government Board. The following plans have been passed:—Rev. Canon Scoles, additions to Ursuline Convent, the Downs; Rev. C. P. Fynes Clinton, additions to Cottenham park Schools, Pepys road.

OBITUARY.

Mr. W. I. Last.

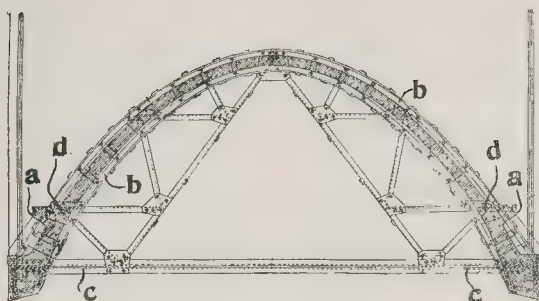
Mr. William Isaac Last, A.M.Inst.C.E., Science Director of the Victoria and Albert Museum, South Kensington, has just died at his residence in Onslow-crescent, London, S.W. Mr. Last was the eldest son of the late Isaac Glandfield Last, and was born at Dorchester in 1857. He was educated at Owens College, Manchester, and began work as a mechanical engineer in 1875. He became the senior Whitworth scholar in 1878, and was engaged in civil and mechanical work in England and South Africa till 1890, when he was appointed Keeper of the Machinery and Inventions Division of the South Kensington Museum and Senior Keeper in 1900. The deceased was at the time of his death an Associate Member of the Institute of Civil Engineers.

PATENTS.

APPLICATIONS PUBLISHED.*

- 19,380 of 1910.—Edward John Buckley: Dis-temper.
- 22,202 of 1910.—John Thomas Holl, John Holl, Alfred Holl, and James Holl: Cement or compound for cementing leather, wood, and the like, and for other purposes.
- 22,678 of 1910.—Hagop Agopian: Artesian wells.
- 24,072 of 1910.—Richard Henry Quine: Lavatory basins, bath basins, sinks, baths, and the like.
- 24,724 of 1910.—Walter Hawkes Cross: Door and gate latches.
- 26,530 of 1910.—James Alexander Mytton Watson: Folding frame work especially applicable for ladders, camp furniture, and the like.
- 678 of 1911.—William Zeehandelaar: Dis-charge valve mechanism for wash-hand basins, baths, and the like.
- 3,755 of 1911.—Theodore McKenna (A. J. Ellis, Incorporated): Hollow metal floors and the like.
- 5,857 of 1911.—Albert Henry Scherzer: Bascule or lift bridges.
- 6,113 of 1911.—Richard George Vaughan: Fasteners for windows, doors, boxes, and the like.
- 9,225 of 1911.—Cecil George McKellar: Water closet basins.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.



4,556 of 1910.

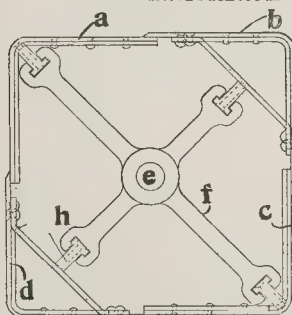
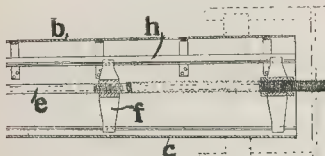
SELECTED PATENTS.

4,556 of 1910.—Stanislaw Rechinowski: Caissons.

This relates to caissons and consists in connecting the ferro-concrete lateral walls of a caisson by a system of ties and struts. The arched part between the projections *b* has a thickness which is less than that of the abutments below. Iron beams *c* connect these abutments and take the resultant of any inclined thrust on them. Angle-iron members *b* are embedded in the concrete to form a series of composite arched beams, and are connected by members *d* with their respective base members *c*.

5,500 of 1910.—Peter Burd Jagger: Moulding posts or pipes and casting floors in situ.

This relates to a collapsible core for use in the manufacture of hollow concrete objects, such as telegraph posts, pipes and hollow floors, and partitions which consists of overlapping sections *a*, *b*, *c*, *d*, corresponding to the internal contour of the object to be moulded, and carrying slide bars *h* engaging spiders *f* mounted on the threaded ends of sections of a central supporting shaft *e*. The

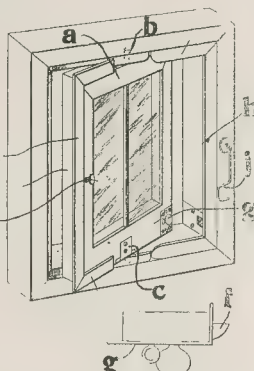


5,500 of 1910.

slide bars *h* are inclined to the shaft *e*, so that an endlong movement of the spider *f* draws the sections together throughout the length of the mould, the inner sections *a*, *c* being drawn inwards at a quicker rate than the outer sections *b*, *d*. In the construction illustrated, the endlong movement is produced by the engagement of a rotatable fixed abutment nut on the screwed end of the shaft *e* with a fixed abutment, such as the projecting sides of the mould box or the end of the core.

5,562 of 1910.—Francis Ernest Gausset Lahagan: Reversible windows.

This relates to reversible windows and consists in the provision of windows *a*, centrally pivoted on vertical pivots *b*, *c*, and fitted with weather strips *h*, and fastened in the closed position by a latch lock *g*, the bevelled portion of the catch *f* being inside, so that the window fastens automatically, and cannot be opened from outside. The window may be held in



5,662 of 1910.

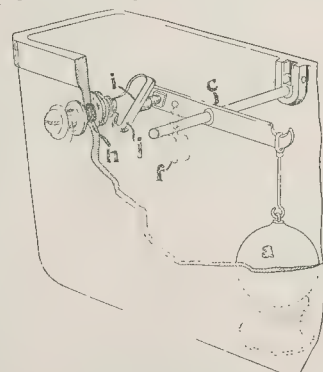
the reversed position by a hook *j* engaging with the knob *k*.

5,893 of 1910.—Herbert James Haskins: Chimney tops.

This relates to chimney tops which are formed with two or more lateral baffles, *s*, placed as to prevent wind from blowing directly into the shaft mouth. The bottoms of the opening incline downward from the shaft mouth, and the lower baffles are also inclined, the upper ones being horizontal. The baffles may be otherwise inclined, but in all cases their planes intersect imaginary lines drawn from the outer ends of the baffles to the opposite side of the shaft mouth.

6,554 of 1910. Thomas William Twyford: Water-valve preventers.

This relates to a valve in float-valve flushing cisterns, which is operated by an external pusher or slide, the inner end of which acts upon an inclined plane mounted on the valve



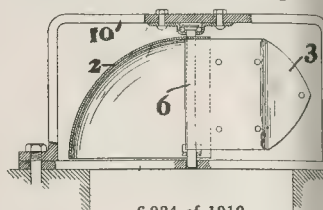
6,554 of 1910.

lever. The float valve *a* is suspended from the lever *c* and counterbalanced by a weight *f*. On the other end of the lever is fixed an inclined portion *j*. The piece *i* acting on this

is connected to the push-button, and is out of operative engagement by a spring arranged in the casing *h*.

6,924 of 1910.—Thomas Archer: Chimney tops.

This relates to chimney tops in which vane 3 and a half-dome 2 forming the



6,924 of 1910.

are arranged beneath a yoke or bridge. The axis 6 hangs in a ball bearing, and lower end works in a cross-bar.

SOME RECENT SALES OF PROPERTY AND ESTATE EXCHANGE REPORT.

July 8. By KNIGHT, FRANK, & RUTLEY.

Owston, Lancs.—Thornholmes farm, 119 a. 1 r. 34 p., f.

West Butterwick, Lincs.—Freehold farms, 397 acres, f.

July 11. By WARD & CHOWEN.

Tavistock, Milton Abbot, etc., Devon. Farms and accommodation lands, 6,377 acres, f. in lots) 3

July 14. By RENDELL & SAWDY.

Harberton, Devon.—Fletchercombe and Ethelridge farms, 111 a. 0 r. 37 p., f.

July 18.—By E. DOWNEY & SON.

Greenside, Northumberland.—Halls Hill farm, 245 acres, f.

July 19.—By FARMER, BROTHER, ELLIS, & CO.

Petersfield, Hants.—Petersfield estate, 263 acres, f. (in lots)

By EDWARDS, SON, & BIGWOOD.

Lea Marston, Warwick.—Hams Estate, 1,734 acres, f.

July 20. By RICHARDSON.

Polebrook, Northants.—Polebrook Lodge Farm, etc., 27 a. 1 r. 37 p., f.

Oundle, Northants.—Wakerley Lodge Farm, 74 a. 0 r. 20 p., f.

July 21. By J. HANNAFORD & SON.

Chawleigh, Devon.—The Portsmouth Estates, 1,321 acres, f.

By HOWKINS & SONS.

Floore, Northants.—Pasture and arable land, 125 a. 1 r. 29 p., f.

July 21. By KNIGHT, FRANK, & RUTLEY.

Stanley, Glos.—Outlying portions of Heath House Estate, 654 acres, f.

July 25.—By A. & H. MATFAR.

Taunton, Somerset.—Yea Estate, 331 acres, f.

By CLAWSON.

Cheshunt, Herts.—Bay Tree Farm, 54 acres, f. and c.

By KNIGHT, FRANK, & RUTLEY.

Worminghall, Warrington.—Worminghall and Thomley Estates, 2,030 acres, f.

July 26.—By KEMSLEY.

Rimford, Essex.—61, 64, and 65, Albert-rd., f., w.r. 54, 12s.

Stifford, Essex.—Ten cottages, ut. 24 yrs., g.r. 71, w.r. 150l. 16s.

By DICKINSON, RIGGALL, & DAVY.

North Cotes, Lincs.—Cottage and grass land, 49 acres, f.

Marshchapel, Lincs.—Close of arable, 5 acres, f.

By DILLET, SON, & READ.

Woodwalton, Hunts.—Elephant and Castle p.h., and 31 a. 1 r. 27 p., f.

Upwood, Hunts.—Fen land, 8 a. 2 r. 30 p., f.

By ARTHUR SINGLE.

Upton Park—5 and 8, Waterloo-rd., f., w.r. 46l. 18s.

By RUSHWORTH & BROWN.

Syrington. 1 to 6, St. Leonard's-sq., f., w.r. 98l. 16s.

Leightonstone, Melton-rd., g.r. rents 6l. 13s., reversion in 83 yrs.

By THURGOOD & MARTIN.

Mauld-valle—7, Clifton-rd. (s.), ut. 63 yrs., g.r. 27l. 12s., y.r. 120l.

July 27.—By ALEX. H. TURNER & CO.

Womersley, Surrey.—Upper House-ct. and 113 acres, f.

Hyde Park—43, South-st., ut. 74 yrs., g.r. 100l. p.

Marlyebone—23, Devonshire mews East, ut. 11 yrs., g.r. 15l., y.r. 50l.

By STANLEY J. BARNES.

Battersea. 1, Motney-rd., ut. 74 yrs., g.r. 7l. e.r. 34l.

By JOHN H. BULMER.

Rotherhithe. 31 and 33, Irwell-pl., f., w.r. 39l. 8s.

By CAMERONS.

Willenden—20, Churchill-rd., ut. 82 yrs., g.r. 6l., w.r. 49l. 8s.

By GLASIER & SONS.

Hield, Sussex.—Hield Wood Farm, etc., 14 a. 2 r. 10 p., f.

By MARK LITTLE & SON.

Bromley. 54, Bruce-rd., ut. 52 yrs., g.r. 4l. 1s., w.r. 33l. 16s.

RECENT SALES.—Continued on page 176.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvi.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

AUGUST 15.—Borne.—MONUMENT.—Designs for erection of a monument at Borne to celebrate foundation of the International Telegraph Union. Conditions may be seen in the library of the Royal Institute of British Architects.

AUGUST 4.—Newcastle-on-Tyne.—The Education Committee invite from architects designs for a new school for a senior school and a junior mixed school, each to accommodate 365 children. Assessor nominating R.I.B.A.

AUGUST 9.—Ponteprat.—SWIMMING-BATH.—Open to architects of the West Riding of Yorkshire. Particulars from the Borough Engineer.

AUGUST 12-25.—Athens.—COURT OF JUSTICE.—International competition is instituted by the Ministry of the Interior, for the erection of a building, to cost 150,000 l. The Official site may be seen at the Library of the S.A.

AUGUST 16.—Manchester.—LIBRARY AND GALLERIES.—Limited to the ten selected designers in the first competition. See issue of August 13, 1910.

AUGUST 16.—Barnesley.—EXTENSION OF THE BARNESLEY T.C. invite drawings for extension of Public Baths. Three designs are offered. See advertisement in this issue for further particulars.

AUGUST 30.—Holland.—STAINED GLASS WINDOWS.—Designs are invited for a stained glass window to be erected in the University at Leiden. See advertisement in issue of June 9 for further particulars.

AUGUST 31.—Marylebone.—NEW MUNICIPAL BUILDINGS.—Premiums of 100l., 75l., 50l. The plan is to be erected in the University at Leiden. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1.—City of St. Petersburg.—CONTEST TO ALEXANDER II.—Particulars in our issue of August 13, 1910.

DECEMBER 29.—Glasgow.—DESIGN FOR A POST OFFICE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 50l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

DECEMBER 31, 1912.—Australia.—DESIGNS FOR A FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital in the advertisement in issue of July 7 for further particulars.

DECEMBER 31, 1912.—A plan for the extension of the City of Newcastle-on-Tyne.—A School of Architecture is to be held in the city. Particulars at the Education Offices, Northumberland.

NO DATE.—Nottingham.—BAPTIST CHURCH PREMISES.—Limited to Nottingham architects. Particulars from Messrs. Rorke & Jackson, 10, King-street, Nottingham.

NO DATE.—Barnesley.—EXTENSIONS. Assessor, Mr. Alex. Graham, F.R.I.B.A.

NO DATE.—Salford.—Extension of office accommodation on workhouse site at Eccles New. Premiums 20l. and 10l. Particulars from Board of Guardians, Salford. Limited to architects practising in Salford and district only.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or names of those willing to submit tenders, may be sent in.

AUGUST 12.—Capel.—IMPROVEMENTS, ETC.—Improvements to heating, etc., at the school. Particulars by the Committee's Architect, Mr. J. H. Robinson, Capel House, Capel, Somerset, seen at the office of Mr. W. H. Tompkins, Capel House, Capel, Somerset.

AUGUST 12.—Starborton.—ADDITIONS.—Alterations to the Starborton School, Skipton, Mr. B. Tennant, Starborton, Skipton.

AUGUST 12.—Winchcomb.—REPAIRS.—For repairs to the Winchcomb. Specifications at the house, Winchcomb.

AUGUST 14.—Aberdeen.—STRAIDING, ETC.—Erection of a new strading on the farm of Nether, Aberdeen, and two small cottages to accommodate the farm servants. Plans and specifications seen, and quantities from Messrs.

D. & J. R. M'Millan, architects, 105, Crown-street, Aberdeen.

AUGUST 14.—Aberdeen.—RAILINGS, ETC.—Erection of iron railings and Bostwick gates at the Council school. Specifications, prepared by the Committee's Architect, Mr. W. H. Robinson, Capel House, Westminster, with Mr. W. J. Spicer, 19, Bank-street, Ashford, Kent.

AUGUST 14.—Burton-on-Trent.—HOLDINGS.—Four Small Holdings, Roslinton. Drawings seen, and quantities, on deposit of 1l. 1s., from Mr. Maurice Hunter, A.M.Inst.C.E., Surveyor, Bridge-street, Belper.

AUGUST 14.—Churwell.—STABLES.—Erection of new stables in William-street, Churwell. Plans seen, and quantities from Mr. W. Schofield, Secretary, Churwell Industrial Co-operative Society, Ltd.

AUGUST 14.—Devon.—HOUSES.—For erection of four houses at Wilcombe. Plans and specification with Mr. G. Beavis, architect, 4, Johnson's-place, Exmouth.

AUGUST 14.—Scotland.—STRAIDING, ETC.—For new strading, and alteration of dwelling-house at Greencraig Farm, Letterfourie Estate. Plans and specifications with Mr. W. Hendry, architect, 10, West Church-street, Buckie.

AUGUST 15.—Langwathby.—SCHOOLS.—Alterations to schools. Quantities from Mr. J. H. Marindale, F.R.I.B.A., architect, Eaglesfield Abbey Rooms, Castle-street, Carlisle.

AUGUST 15.—London.—ALTERATIONS.—For alterations to Stoke Newington Post-office. Drawings, specification, and conditions with Mr. Rutherford, H.M. Office of Works, Carlisle-place, Westminster, S.W. Quantities, on deposit of 1l. 1s., from H.M. Office of Works, etc., Storey's-gate, S.W.

AUGUST 15.—London.—EXTENSION.—For extension of dining-room at the General Post Office, North, 10, 11, & 12, drawings, specification, and conditions with Mr. J. Rutherford, H.M. Office of Works, Carlisle-place, Westminster, S.W. Quantities, on deposit of 1l. 1s., from H.M. Office of Works, etc., Storey's-gate, S.W.

AUGUST 15.—Nottingham.—TAINALS, ETC.—Erection of latrine urinals, horse troughs, ablation benches, and cooks' shelter, Quartermaster, South Notts Hussars, Park-row, Nottingham.

AUGUST 15.—Orsett.—INFIRMARY.—The Guardians of the Orsett Union invite tenders for new infirmary. See advertisement in this issue for further particulars.

AUGUST 16.—Dewsbury.—CHURCH.—For the restoration of the Woodkirk Church. Plans and specifications seen, and information from Messrs. Hoare & Wheeler, architects, 11A, Orchard-street, Portman-square, London, W. Deposit of 2l. 2s. for quantities.

AUGUST 16.—Saint Cleer.—ROOF HOUSE, ETC.—Erection of a roof house, new roofs, etc., at Lower Trewhirick, Saint Cleer. Plans and specification from Mr. R. A. Courtney, Church-street, Liskeard.

AUGUST 17.—Aldershot.—BARBERSHOP, ETC.—For rebuilding barbershop and alterations to premises, High-street. Plans and specifications seen, and information from Messrs. Friend & Lloyd, architects, Aldershot.

AUGUST 17.—Droghda.—SHOPS, ETC.—Erection of shops, new offices, etc. Deposit of 1l. 1s. to John B. Thornley, architect, Market-street, Droghda.

AUGUST 18.—Aylesbury.—BUILDING.—Erection of a domestic science building. Plans and specifications with Mr. Fred Taylor, architect, Bourton-street, Aylesbury.

AUGUST 18.—Birkby.—RESIDENCE.—Erection of a villa residence. Plans seen, and quantities from Mr. T. Barry, architect and surveyor, 3, Market-place, Huddersfield.

AUGUST 18.—Wakefield.—PARTITIONS.—Erection of partitions at the Otley Infirmary. Plans and specifications seen, and information from Messrs. Hoare & Wheeler, architects, 11A, Orchard-street, Portman-square, London, W. Deposit of 2l. 2s. for quantities.

AUGUST 18.—Droghda.—HOSPITAL.—Erection of an isolation hospital. Plans seen, and quantities, on deposit of 1l. 1s., from Mr. A. Bowes, Surveyor, Town Hall, Droghda.

AUGUST 21.—Coventry.—MORTUARY, ETC.—Erection of a mortuary and extension of the laundry at the Union Workhouse. Particulars from Mr. F. Tinkler, F.R.I.B.A., High-street-chambers, Coventry.

AUGUST 21.—Fochriw.—HOUSES.—Erection of seven dwelling-houses. Plans and specifications with Mr. Joseph Payne, 7, Railway-terrace, Fochriw.

AUGUST 21.—Treorchy.—SCHOOL, ETC.—Erection of a Congregational chapel and school. Plans and specification seen, and quantities from Mr. W. Beddoe Rees, architect, 3, Dumfriess-place, Cardiff.

AUGUST 22.—Mansfield.—POST-OFFICE.—Erection of a new post-office. Drawings, specification, and conditions and contract with the Postmaster, Mansfield. Quantities, on deposit of 1l. 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

AUGUST 23.—Barnet.—CLEAN'S OFFICES.—The Guardians of the Barnet Union invite tenders for erection of Clerk's offices at Wellhouse-lane. See advertisement in this issue for further particulars.

AUGUST 23.—Oldham.—WORKS.—Accommodation for sane epileptics. Plans and specifications and quantities from Mr. T. W. Jenkins, 35, Queen-street, Oldham.

AUGUST 23.—Romford.—SCHOOL.—The Essex Education Committee (Romford District Sub-committee) invite tenders for new Council school. See advertisement in this issue for further particulars.

AUGUST 24.—Alcester.—ALTERATIONS, ETC.—Extensions and alterations to the premises of Alcester Co-operative Industrial Society. Plans and specifications from Mr. John Johnson, architect, 21, Unicorn-hill, Redditch.

AUGUST 24.—London.—CHURCH.—Erection of Methodist church, lecture hall, etc., in Lymington-road, Upper Tooting, S.W. Plans, specifications, etc., with Mr. A. H. Edwards, Secretary, 11, Fox-bourne-road, Upper Tooting, S.W.

AUGUST 25.—Birmingham.—EXTENSION OF PARCEL OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of and alterations to Parcel Office. See advertisement in this issue for further particulars.

AUGUST 26.—Brighton.—GRAMMAR SCHOOL.—The Governors of the Brighton, Hove, and Sussex Grammar School invite tenders for erection of a grammar school at junction of Old Shoreham and Dyke roads, Brighton. See advertisement in this issue for further particulars.

AUGUST 26.—Eccles.—HOUSES.—Erection of three houses. Corporation-road, Eccles. Quantities from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles, on deposit of 2l. 2s.

AUGUST 28.—Aberhill.—SCHOOL.—For proposed new school, Aberhill, Methil. Quantities and specifications, on deposit of 1l. 1s., from Mr. A. Watson Taylor, Clerk to the School Board, Auchtermuchty.

AUGUST 30.—London, S.W.—STEWART'S HOUSE.—The Metropolitan Asylums Board invite tenders for a house for the Stewart at Western Fever Hospital, Seagrave-road, Fulham, S.W. See advertisement in this issue for further particulars.

SEPTEMBER 5.—Sheffield.—BUILDINGS.—Erection of buildings in Charlotte-street and Portobello-street. Drawings and specifications seen, and quantities from Messrs. Gibbs, Flockton, & Teather, architects, 15, St. James's, Sheffield.

SEPTEMBER 6.—Birmingham.—HOMES.—Erection of two homes for infants at the Cottage Homes, Marston Green. Quantities, on deposit of 2l., from Messrs. C. Whitwell & Son, architects, 3, Newhall-street, Birmingham.

SEPTEMBER 7.—Richmond.—HOME.—Erection of a receiving home for children at Parkshot. Drawings and specifications with the architect, Mr. Edward J. Partridge, F.S.I., M.S.A., of Bank-chambers, Richmond. Quantities on deposit of 5l.

SEPTEMBER 9.—Clinton-on-Sea.—SLIPWAYS.—Construction of two jetties and slipways along the pier. Plan and specification with the Engineer and Architect, Mr. W. T. Douglas, M.Inst.C.E., 15, Victoria-street, Westminster, London, S.W. Quantities on deposit of 1l.

NO DATE.—Coventry.—EXTENSIONS.—For extensions to the Triumph Works, Priory-street. Quantities from architect, Mr. T. R. J. Meakin, M.S.A., 11, Warwick-street, Coventry.

NO DATE.—Hawick.—WORKS.—Construction of roof steel works, and boiler setting and chimney stack. Quantities from Mr. Alexander Inglis, architect and surveyor, 12, Bridge-street, Hawick.

NO DATE.—Leeds.—ADDITIONS.—For additions to New Wortley Liberal Club. Mr. F. W. Rhodes, M.S.A., architect, Upper Wortley, Leeds.

NO DATE.—Merioneth.—ADDITIONS.—Alterations and additions to Cwmymyrnach Council School. Plans, specification, and particulars from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth, S.O.

NO DATE.—Middlesex.—VILLAS.—Erection of two semi-detached villas in Acklam-lane, Messrs. Moore & Archibald, architects, 27, Albert-road, Middlesex.

NO DATE.—Romford.—SCHOOL.—Erection of a new Council school. Deposit of 2l. 2s. to the architect Mr. A. S. R. Ley, 214, Bishopsgate, London, E.C., before August 23.

ENGINEERING, IRON, AND STEEL.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 12. **Callan, Ireland.**—TANKS.—Erection of two concrete storage water tanks. Plans and specification with Mr. M. J. Lynch, Clerk, Workhouse, Callan.

AUGUST 14. **Wrexham.**—HEATING.—Reconstruction and improvement of the heating apparatus in the infants' and girls' departments of the Victoria Council School. Plans and specifications seen, and form of tender from Mr. John England, Borough Engineer, Willow Depot, Wrexham.

AUGUST 21. **Little Mill.**—RESERVOIR, ETC.—Construction of a reservoir and laying main service pipes at the Reformatory School, Little Mill, Mon. Plan and specification with Messrs. Lougher & Co., Bank-chambers, Pontypool.

AUGUST 24. **Torquay.**—RESERVOIRS.—For covering four service reservoirs. Drawings seen and specification and quantities, on deposit of 81. 8s. from Mr. Samuel C. Chapman, M.Inst.C.E., Water Engineer, Town Hall-chambers, Torquay.

AUGUST 31. **Wanstead.**—SEWER.—Construction of detritus and septic tanks, engine-house, office and store, storm-water tanks, etc. Plans and specifications seen, and form of tender from the engineers, Messrs. Wilcox, Raikes, & Reed, of 63, Temple-row, Birmingham. Deposit of 51. 5s. SEPTEMBER 4. **Swinton.**—BRIDGES.—Reconstruction of six bridges on the Swinton and Knottingham Joint Railway. Plans seen, and specification and quantities from Mr. H. J. Rudyard, District Engineer, North-Eastern Railway, Scarborough Bridge, York.

SEPTEMBER 6. **Hull.**—BRIDGES, ETC.—The North-Eastern Railway invite tenders for the construction of three bridges and the diversion of the Marfleet drain at Southcoates. Plans seen, and specification and quantities from Mr. C. F. Bengough, the Company's Engineer, York.

SEPTEMBER 13. **Ellesmere.**—TOWER.—Erection of a ferro-concrete water tower. Plan and conditions from Mr. Isaac Carr, M.Inst.C.E., Farnworth, Widnes.

FURNITURE, PAINTING, MATERIALS, ETC.

AUGUST 12. **Kirkcaldy.**—PAINTING.—For painting girders of the harbour branch railway bridge. Specification from the Burgh Surveyor.

AUGUST 14. **Braintree.**—PAINTING.—For painting, etc., at the County High School. Specifications with Mr. J. Glaister, Clerk to the Committee, County High School, Braintree.

AUGUST 14. **Hastings.**—PAINTING.—For painting lodges, chapels, etc., at the Borough Cemetery. Specification from the Borough Engineer, Mr. P. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

AUGUST 15. **Chelmsford.**—PAINTING.—For painting at the County laboratories. Specification from the County Architect, Mr. F. Whitmore, 73, Duke-street, Chelmsford.

AUGUST 16. **Newcastle-on-Tyne.**—PAINTING.—For painting the buildings of the Floating Hospital. Specifications from Mr. R. S. Holmes, Caledonian-buildings, 145, Pilgrim-street, Newcastle-on-Tyne.

AUGUST 16. **Renfrew.**—PAINTING.—For execution of painter work at Dykebar Asylum, near Paisley. Specification and schedule, on deposit of 11. 1s. from Mr. J. Caldwell, Clerk, County-buildings, Paisley.

AUGUST 17. **Kent.**—REPAIRS, ETC.—For painting and repairs at the Bethesda Council School. Specifications by the architect, Mr. W. H. Robinson, Caxton House, Westminster, with Mr. A. R. Cook, Snettisham House, Bethesda, Ashford, Kent.

AUGUST 19. **Blairgowrie.**—PAINTING.—For painting the steel and ironwork of Caputh Bridge. Specification from Mr. G. Wylie, Road Surveyor, Blairgowrie, Scotland.

AUGUST 21. **London.**—PAINTING, ETC.—For painting and decorating at the West Islington Public Library, Thornhill-square, N. Specification and form of tender from the Borough Engineer, Mr. J. Patten Barber, at the Town Hall, Upper-street, N. Deposit of 11. 1s.

AUGUST 24. **Hastings.**—PAINTING.—For painting at the Workhouse. Specifications from the architects, Messrs. A. W. Jeffery & Son, 18, Have-lock-road, Hastings.

AUGUST 24. **London, E.**—PAINTING AND REPAIRING.—The Stepney Guardians invite tenders for exterior painting and repairing works, at their Workhouse, 19, Leonard-street, Bromley-by-Bow, E. See advertisement in this issue for further particulars.

AUGUST 24. **Barrow-in-Furness.**—PAINTING.—For painting the wood and ironwork at the electricity works. Specification from the Borough Electrical Engineer, Electricity Works.

ROADS, SANITARY AND WATER WORKS.

AUGUST 14. **Ashton-in-Makerfield.**—SEWERAGE.—Construction of a public sewer. Plans seen, and specification and quantities, on deposit of 10s. 6d. from Mr. T. Burgess, Surveyor, Council Offices, Ashton-in-Makerfield.

AUGUST 14. **Dunfermline.**—SEWERAGE.—For laying cast-iron pipe outfall sewer. Plans and speci-

fications seen, and quantities from Mr. Thomson, City Engineer, 31, Commercial, Dundee.

AUGUST 14. **Shiremoor.**—STREETS.—For works, quantities, specifications, and plans from Mr. J. R. McMillen, Surveyor, Council Offices, Shiremoor, Newcastle-on-Tyne.

AUGUST 14. **Wrexham.**—SEWER.—For re-laying sewer. Plans and specification seen, and quantities from Mr. J. England, Borough Engineer, Willow Depot, Wrexham.

AUGUST 15. **Stockton-on-Tees.**—SEWER.—For levelling, paving, and channelling of streets. Plans and specification from the Surveyor, Mr. J. Rodham, Finkle-street, Stockton-on-Tees.

AUGUST 22. **Neath.**—SEWERAGE.—Construction of stoneware socket pipe sewers. Drawing specification seen, and quantities, on deposit of 21. 2s. from Mr. W. E. C. Thomas, A.M.Inst.C.E., Engineer and Surveyor, Orchard-street, Neath.

AUGUST 22. **Pontlanfraith.**—ROAD.—For construction of the Cwmfelinfach new road. Plans seen, and specification and quantities from the Surveyor, Mr. E. Watkin Edwards, Office, Pontlanfraith, Wales. Deposit of 11. 1s.

AUGUST 24. **Luton.**—STREETS.—For street improvements. Plans and specifications with the Borough Engineer, Town Hall, Luton.

AUGUST 24. **Burnley.**—SEWER.—Supply granite sets. Forms of tender from Mr. Pritchard, Surveyor, 18, Nicholas-street, Burnley.

AUGUST 31. **Wantage.**—SEWAGE.—Laying stoneware and cast-iron outfall sewers, and construction of a purification works, and the construction of an approach road. Drawings and quantities seen, and quantities from Mr. William Harris, Engineer and Surveyor, Challow, Wantage, on deposit of 21. 2s.

SEPTEMBER 4. **Bromley.**—MATERIALS.—Supply of road materials. Mr. E. Harris, Clerk, Council Offices, Park House, Bromley, Kent.

SEPTEMBER 4. **Coalville.**—ROAD.—For making-up of Ashby-road. Plans seen, specification and quantities from Mr. Leon Baldwin, A.M.Inst.C.E., Surveyor, Municipal Offices, Coalville. Deposit of 11. 1s.

SEPTEMBER 12. **Bedford.**—GRANITE.—Supply about 2,800 tons of broken granite. Particulars from Mr. Greenshields, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Bedford.

NO DATE. **Merioneth.**—DRAINAGE.—For drainage and other work at the infants' C. school, Dolgelys. Plans, specification, and particulars from the County Architects, A. Deakin & Howard Jones, M.S.A., Plas Borth, S.O.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be made to.
*DIRECTOR OF GOVERNMENT BUILDING WORKS	Govt. of New South Wales	1,000l. per annum	Aug. 10
*INSTRUCTOR IN VALUATION TABLES & BOOKKEEPING	The Polytechnic	See advertisement in this issue	Nov. 1
*ASSISTANT CIVIL ENGINEER	Admiralty	200l. per annum	No date

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*MATERIALS OF NO. 2 AND 4, PIMLICO-ROAD, ETC. Sale by tender	White, Berry, & Taylor	Aug. 11
*TILES, FITTINGS, ETC., OF "QUEEN'S HEAD," PUTNEY EDGE, ED.	Borne & Co.	Aug. 11
*FREEHOLD PROPERTY, HAMTS.—Dolphin Hotel, Southampton	James Harris & Son	Sept. 1

RECENT SALES.—Continued from page 174.

By C. C. & T. MOORE.			
Mile End—25 and 27, Lockhart-st., u.t. 51 yrs., g.r. 101, w.r. 721. 18s.	4310		
138, 140, and 142, Bow Common-lane, u.t. 51 yrs., g.r. 184, w.r. 1303.	545		
8, 10, and 12, Portman-pl., f., w.r. 291. 12s. 6d.	470		
20, Ashcroft-rd., u.t. 32 yrs., g.r. 41, w.r. 391.	180		
32, 34, and 36, Leathersdale-st., u.t. 121 yrs., g.r. 2, w.r. 1111. 10s.	230		
28, 27, 29, and 31, Carlton-rd., u.t. 144 yrs., g.r. 121, w.r. 1444.	325		
Linchhouse—4 and 5, Farnham-st., 353 yrs., g.r. 71, w.r. 201. 12s.	230		
Poplar, 34, 36, 37, and 38, Zetland-st., u.t. 51 yrs., g.r. 181, w.r. 1398.	635		
1 and 3, Spay-st., 51 yrs., g.r. 31, w.r. 651.	315		
28 and 30, Sturry-st., f., w.r. 54. 12s.	185		
Stratford—11, Farland rd., u.t. 77 yrs., g.r. 21. 10s., w.r. 331. 10s.	235		
30, Mathews Park-rd., u.t. 77 yrs., g.r. 31, w.r. 331. 10s.	170		
Hackney, 18 and 19, Spence-rd., and 1 g.r. 204, u.t. 23 yrs., g.r. 24, w.r. 701. 8s.	440		
Clayton—62, Burton-rd., u.t. 62 yrs., g.r. 41. 10s., g.r. 311. 4s.	200		
Bow—15, Lawrence-rd., u.t. 354 yrs., g.r. 41. 10s., w.r. 411. 12s.	190		
43, Orwell-rd., u.t. 63 yrs., g.r. 41, w.r. 311. 4s.	115		
Kilburn—157, 159, 161, and 163, Brompton-village, u.t. 84 yrs., g.r. 401, w.r. 2001.	880		
By LEWIS & SPAIN.			
Brighton—42, Temple-st., f., p.	450		
By BRASSER & SONS.			
Edgware-rd., 10, 183(a), u.t. 81 yrs., g.r. 61. 6s., u.r. 1301.	470		
New Cross—42, Erlanger-rd., u.t. 57 yrs., g.r. 51, g.r. 421.	420		
Huggerston—66, and 68, Angrave-st., u.t. 271 yrs., g.r. 61, w.r. 681. 18s.	6195		
Leighton—37, St. Peter-st., u.t. 34 yrs., g.r. 31, w.r. 401.	160		
Kentish Town—94, Iselp-st., u.t. 38 yrs., g.r. 31, w.r. 391.	175		
Peckham—29 and 31, St. Marys-rd., u.t. 26 yrs., g.r. 151, y. and v.r. 881. 12s.	190		
By MORRIS, MARSHALL, & POOLE.			
Llandiloos, Montgomery—Glynne and Llanwog Estates, 3,390 acres, f.	35,615		
By J. KITTY & SON.			
Tintagel, Cornwall—Wharfedale Estate, 2,300 acres, f.	16,212		
July 28.—By PERCY W. CLARKE.			
Leyton, 10, 12, and 14, Stewart-rd., f., w.r. 851. 16s.	575		
Chelsea—13, Gunter-g., u.t. 43 yrs., g.r. 51, g.r. 301.	310		
Willesden—1 to 9 (odd), Oldfield-rd., u.t. 88 yrs., g.r. 271. 10s., w.r. 1691.	570		
11 to 17 (odd), Oldfield-rd., u.t. 88 yrs., g.r. 281, w.r. 1281. 4s.	470		
East Ham—17, 19, 21, and 23, Colston-st., u.t. 84 yrs., g.r. 161. 16s., w.r. 1141. 8s.	445		
Sydenham—1 and 3, King Edward's-par., u.t. 90 yrs., g.r. 221. 10s., f. and y.r. 491.	285		
By FORSTER & CRANFIELD.			
Stoke Newington—Drayton-pk., f.g. rents 141, reversion in 65 yrs.	315		
Gillespie-rd., f.g.r. 101, reversion in 66 yrs.	230		
Wandsworth Common—Bollingsbroke-g., f.g.r. 81. 10s., reversion in 66 yrs.	160		
By W. R. HALEY.			
Barnsbury—5, Ellington-sh., f.y.r. 401.	420		
Holloway—40, Hollingsworth-st., u.t. 32 yrs., g.r. 71, y.r. 521.	150		
By HUSSEY, WALCOTT, & CO.			
Bayswater—16, Chapstow-pl., f., y.r. 601.	160		
77, Westbourne Park-rd., u.t. 38 yrs., g.r. 121, y.r. 601.	175		
4 and 34, Alexander-st., u.t. 38 yrs., g.r. 181, y.r. 1001.	190		
3, Durham-g., u.t. 38 yrs., g.r. 101, p.	16,212		
By WRIGHT, DIXON, & WINDLER.			
Funchley, 12, 13, and 14, Salisbury-ter., f., w.r. 781.	35,615		
Long-lane, Penrith, and plot of land, f., y.r. 381.	16,212		
Everleigh-sh., two plots of land, f.	16,212		
By REYNOLD & SAWYER.			
Buckfastleigh East, Devon—Forder and Scorrion Farms, 208 a. 3 r. 16 p., f.	575		
By ARTHUR BUTTER, SONS, & CO.			
Bury St. Edmund's, Suffolk, 32, Horrington rd., 110, Forham-rd., f.	310		
By HUNT & PEDDAR.			
Botesdale, Suffolk—Abbot's Hall Farm, 163 acres, f.	470		
By J. HANNAPOLE & SON.			
Chinmleigh, Devon—Agricultural estate, 598 acres, f.	285		
July 29.—By SAMPSON, SURFORD & SONS.			
Burnham Deepdale, Norfolk—Burnham Deepdale and Sussex Farms, 2,016 acres, f.	315		
By H. W. & C. SPELMAN.			
Kirby Cane, Norfolk—Letchmere Farm, 138 a. 1 r. 10 p., f.	230		
Thorpe-next-Norwich, Norfolk—6 and 7, Brooklyn-ter., f.	150		

ENGLISH SHEET GLASS IN CRATES OF

STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds.....	24d.	26 oz. fourths.....	34d.
" " fourths.....	14d.	32 oz. thirds.....	34d.
21 oz. thirds.....	34d.	" " fourths.....	44d.
" " fourths.....	24d.	Fitted Sheet, 15 oz. 34d.	
23 oz. thirds.....	44d.	" " 21 oz. 44d.	

ENGLISH ROLLED PLATE IN CRATES OF

STOCK SIZES.*

Per Ft., Delivered.

Hartley's.....	21d.	Figured Rolled, Ox-	
" ".....	24d.	anic Arctic Muffled,	
" ".....	24d.	and Rolled Cathe-	
" ".....	34d.	dral, white.....	34d.
" ".....	5d.	Ditto, tinted.....	5d.

* Not less than three crates.

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes.....	per gallon	0 3 7
" " " in barrels.....		0 3 8
" " " in drums.....		0 3 10
Boiled, " " in barrels.....		0 4 1
" " " in drums.....		0 3 3
Turpentine in barrels.....		0 3 5
" " in drums.....		0 3 5
Genuine Ground English White Lead, per ton		20 0 0
Red Lead, Dry.....		0 11 0
Best Linseed Oil Putty.....	per cwt.	1 12 0
Stockholm Tar.....	per barrel	1 12 0

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish.....	£ s. d.
Pale Copal Oak.....	0 8 0
Superfine Pale Elastic Oak.....	0 10 6
Superfine Pale Elastic Oak.....	0 12 6
Superfine Hard-drying Oak, for seats of Churches.....	0 10 0
Fine Elastic Carriage.....	0 14 6
Superfine Pale Elastic Carriage.....	0 16 0
Fine Pale Maple.....	0 15 0
Finest Pale Durable Copal.....	0 18 0
Extra Pale French Oil.....	1 1 0
Eggshell Flaking Varnish.....	0 18 0
White Pale Enamel.....	1 4 0
Extra Pale Paper.....	0 12 0
Best Japan Gold Size.....	0 10 6
Best Black Japan.....	0 16 0
Oak and Mahogany Stain.....	0 9 0
Brunswick Black.....	0 8 0
Berlin Black.....	0 16 0
Knotting.....	0 10 9
French and Brush Polish.....	0 10 6

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this. Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday, [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100, unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

ASLACTON (Norfolk).—For alterations and improvements at Aslacton School:—
E. J. Smith, Bunwell..... £295

BRIDGETOWN.—For erection of elementary school with outbuildings. Messrs. Bailey & McCommal, architects, Bridge-street, Walsall:—
C. Horton..... £2,870 0
W. Kendrick..... £2,535 0

J. Smith..... 2,825 0
Gough & Son..... 2,460 0
A. Davies..... 2,855 10
W. Roe..... 2,468 0
J. Reynolds..... 2,647 0
Mr. Dorset..... 2,444 0
F. Epaley..... 2,647 0
Guest & Son..... 2,419 0
J. & P. Wooton..... 2,388 17
S. Wooton..... 2,397 0
M. Round..... 2,375 0
Speake & Son..... 2,389 0
W. Wistance..... 2,355 0

DORCHESTER. For erection of a bridge over the River Hooke. Mr. F. T. Maltby, engineer, South-street, Dorchester:—
W. T. Cooper..... £178
E. Legg..... £105
A. E. Pichett..... 125
J. Legg, Gt. Toller, Dorchester*..... 98

HALIFAX.—For erection of a house and open cart shed at Stainland, for Mr. Thos. Brown. Mr. L. Coates, A.R.I.B.A., architect, 10, Central-street, Halifax:—
Masons: W. H. & B. Priestley, Stainland, near Halifax*..... £378 15 6
Joiners: W. Ratcliffe & Sons, Claremont, Halifax*.....
Plumber and Glazier: J. H. Spencer, Stainland*.....
Slaters, Plasterers, and Painters: S. Collins & Sons, Stainland*.....

IPSWICH.—For painting at the mental hospital. Mr. E. Buckham, Borough Surveyor, Town Hall, Ipswich:—
W. Kenney..... £135 0 0
A. Stearn & Son..... £74 9 0
W. G. Fink & Co. 79 18 6
Crisp & Smith..... 72 10 0
A. C. Harding..... 74 17 0
C. A. Green..... 63 15 0
[All of Ipswich.]

JERSEY. For construction of a parish hall. Mr. C. G. Bowles, M.S.A., architect, Halkett-place:—
J. E. Malnard..... £2,498
C. J. Le Quenne*..... £2,235
A. P. Le Moine..... 2,369

SELBY.—For construction of eight cottages at depot. Mr. Bruce Gray, Borough Engineer:
T. Reed..... £1,500 0 0
J. H. Carr..... £1,390 0 0
T. Foster..... 1,455 11 0
Lister, Brooke, & Co., Brig-
H. Foster..... 1,389 15 10
J. Key..... 1,364 16 0
house*..... 1,355

SMALBURGH.—For erection of six cottages, Horning and six in Haysburgh, for the Small Rural District Council:—
Sparkes & Latten, 151, College-road, Norwich*..... £1,390
† For twelve cottages.

TIBENHAM.—For proposed enlargement school:—
Tash & Langley, King's Lynn..... £242 15

TIVERTON.—For widening bridge over the R. Lowman. Mr. J. Siddalls, Borough Surveyor, Tiverton:—
G. Pollard & Co. £430 0
Fothergill Bros., Exeter*..... 396 10

WAKEFIELD.—For pointing the tower of the Town Hall. Mr. J. P. Wakeford, City Surveyor, Town E Wakefield:—
W. Thickett, Oaset, Yorks..... £80

WELLINGBOROUGH.—For the erection of convalescents' school, Wellingborough. Messrs. Tall, By & Fisher, architects, Wellingborough:—
W. Stevens..... £3,130 10
E. J. Fisher..... £2,300 0
H. Martin, Ltd., 3, 680
W. Packwood..... 2,869 0
S. Brown & Son, Ltd., 2, 3
Haeckley Bros., 2, 497 0
O. P. Drever..... 2, 3
C. Andrews..... 2, 475 0
R. Marriott, Bush-
W. Goodman..... 2, 395 0
den*..... 2, 3

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited (Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams
16, Craven-street, Strand.

Asphalts.—The Seyssel and Metallic L. Asphalt Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and m. rooms, granaries, tun-rooms, and terra Asphalt Contractors to the Forth Bridge

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

PILKINGTON & CO.
(ESTABLISHED 1835),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.
Polonceau Asphalte

PATENT ASPHALTE AND FELT ROOFING
ACID-RESISTING ASPHALTE,
WHITE SILICA PAV.
SEYSSSEL ASPHALTE (Direct from the Mine)

"Trop Dry" Glazing

ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.

Copper & Zinc Roofing

The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address:
"COUBTEOUS, LONDON."

F. BRABY & CO., LTD.

Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.

Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Telephone:
North 5028 (4 lines).

THE BUILDER

VOL. CI.—No. 3576.

AUGUST 18, 1911.

CONTENTS.

PAGE	PAGE	PAGE			
SURFACE TREATMENT OF CONCRETE BUILDINGS	179	MEETING.....	190	LONDON COUNCILS.....	204
POSITION OF THE EXPERT WITNESS.....	180	NOTES TO ILLUSTRATIONS	150	OBITUARY	204
STORY OF THE BRIDGE. II. THE ROMAN	180	MONTHLY HISTORICAL REVIEW:—		PATENTS	204
FOR (WITH ILLUSTRATIONS)	181	THE "PASSEGGIATA ARCHEOLOGICA" OF ROME		SOME RECENT SALES.....	204
NATIONAL CONGRESS OF ARCHITECTS, ROME	181	(WITH ILLUSTRATIONS) ..	191	PRICES CURRENT.....	204
ING AND REWARDS.....	183	LONDON AND PARIS	193	TENDERS	205
ROYAL ARCHEOLOGICAL INSTITUTE IN SOUTH		NOTES (WITH ILLUSTRATIONS)	194		
ES.....	185	THE BUILDING TRADE:—			
SED RESTORATION OF THE CHURCH OF		MEDIEVAL BUILDERS AT WORK (WITH ILLUSTRATIONS)	196		
MARGARET, UPTON, NORFOLK (WITH ILLUSTRATIONS)	185	MIDDLESEX NEW GUILDHALL	197		
AL NEWS	186	GENERAL BUILDING NEWS	197		
SPONDENCE (WITH PLAN)	189	PROJECTED NEW BUILDINGS IN THE PROVINCES	198		
YEARS AGO	190	THE PRESERVATION OF OLD BUILDINGS	199		
IAL SUMMARY.....	190	LAW REPORT	201		
		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ..	202		

Illustrations.

COTTAGES AT LETCHWORTH. MR. ROBERT F. JOHNSTON, ARCHITECT.

KITCHEN, STANTON HARBOURT MANOR HOUSE, OXFORD: DETAILS. MEASURED DRAWING BY MR. SYDNEY H. MILLER.

GATE TO COURTYARD, HILLS CASELLE, KIRKCUDBRIGHTSHIRE. MEASURED DRAWING BY MR. SYDNEY H. MILLER.

ROMAN BRIDGE OVER THE OUVÈZE AT VAIRON, VAUCLUSE, FRANCE.

ROMAN BRIDGE OVER THE RHÔNE AT VIVIERES.

Illustrations.

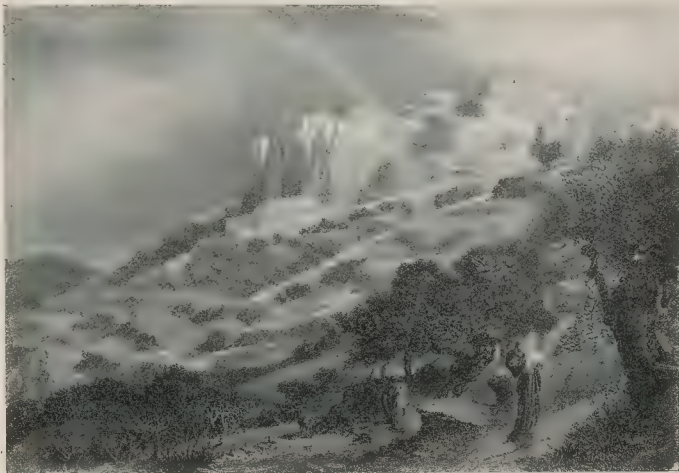
COTTAGES AT LETCHWORTH. MR. ROBERT F. JOHNSTON, ARCHITECT.

KITCHEN, STANTON HARCOURT MANOR HOUSE, OXFORD: DETAILS. MEASURED DRAWING BY MR. SYDNEY H. MILLER.

GATE TO COURT-YARD, HILLS CASTLE, KIRKCUDBRIGHT-SHIRE. MEASURED DRAWING BY MR. SYDNEY H. MILLER.

ROMAN BRIDGE OVER THE OUVÈRE AT VAISON, VAUCLUSE, FRANCE.

ROMAN BRIDGE OVER THE RHÔNE AT VIVIERES.



A General View of the Church and Monasteries, Bethlehem. (See page 187.)
From "The Church of the Nativity at Bethlehem." (Mr. B. T. Batsford.)

THE SURFACE TREATMENT OF CONCRETE BUILDINGS.

IN the art of architecture, which depends for its appeal so much upon the judicious use of the forms harmonised and sanctified by tradition, only with the greatest caution that can break away from the methods of design based on materials that have a long in use. From time to time new pleas have been put forward, the abandonment of all the "ekneyed" paraphernalia of design, the return to "first principles" design based on the embellishment of structure. Even the logical temperament of such a man as Viollet-le-Duc did prevent his coquetting with this idea. To the support this theory has given, it is now, we imagine, sufficiently credited to render its further continuation superfluous. With the introduction of a new building material the

point must always arise as to how far it can achieve expression independently of the traditional forms. It may take forms so nearly akin to the material it supplants as to render the transition easy and natural, but, on the other hand, it may involve such drastic changes of method as to necessitate a long experimental period before it comes into its own as a recognised means of attaining architectural effect. As with the Ionian Greeks, stone took time to assume the characteristic forms appropriate to its structural capacity, and as during the last century iron and steel were embellished with decoration borrowed from other materials, so at the present time the rapid development of concrete as a constructive material, due to the discovery of the monolithic combination of concrete and steel, presents to us the new

problem of the range of possible architectural expression in this monolithic type.

In order to avoid confusing the issues, we may at once dismiss from consideration all structures compounded of reinforced construction and the pre-existing methods of building and confine ourselves to those formed of concrete cast in moulds, which will probably enclose, in some manner or other, steel tension members. In regard to these there can clearly be but three possible systems on which the surface left by the removal of the moulds can be treated, as, while each of these is capable of almost infinite variety, it must either be by addition, by simple inaction, or by subtraction that the surface will be determined.

The first of these includes all such methods as plastering, tiling, and other

means used for concealing in whole or in part the surface left from the forms. In the case of the second, the forms must themselves be of a character giving the desired surface. In the third the materials used must be such that the erosion or dressing off leaves a face suitable for exposure.

We do not propose to enter into the question as to which of these three methods may be regarded the more legitimate as a means of architectural expression; indeed, we very much doubt if such a question can be discussed with any profit. Such attempts have so frequently been made, only to result in the bottom being knocked out of conclusions, apparently most closely reasoned out, by the man of genius, who, having ignored them, achieves his aim by processes which are not at the time explicable on any argumentative basis.

As might have been expected, most of the experimental work in all three methods has been done in the United States. There, for some years past, pottery designers have been working out decorative ornament suitable in scale and colour for the embellishment of concrete buildings. A general surface of tiling or of marble slabs, recognisable as slabs and not simulating masonry, has also been accepted in the U.S.A. and on the Continent; while more recently combinations of eroded surfaces with added decorations have been attempted.

Again, in the matter of untouched surfaces we have done little here at home in regard to any substitutes for the usual boarded forms, though in cases efforts have been made to produce a surface as clean and uniform as possible.

In the U.S.A. sheet metal forms are in use, having lines or a pattern to mark the edges—a distinct effort to impress on the building the method of its construction. On these lines an infinite variety of effect appears possible, the only limit being the restraining influence of the architects' taste. It might be considered, for example, appropriate to stiffen thin metal forms by a stamped grooving or pattern, and this would leave its impress on the face of the work, suggesting a sort of diaper in relief; again, the metal forms might be made to hold a kind of coarse mosaic, producing a result akin to the *opus reticulatum* of the Romans. It is obvious that we have by no means reached the limits of possibility in this direction.

Of late, more attention has been given to the system of removing the surface left by the forms, and a number of methods have been used for this purpose. The face may be treated with dilute hydrochloric acid, which removes the cement and exposes the aggregate. The sand blast leaves a larger proportion of the cement matrix exposed, and the same may be said of both the hand and pneumatic hammer work. If it is possible to remove the forms within twelve hours, scrubbing with a steel brush produces a texture much better in its effect than that left by the pneumatic hammer, which picks out the aggregate so that the colour of the matrix only is shown.

In the case of all buildings proposed to be treated by one of the methods of

erosion the selection of the aggregate is of the utmost importance; it should not be too varied in colour and its general tone should be considered; it may be of any shade desired, but a mixture is not only less effective in itself, but has the additional disadvantage that if not kept absolutely uniform the work will appear patchy and over variegated. The mixing and deposition of the concrete must also receive much closer attention than it would otherwise need, the aggregate requiring to be kept to an exact average in size throughout, and any ramming done with the greatest caution in order to avoid packing the stones closer in one part than another. Thus the preparation of concrete suitable for erosion is an operation demanding a degree of skill materially increasing the cost of the work.

No doubt in time reinforced concrete will take its own place, much as steel is doing at the present day, and will develop some legitimate mode of expression. The time will come in due course; to try to force the pace will only, in most cases, result in adding to the abortive efforts at architecture on "first principles" before referred to, but it is not amiss to keep in touch with any possible treatment for construction of this character, and among these the question of surface has a very definite importance. It will, of course, be readily recognised that it is by no means the only one, but as it appears to us to have been somewhat neglected in this country we have thought the moment an opportune one to draw the attention of our readers to the possibilities in this direction.

THE POSITION OF THE EXPERT WITNESS.

RECENT proceedings serve to remind us how rarely architects are asked to appear as witnesses, either before Parliamentary Committees or Courts of Justice, on matters that are purely architectural, or to give opinions on æsthetic questions.

Although it is customary for architects to appear as expert witnesses in the Courts, it is noticeable that they hardly ever appear in their essential character as skilled artistic constructors, but rather in that of surveyor, valuer, or authority on ancient lights, or party wall experts. It is not often that they are called upon to give evidence that might not equally well, or even better, be given by a building surveyor. To give evidence in the Courts on æsthetic questions of design is rare enough, to do so before a Parliamentary Committee is still more rare, and is, of course, a matter of even greater importance. We cannot pretend to be altogether satisfied with the present position of the architect under such circumstances, or with the procedure adopted to obtain his evidence. It would be more satisfactory from every point of view, we think, if, instead of allowing the promoters of a scheme to bring forward architectural evidence in its support, the Committee would appoint independent architects to study the whole question and report direct to the Committee itself.

This would ensure that every aspect of the case—the bad points as well as good—would be placed before the Committee in an exhaustive and absolutely unbiased and impartial manner, by bringing the whole of the truth to light, would not only be more in the interests of the public, but also in the interests of the architects themselves, as their position would be more pendent, dignified, and acceptable.

Even in the ordinary Courts of Justice where it is the custom for architects to appear as expert witnesses for one or the other to private litigation would, we think, be more in the interests of justice, and more in accordance with the dignity of architecture, if the rule held good, and architects only appeared to give information or opinion when called on by the Court. They should thus be spared the embarrassment of sight of eminent experts on opposite sides cancelling each other out, and doing nothing to further either interests of justice or of the profession of architecture.

Whatever justification there may be for the present system where private interests are concerned it would probably not be disputed that where public interests are involved they are best served when the architect appears only as a servant of the public to place his knowledge and skill at the service of the State.

NOTES.

School
Playgrounds.

THE President of the Board of Education has appointed a Committee to consider possible reasons for the modification of the rigid minimum of 30 ft. size of playground per scholar. It seems a very desirable thing that such questions should cease to be regarded as matters of routine with rules laid down as universally applicable, however varied conditions may be. The attention of the Committee is drawn to the influence that the proximity of recreation grounds or open spaces may have on a decision as to the area of playground needed, and it will at once strike those who have their eyes on the future that this problem is one in which our new town-planning schemes ought to be very helpful, providing the proper connexion between school buildings and public recreation grounds. A playground of this character, as distinct from the quiet park or reservation, is in its nature placed in conjunction with the school buildings, and the uses of both are enhanced by their mutual proximity.

The Royal
College of Art.

THE Departmental Committee appointed by the Board of Education to consider the question of "functions of constitution of the Royal College of Art," has now issued its Report. The Report was heralded by a circular which was referred to in our issue of July (p. 33), and which gave in outline views now set forth more fully in the Report. The Committee expresses its opinion that the artistic tests for admission of students do not result in securing the best, and it is pointed out, in localities possessing a strong

ustry utilising artistic work, designers in the district seem to be preferred those from the Royal College of Art, where local talent does not cover the whole ground bodies such as the Calico Printers' Association and the Wall Paper Manufacturers' Combine prefer to supplement their staff from abroad rather than in the Royal College. This neglect seems to be not wholly deserved considering the high standard shown in any of the designs produced at South Kensington, but the Committee feel that it is not without a reasonable basis that—

If the training of designers is to be kept close relations to the industries it must, in main, be carried on in the actual centres of those industries are located, and where the necessary equipment can, without reasonable expense, be made available."

They recommend:—
That the training of designers for the manufacturing industries should be specialised, and should be undertaken by provincial colleges, each of which, while continuing to provide general education in art, should devote special attention to the needs of the dominant industry in its locality, and to this end should take steps to associate with its work representative manufacturers and artisans belonging to the industry;

That these provincial colleges should be conducted as departments of colleges which deal with the practical and the scientific as well as the artistic sides of the dominant industries in its localities;

That when a system of provincial colleges is established, the relation of the Royal College of Art to such colleges should be that of a school advanced studies only, providing courses of one or two years' duration adapted to the individual needs of its scholars and in close relation to the Victoria and Albert Museum; That the training of teachers of art, wherever undertaken, should be conducted under conditions which will entail a higher standard of moral or technical as distinct from artistic attainments, and should include an adequate pedagogic preparation;

That Universities should be encouraged to provide suitable degree courses for intending artists, architects, and teachers of art."

meeting the contention that the adoption of these recommendations would have the effect of lowering the status of the Royal College, the Committee claims that, as a post-graduate college in close touch with the local art schools, it will serve for the first time a well-defined position as the culminating point of the whole system of industrial art-training in England.

Basements and By-laws. A CORRESPONDENT in the *Times* draws attention to a by-law stated to have been passed by the Marylebone local authorities providing that a room habitually used as a sleeping-place, the surface of the floor of which is more than 3 ft. below the surface of the street level, is to be deemed a dwelling-house so dangerous or injurious to health as to be unfit for human habitation, and points out the effect this by-law will have on metropolitan houses where men-servants sleep in the basements. As this letter might lead to a serious misapprehension as to the character of the by-law in question, we quote the paragraphs bearing on the case:—

"Such room shall in every part thereof have a height of at least 3 ft. of its height above the level of the surface of the street or ground adjoining nearest to such room: Provided that if the width of the area hereinafter mentioned is not less than the height of the room from the floor to the said surface, or is not less than 6 ft., the height of the room above such surface may be less than 3 ft., but not in any case less than 1 ft.

There shall be outside of and adjoining such room and extending along the entire frontage thereof and open upwards from 6 in. below the level of the floor thereof an area properly paved and effectually drained and at least 4 ft. wide in every part: Provided that the width of such area may be not less in any part than 3 ft., if the mean width of the area be not less than 4 ft."

Thus we see that its requirements are nothing more than is usual and reasonable, and though, of course, every hard-and-fast rule may appear to operate harshly in a few cases, it has long been recognised that the interests of a minority must not be permitted to stand in the way of enactments intended to benefit the community as a whole.

Trade Disputes and Picketing. IN view of the recent strikes in London, and the dislocation of all business which has ensued, the circular addressed by the Home Secretary to the Chief Constables is a document of considerable interest to all employers of labour. It is hardly necessary to point out that the "peaceful picketing" permitted by sect. 2 of the Trade Disputes Act, 1906, entirely loses its character when acts of intimidation or violence are resorted to; but some of the observations contained in the circular are of considerable importance. Thus the Home Secretary points out that in distinguishing between peaceful picketing and picketing which amounts to intimidation, and which is an offence under the Conspiracy and Protection of Property Act, 1875, the number of persons engaged in the picket is an element to be considered. If it is disproportionate to what should be needed for lawful purposes the protection of the Trade Disputes Act may cease to apply. A second point of importance is, as the circular points out, that the Trade Disputes Act, 1906, gives the picket no right to enter private premises, or to insist on interviewing any workman in private.

The Civil Aspect. THESE matters, the subject of the circular, relate to the criminal aspect of the question, but as regards the civil side we may draw our readers' attention to the decision of the House of Lords in *Conway v. Wade*.

fully noted the *Builder*, August 7, 1909. That decision laid it down that the right of civil action was only taken away by the Trade Disputes Act, where there were no threats or violence; and that where contracts are broken, or there is interference with any trade or business then even a peaceful act can only be justified under the Act when it is done with a view to a dispute which is imminent or in support of an existing dispute.

THE STORY OF THE BRIDGE.

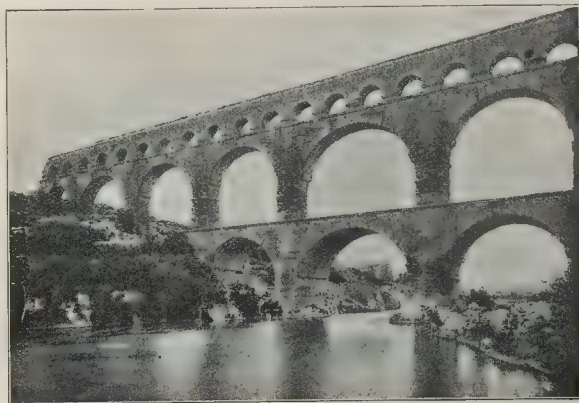
By WALTER SHAW SPARROW.

II.—THE ROMAN GENIUS.

ROMAN aqueducts and bridges, says an authority, "were really of a more engineering than architectural character, being in the main utilitarian." What does that mean? Was a Roman temple less utilitarian than a Roman aqueduct? Less needful as a part of the national life? But, when a lover of Greek art tries to write on the Roman genius, very absurd things are often uttered. Thus we are told by the same authority that the Pont du Gard, near Nîmes, in France, is built of "rough masonry." What next? Sandow, in comparison with a Tom Thumb, is a man of rough muscle and sinew, and if Tom Thumb is to be our standard of symmetry and grace, then Sandow is a masterful mistake in proportion and vitality. To describe the Pont du Gard as "rough" is to be a Tom Thumb in criticism.

Who knows why Anglo-Saxons are so reluctant to admire in art those very qualities that win victories and promise a great future? Why is it that our criticisms of art are sweetened with such words as "sentiment," "refinement," "gracious and gentle tact," when there are qualities of a higher kind, not only manlier, but more heroic? The Roman genius, in such magnificent monuments as the Pont du Gard, is the very tonic for which we ought to have a natural liking. Yet a professor of taste finds it "rough," just as bad climbers speak of the Alps disrespectfully.

When J. J. Rousseau visited the Pont du Gard he was awed into silence by the immensity of the three arcades. For the first time in his life he understood the grandeur of the Roman spirit in adventurous achievement. As he walked along each arcade the echo of his footsteps enabled him to hear the great voice of the builders. How had all the large stones been brought to this place, in a neighbourhood where quarries



Pont du Gard, Nîmes, France.

seem to have been unknown? And whence came the art that piled them up into a silencing design? Each stone was laid in its allotted place quite dry; neither mortar nor cement was employed, except as a lining to the water-channel on the third tier. Rousseau spent hour after hour in meditation, and then he remembered a humorous fact. He had been warned against the beautiful girls of Montpellier, and here he was alone with the Pont du Gard, and completely fascinated!

A classic tradition says that the stones in the Pont du Gard were joined together by iron bands. Is that true? The iron clamps, if employed by the masons, were not left on the surface of the stones, for there's no reference to them in the writings of modern students and travellers. That the Romans did use iron bars bent at the ends and fastened into huge stones with molten lead is proved by the ruins of the Roman bridge over the North Tyne at Chollerford, near Hexham. This was probably a bridge with a wooden superstructure, as voussoirs have not been found among the *débris* of stones. You will find full information in Dr. Bruce's book on "The Roman Wall," and in "An Account of the Roman Antiquities preserved at Chesters, Northumberland," by E. A. Wallis Budge.

The Pont du Gard is immense, its height being not less than 47 metres and 20 centimetres. The first tier has six arches, the second has eleven, and the third thirty-five. The first tier is 20 m. 10 cm. high and 161 m. 80 cm. in length; while the middle tier is 19 m. 40 cm. in height, and 257 m. 90 cm. long. Note, too, that the architectural centre of the design is not the real centre; this was determined by the course of the River Gardon, and we find it on the north in the second arch of the first bridge, the arch under which the river flows. It has a span of 25 m. 30 cm., while the neighbour on each side is smaller and narrower, having a chord of 19 m. 20 cm. The other arches of the first tier dwindle to 15 m. 75 cm. in span. As to the centre of the second story, it corresponds with the first, for the largest vault is above the river; it carries four little arches of the third arcade, while the others support only three. Thus the symmetry of the whole work must be judged in its relation to these facts. Some critics see nothing more than the unequal size of the arcades, when the real point is to find the *milieu architectural*, whence the design radiates, majestic and imperious. Fergusson said very well that the topmost arches give to the structure the same finish and effect

that an entablature and cornice give to a long range of columns.

We cannot put a date on the Pont du Gard because there are differences of opinion in this matter. The historian of Nîmes, M. Ménard, attributes the work to Agrippa, son-in-law of Augustus, who is said to have ordered its construction in the nineteenth year B.C. The style belongs to the Tuscan order, and all the arcades are groined and semicircular. The curve of every arch springs from a ledge, an impost resembling a cyma, about 50 centimetres high, and as much in projection. There are four groins in the arches of the first tier, and three in the second, while the third tier has either one or two. The water channel, placed on top of the third arcade, is 1 m. 30 cm. wide and 1 m. 60 cm. high; has side walls with perpendicular stones, and these bonders, 0 m. 80 cm. in size, bear cemented flagstones, a metre wide and having a thickness of 0 m. 32 cm. The channel itself is nearly blocked up with a thick deposit of lime, but when this substance is detached antiquaries find on the side walls a deep layer of cement painted red. The bed of the canal is a solid floor 0 m. 22 cm. in thickness, its component parts being small pebbles mixed with lime and gritty sand.

The Pont du Gard, like other antique monuments, has suffered from a competition between mankind and the centuries. The hand of time is difficult and ravaging, but men are more to be feared in their vandalism. At the end of the XVIIth century, during years of religious persecution, the Pont du Gard was often crowded with fugitives and with troops, who detached stones both from the piers of the second arcade and from the heads of the arches in the first tier. These injuries were all on the side that looked upstream. The aim was to enlarge the footway on the right-hand side of the piers, by means of a structure or platform corbelled out from new imposts. Along this road cavalry and artillery passed at full speed, shaking the bridge and causing the topmost tier to develop a curve in its horizontal parapet. At last the province of Languedoc interfered, and in 1670 careful restoration was begun. Only a small road was left open on the first bridge, and this was kept for horsemen and foot-passengers.

Years later, in 1743, the *états généraux* decided that a public bridge should be built up against the eastern side of the Pont du Gard; this was done without harming the Roman monument; and the new bridge, finished in 1747, may have been justified by its alleged necessity. There have been some modern restorations to the Pont du Gard,

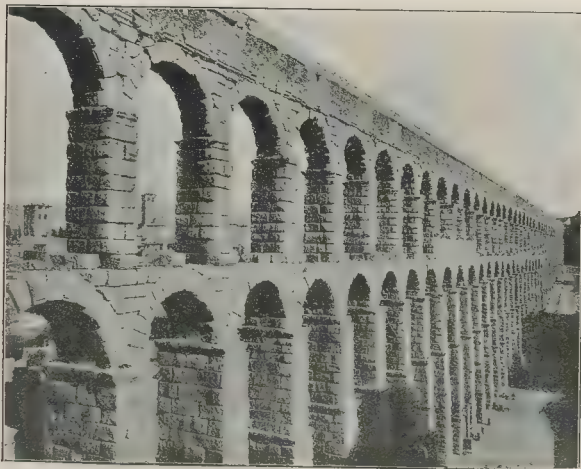
and one day the aqueduct itself may be brought into use again, in accordance with the wishes expressed by engineers during the last half-century.

We pass on now to another Roman bridge, at Vaison in Vaucluse. It is a bridge of stone over the River Ouvèze, and its span measures 30 metres. Vaison is built in part with materials from a Roman town, Vaison la capitale de Vaconces, and its antique monuments are famous in France. Thus the church of Sainte-Marie, built between the Xth century and the XIIth, preserves some genuine Roman cloisters, and there are ruins of a Roman theatre. I give here a good photograph of the bridge, showing in detail the mason's craftsmanship.

Another Roman bridge, not generally known, is found at Pollenza, in the island of Majorca. It has two arches. One semicircular, and springs from the river-bed, while the other is a long segment arch stretching from an abutment wall on the bankside to the buttress guarding the pier. Above the buttress is a small archway break the force of a flooding river. This what the French call an *arche de décharge pour les hautes eaux*. To find it in a Roman bridge is interesting, for it gives a classic origin to the use of discharge arches in mediæval bridge-building.

Much larger and more impressive is the probable Roman bridge at Viviers, in France (*Ardèche*), built mainly with pebbles and small stones. Photographs show clearly the workmanship, and I give here a view of the west side. Viviers is only a village to-day with less than 2,000 inhabitants; but in the Middle Ages it was a cathedral city, with pride much greater than its population which numbered 15,000. The Roman name for it was Alba Augusta, but its Roman civilisation was destroyed by the Vandals in the Vth century, and another type of society came to life amid the ruins, the old bridge remaining as a bond of distant union between past and present.

Viollet-le-Duc believed that the Romans in their colonies built few bridges of stone, preferring timber because it was always plentiful and easier to use. The old Gaulish methods of bridge-building, though primitive were strong, and the practical Romans would not hesitate to employ native traditions and craftsmen. That there was no opposition to useful primitive methods is proved by the fact that the Gaulish craft of bridge-building has outlived the Roman domination by many centuries; it may be seen to this day in Savoy. Viollet-le-Duc drew attention to this circumstance, and said with truth that timber bridges in Savoy descended not merely from the workmanship described by Julius Caesar, but from some remote age in prehistoric time. Note, too, with interest, that the timber piers are constructed like those at Srinagar, in Kashmir, which (as I mentioned in my first article) appeal to us as primeval carpentry in the likelihood developed from the log foundations of lake-dwellings. It is quite an easy thing to make a bridge in the Gaulish fashion. You choose a river with steep banks, just wide enough for a single span. On each bank you make a bed of flat boulders, and then begin to raise up your timber pieces using tree-trunks laid in a criss-cross manner. In order that the footway from pier to pier may not be too long, and therefore unstable, you increase the length of your horizontal logs as the piers rise in height; and because these logs on each side jut farther and farther across the water a rude arch is suggested by them, not a perfect arch, since the timbering of the footway gives it a flattened head. The inconvenience of a long footway in a wooden bridge may have suggested this method of pier-building to prehistoric craftsmen. If so, how are we to think of it in relation to the origin of arches? On the other hand, prehistoric timber piers may have had the same width all the way up; perhaps the progress of architecture in Roman and in Indian work suggested the use of longer logs to project



Roman Aqueduct, Segovia.



Roman Bridge at Pollenza, Majorce.

"Photo. Lucoate, Madrid."

ver the water, and to make at last a jutting support under the timbers of a footway.

From the rarity of Roman bridges in Great Britain we learn that wood was the material used in early historic times. Do we possess even three or four Roman bridges with an authentic record? Here and there local traditions attribute a bridge to the Romans, but how many do you know having the support of distinguished antiquaries? A good many along the Roman roads have Romanesque traits, but I should like to find a true example of Roman craftsmanship. By my side I have a photograph of a supposed Roman bridge at Monzie, near Crieff, in Perthshire, with an arched footway overgrown with ferns and grasses. The type appears to be Roman, like the so-called Roman bridges near Bettws-y-Coed; but is the work as old as the XIIIth century?

In my search for Roman bridges in Great Britain I have consulted Mr. C. S. Sargisson, who has photographed and studied a great many important bridges in England, and who has added many prints to my collection of photographs. It was he who first drew my attention to the Roman bridge of a single round arch near Colne, Clitheroe, concerning which there seems to be no doubt in the opinions expressed by antiquarians. Its simple design is finer in aspect than the "New Port" at Lincoln, which is unquestionably Roman. The strong arch-stones have no masonry above them, but the footway is protected by large cobbles which are easy to displace when they become outworn. The width of the footway may have been wide enough for a British war-harriot or a Roman cart, which were very narrow, seemingly.

Along the old Roman tracks in Lancashire there are many single-arch bridges having a Roman character, but without a stalwart air of authentic dignity. The one near Clitheroe looks genuine, while the others speak to me of a Roman tradition enfeebled in much later days by a different spirit in craftsmanship.

For the rest, many persons believe that Roman bridges have roadways either perfectly level, like that in the noble bridge across the Tagus at Alcantara, or else semi-circular over a single arch. But there is another type, and it may be studied in the five-arched bridge built by Augustus at Rimini, where the roadway ascends to the middle of the central arches, and then goes downwards. Medieval architects borrowed this method of construction for reasons to be given later; and we shall see also how other characteristics descended from Rome to the Middle Ages and to our own times.

WORKMEN'S INSTITUTE, ABERTRIDWR.

This building, which was opened last week, has been erected at a cost of about 8,000l., and includes a library. The architect for the work was Alderman Illyd Thomas, and the contractor, Mr. John Williams.

INTERNATIONAL CONGRESS OF ARCHITECTS, ROME.

THE Ninth International Congress of Architects will be held in Rome from October 2 to 10. It was agreed at the Congress of Vienna that this meeting, the ninth of its kind, should be convened in Rome on the occasion of the festivities in Italy, organised to commemorate the fiftieth anniversary of the proclamation of Rome as capital of the kingdom. The eight preceding, of which the first was held in 1867, met in Paris, Brussels, Madrid, London, and lastly in Vienna.

H.M. the King of Italy has acceded to the wishes of the Committee in accepting the patronage of this Congress, and the Ministers of Foreign Affairs, of Public Instruction, and of Art have consented to act as honorary presidents.

By permission of the Syndic of Rome, the Congress will be inaugurated in the historic Hall of the Horatii and Curiatii. The following subjects will be considered:—

Reinforced concrete, the mode of using it in different countries, and how it may be applied to great buildings both as regards the technical and the decorative point of view.

Duties and rights of the architect with regard to his employer.

The technical and artistic education of the architect, and the architect's diploma. The exercise of his profession beyond the limits of his own country.

Considerations as to modern architecture. The carrying out of architectural works for the State or other public bodies.

The desirability of a dictionary of comparative architectural terminology. Foreign academies in Rome. (History course of study and works of the pupils. Their influence in their respective countries.)

Written communications and lectures are admissible on the following subjects:—

"Plans for the Laying out and Aesthetics of Towns"; "Building Regulations."

The Committee will be obliged to all those who will furnish written articles on these subjects, to be sent in before August 15 next, accompanied by a summary in one of the four languages to be employed in the discussions of the Congress, viz., French, English, Italian, and German.

The subscription for full members is 12l., and for associates, being members of the family (wives, sons, or daughters) of a member, 12s. Both members and associates have the privilege of admission to:—A reception to be given by the International Association of Artists; a reception at the Capitol; a picnic (olobrat); a garden party; and probably to other important receptions.

Members will be shown round Rome and the Exhibitions under qualified guidance. Excursions to the environs (including lunch), will be arranged at a small payment. There will be special banquets and a lunch for official delegates and their wives; also the usual closing banquet, for which tickets can be obtained by payment. Tickets of admission to the museums will be distributed.

A party of members and associates will

leave London on September 29, the itinerary being as follows:—

Friday, September 29.—Leave London (Charing Cross Station), 9 a.m., by the short sea route Dover and Calais for Paris, continuing by evening express for Genoa.

Saturday, September 30.—Arrive Genoa, where the night will be spent.

Sunday, October 1.—Leave Genoa by morning express for Rome, arriving the same evening.

Monday, October 2, to Wednesday, October 11.—In Rome. Members will be able to return to London at their own leisure, within the validity of the tickets, i.e., twenty-five days.

The fare will be 14l. 18s., providing second-class travel ticket, with first-class on steamer from London, via Calais, Paris, and Modane to Rome and back; hotel accommodation; omnibus transfers; fees to hotel servants, railway porters, etc.; free conveyance of 55 lb. of baggage (while travelling with the courier); the services of a qualified courier.

The courier will return on the morning of October 11, and any members desiring to return at the same time will have the benefit of his services during the journey, and of free conveyance of baggage as above; but meals, hotel accommodation, fees, or transfers on the return journey are not included in the fare. The members would have to travel together on the outward journey to Rome.

Superior hotel accommodation can be provided at an increased fare, and independent travel tickets can be had at an extra cost.

Mr. John W. Simpson, Vice-President, R.I.B.A., is acting as Secrétaire, Comité Permanent International des Architectes.

TRAINING AND REWARDS.

The ultimate guidance of study rests with those who bestow reward.

The donkey is more effectively directed by those who offer inducement than by those who tweak his tail; and if our masters in their capacity as educationists may be regarded as tweekers, in their more potent function they are the controllers of our studentships and prizes. Now they must of necessity be men of standing, though not therefore qualified to judge, or—since that is begging the question—if qualified, their judgment may through knowledge of the power they possess be informed with a determination to uphold what they regard as desirable though perhaps contrary to—it may be better than—the common view. Students of architecture suffer little in precisely this way. It may seem at times that they do; results, external evidence, may lead to that conclusion. But although the effect may be the same to all appearance, yet it proceeds from an opposite cause. It is not that those who are responsible for an award which, if not indefensible, is certainly susceptible of objection, are using their tremendous lever steadily with some concealed subversive intent. No. That were too purposeful. In vain do we seek the sinister in a merely muddled land. It is because, as far as one can judge, they are unaware of what they might do, that they have, as a body, no purpose at all, and must therefore act as seems to them best on each occasion, on a frankly opportunistic basis, which is no basis at all.

Necessity of Organisation.

Now at a time when there is a consensus of conviction as to what is good, nothing more would be required, or that is to say, so much would be impossible, opportunism being extinct. But at this present, when architectural aspiration in this country is pulling itself together again, but while the slime of the morass in which it has floundered is still, here and there, termed evidence of the affluence of romance, if not divine, some definite coherence must subsist in the matter of the bestowal of studentships, if the force therein is to be exerted for advance. But the jury must be composed of men of accepted standing, and standing has for most men come with time and the times are changing fast. Are they to abandon recognition of the ideals which fired their youth and bestowed their favour upon the fashion of the day? Some will stand fast, though silent perhaps, others will "keep pace with the spirit of the age," others there will be on our jury who lead the van of the movement. Is it to be supposed that awards of such a body can, in the mass, effect any inducement to progression, other than the indirect one of dissuading the conscientious student from spending time to no purpose?

What Happens.

The incoherent and aesthetically feckless condition of the jury—and by this we mean not only the Committees of the Institute, but the Alexander Thomson trustees, the Council of the Royal Academy, and those who sit in

judgment at all the other schools—the condition of this jury is sufficiently concealed. Its decisions become evident at different times and places, and in each instance the probability is that the students themselves and the small public immediately concerned are at least as liable to decisions themselves. Then there are, we suppose, rare instances in which the palm goes to a design which may be plain, may be poor in detail, feebly or unfashionably drawn even, and yet be essentially right, and the numerous instances in which a design, vigorously presented is so held on all hands to be the best that few save the vanquished look into it at all, and some even of these do so but to stand, awed and agape.

Setting the Problem.

Preliminary to and yet integral with the wielding of our weapon for the fashioning of architectural education comes the setting of the problems in terms which indicate the nature of their solution. Even the name of the object to be designed alone counts for much. Plainly, from those who are asked to design a cow-hyres a kind of architectural fervour is demanded other than that desirable in those who are to draw a cathedral. And either of these edifices, and all those kinds which lie between, may be required in terms which indicate that the student is to design "big" or on the contrary that the committee in question is steeped in regard for the petty practicalities of the problem.

The Two Principles.

There are two ways of setting a problem, or rather of conceiving it. The one says, "Let us give him a free hand." The result is: "Design a building on a perfectly flat desert of no particular climate or social associations, and which lacks the point of the compass, though it may indeed be considered to have a sun fixedly shining at an angle of forty-five degrees." The other considers "that limitations are so jolly helpful," and proceeds to set a problem in the nature of a puzzle, involving in the attainment of its one solution a concentration on the details of small planning, in excess of the customary tedium of actual practice. And it happens that this year, among the prizes open, without fee, to all British subjects, there are two good and two bad examples of each kind. For both the "Free hand" and the "helpful limitations" principles may be either right or wrong—one is prepared to prove either contention; but if they are wrong they may be justified, and if right equally betrayed, in application.

One Principle, the R.I.B.A.

To the first or *carte blanche* (or as white as may be in an imperfect world) school belong the two important studentships controlled by the Royal Institute of British Architects—the "Soane" and the "Tite." And of these two the "Soane" considered empirically as a detached subject, seems to us to be very well set indeed. A Guild Hall. It is to be placed in a park, some distance from the road, and the approximate requirements for the main parts are furnished, while the list of subsidiary rooms indicates the nature of the building without in the least hindering the glorification of design. Which is surely fitting as far as it goes, for the site is given in a public park—no place for the too precise limitations of a building line. For the "Tite," on the other hand, the student must design the central courtyard of a Royal Exchange covered with a roof—a legitimate region for adornment with classic forms, and one offering sufficient scope for design according to the terms of Sir William's will. But before the competitor can begin he must set himself the problem. True, some slight indication of the kind of rooms that must open into it is given; but for these the student will look up actual instances. Messrs. Mearns & Simons' Cotton Exchange at Liverpool being perhaps the most suitable. But of what shape is this courtyard to be? Round, square, oblong, triangular, octagonal—any of these and others?—and of what dimensions? How shall any jury judge between them? A problem which is not set cannot be solved—a truism of which we regret the necessity of statement.

Instance of the Other.

The trustees of the Alexander Thomson Memorial and the Council of the Royal Academy on the other hand are decided that, even at some cost, the designs submitted for their

adjudication shall have much in common to the end that their merits may be fairly assessed. And this view may be as right as the other; indeed as we state it in words it seems the better of the two. The proof of the principle lies, however, in the justice of its application. The Thomson prize is to be for a "Bridge, with approaches, spanning a river 500 ft. wide, with a terrace on either side, 50 ft. wide. Width and camber of the bridge, heights of road, terrace, and river—which is tidal (a legitimate difficulty), the range being stated—and a plan and section of the whole, that nothing may be doubtful, is given. The medium in which the drawings shall be made is prescribed. The intention of the trustees is defined. And yet the problem is a matter for spacious architecture, real enough, but shorn of the detail attendant upon actual practice. Some grand things should result.

Royal Academy Gold Medal.

How different is the subject for the Gold Medal of the Royal Academy! On a certain area round the three confined sides of a city site, to design a hall for a "city company." The accommodation required is precisely given and the disposition of the parts is specified to a degree which prevents variety of solution to those who obey the conditions. So that the task of the unfortunate students who are eligible to compete this year for a prize, in the administration of which, if of any at all, there is surely scope for large conception and some splash of design, is to resolve as well as they can a series of Chinese puzzles in which given cubes must be somehow fitted together, with due regard in this case to the psychology of a beadle, the dignity of a clerk, and some misgiving concerning the type of lady who will sit in the stipulated gallery to watch her men folk feed. The clients have said, "Here is our site. We want a forecourt in the middle and it must be so big. We want our dining hall of these dimensions, and there is just room at one point to place it. We require such and such rooms besides, and you must place them here and here. In short, nothing remains for you but to fit them in (being careful of your cupboards), and provide the architectural titillation and see that there is plenty of it, for we are rich." Which resolves the struggle for the fastest architectural studentship in the country into an affair of who shall draw the best detail and decoration, of a style and degree not specified.

Advice to the Student.

But let the student not despair in the case of the Gold Medal and the Tite prize, or hope unduly because of the seeming excellence of the Soane or the Alexander Thomson. Let him, not too flagrant violating the conditions, design in any style he pleases, with due deference to the contemporary modes, for which he should consult the works submitted in recent competitions, for this is politic. Let him not bother too much about the plan, so that it but have axes enough and symmetrical rooms. The correlation of plan and elevation need not imperil either, for drawings of each will be made on separate sheets. And as regards these sheets, let him compose each one pleasingly as a thing in itself. Above all must he draw. Let him display great slickness with his pencil, astounding ingenuity with watered ink; let him boldly flood colour and make shaded shadows in the Beaux-Arts way. And then, if the result be striking at twenty yards, let him send it in and abide the outcome, like a true sportsman, who, doing his best, yet waits on fickle fortune. For if there is any common quality to be discerned in the successes, worthy or unworthy, of recent years, it is that of the poster which hits the eye, or of the draughtsmanship that intrigues the emotion of wonder.

What is Lacking.

How the student who has any conception of the meaning of architecture—if indeed we may assume it to have any significance at all—how such a one must long for the real problem, adequately conditioned by those who understand. How must he desire in the case of the "Soane," for instance, not for more dimensions or a limit of cost, but for some indication of the nature of the place in which it is to be put. It is a Guild Hall, embodiment of the city, outcome of that city's history and symbol of its present state. The city is in an old country or a new, it is Latin or Teutonic, it is commercial or it is not, it is Northern or it is Southern. And these are only some of the main headings of the infinitely varying

circumstances and conditions out of which the real architect will fashion his design, of the essential materials with which he must build. Yet not one of them is hinted at. In the case of the courtyard of a Royal Exchange, a much more prosaic matter, besides the lack of material conditions we noted above, the same absence of consciousness that anything more is required is evident; but not to quite the same extent, because there is less in the subject, commerce being a common and cosmopolitan affair. Concerning the Bridge, one asks many of the questions that centre round the Guild Hall; and as regards the design for the hall of a city company, the necessity for knowing all those things and much more must beset our student hopelessly. How will it be possible to judge between the assembled designs? As we have pointed out, it must be mainly in detail and drawing that any differences between them lie. But the very craft or trade that this detail must glorify is in no way indicated. Our students are to believe that architecture is built of bricks made entirely with straw.

The Discrepancy.

Indeed they may find in the conduct year after year of these bequests for the advancement of architecture just that utter ignorance or carelessness of the quality that is vitality in the art, which by using their eyes in almost any of our streets they may see. Our student discovers that instead of working by the light of his synthetic concept, he being of a newer generation, he must, if he would profit by the studentships at all, endeavour to fashion in the chaotic atmosphere of an analytic age, something to meet the approval of those to whom that atmosphere is the breath of life. We do not wish to imply that that life was not estimable, that chaos was not inevitable, that analysis was not desirable in the extreme; but all the foregoing leads to insistence on our contention, that in architectural matters the intellectual confusion and centrifugal endeavour of the last three-quarters of a century is giving place to a synthetic concept based on a knowledge of all the styles to be built with the aid of all the mechanical discoveries of the age. Decorated building is not easily induced to lie, and, despite the able efforts of our leading architects, it has some sorry tales to tell posterity of the intellectual and spiritual condition of their one great client during the last hundred years. But now in the body politic there are signs that the turmoil and abating chaos is resolving; on every hand ideas of co-ordination and co-operation are gaining ground; the advance of that which is social, in a word, as opposed to that which is anarchic, is being recognised as the tendency of the period.

Conclusion.

The story of the rise and growth of this tendency will be told inevitably in due course in architectural terms. But it seems to us a pity that at a time when the co-ordination of architectural education and the consolidation of the profession is being so much discussed, and the regulation of work done by travelling students to the end that eventually an ordered survey of the world's architecture may be obtained, is already *en tapie* as a practicable thing, that the preliminary condition, what we have named the *ultimate guidance*, or the due manipulation of reward, should be wielded to no purpose save that of its own distribution. "What would you?" will be the form in which objection to the gist of our remarks will be raised. We hope to be able to reply with the publication of a scheme, which, because it will be but an extension of what is already being thought, said, and done, will cause no great consternation.

THE RELATION OF BUILDINGS TO SITE VALUE.

IN the House of Commons on Monday, last week, Mr. Cassel asked the Chancellor of the Exchequer whether his attention had been called to the view that buildings could not increase in value apart from a rise in the cost of material and labour, and whether calculations, for the purpose of arriving at site value on an occasion for collection of increment duty, proceeded on that footing. The Chancellor of the Exchequer.—The answer to the first part of the question is in the affirmative. As regards the second part, the method of arriving at the site value on an occasion is that prescribed by Section 2 of the Finance (1909-10) Act, 1910, and is fully explained in the Instruction to Valuers dated January 21, 1911.

THE ROYAL ARCHÆOLOGICAL INSTITUTE IN SOUTH WALES.*

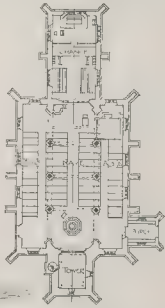
TUESDAY, August 1, was devoted to the visit to the castles and fortified houses around Caerboron, the Coburg Hotel in motor omnibuses, the party first visited the very perfect remains of Carew Castle. The history of this was briefly described by Mr. Edward Laws, who said that the castle was formed part of the dower of Nesta, wife of Rhys ap Ithel, who married Gerald of Windsor early in the thirteenth century. The oldest buildings on the castle were, however, of the thirteenth and fourteenth centuries. During the reign of Henry VII. considerable changes were made in the hall and entrance front by Sir Rhys ap Thomas, and again *temp.* Queen Mary by Sir John Popham, who added the unfinished gallery along the north front. Some remarks were added by Mr. Hope, who pointed out that the castle was practically a fortified house, the buildings arranged about a quadrangular court. The most ornamental details belonged to the changes made by Sir Rhys ap Thomas, and could be approximately dated by heraldry on the hall porch, consisting of the arms of King Henry VII., between those of the Prince of Wales, and his bride, the Infante of Aragon, to the end of the year 1502, or early in 1502. It is much to be wished that proper plans of this interesting house could be undertaken by some competent person. Carew Castle stands a tall and very perfect Celtic cross with interlacing knotwork and inscription. Monkton Priory Church was next visited and described by the Rev. D. Bowen. It consists of an aisleless presbytery and nave with a tower between, with a detached chapel on the north, and once belonged to the Abbey of St. Albans. Until a few years ago the choir or monastic portion was separated from the rest of the church by a wall, unroofed and ruinous. It has since been cleared and added to the parochial nave. Pembroke Castle formed the next item, and was described by Mr. Hope. It occupies the eastern end of the long and narrow fortified island upon which Pembroke stands, and is placed on a lofty rock nearly surrounded by water. The castle is said to have been founded here by Rhys ap Ithel about 1105, but Mr. Hope was unable to recognize any earlier work than the end of the thirteenth century or even later. The castle consists of an outer ward entered by a strong gatehouse, and of a smaller inner ward which also had its gatehouse, now destroyed. The ward was protected by an interesting guardhouse on the west, with a chapel attached to its north side. The most striking feature after the gatehouse is the large and lofty detached tower in the inner ward which formed the church, and is almost unique as such in this country. North-east of it against the castle wall are the ruined remains of the great hall and other buildings, all of which deserve careful planning. The building in the outer ward in which Henry VII. was born probably dated on its western side, where extensive foundations remain buried. After luncheon, the journey was continued to Lamphey Palace, which was described by Mr. Laws as one of the residences of the Bishops of St. David's. The oldest parts may be of the thirteenth century, considerable additions were made by Bishop Herbert (1528-47), and further minor changes by Walter Devereux, Viscount Hereford, to whom it was given by Henry VIII. The principal remains are those of the chapel and with a range of lodgings to the east, all raised on cellars or subvaults, but the whole is so covered with ivy and creeping plants that it is difficult to distinguish details. Manorbie Castle was next visited. It is of various dates, chiefly noteworthy for the pointed barrel vault to the nave and transepts, and for the tiled wooden canopy over the place of the altar in the north aisle of the nave. The tower occupies an unusual position on the north side of the chancel. Manorbie Castle is another fortified house, the origin of which is assigned to Gerald of Windsor, but contains nothing earlier than the end of the thirteenth century. The house and curtain walls and towers are still very perfect, but the main buildings have been much ruined, with the exception of the tower and its sub-vault. Part of the buildings forming the gatehouse were converted into a dwelling by the late owner, Mr. J. R. Cobb. After the return journey to Tenby a halt was made at the charming house and garden at Porth, where the party was entertained at tea

by Lord and Lady St. David's. In the evening, the annual general meeting was held, when the place of meeting for next year was discussed. The general feeling was in favour of Northamptonshire, with Market Harborough as a possible centre, but the final choice was, as usual, left to the Council. At the concluding meeting, which followed, votes of thanks were accorded to all those who had contributed to the carrying-out of a very pleasant and successful gathering. Wednesday, August 2, the last day of the meeting, was reserved for a visit to St. David's. This remote city was reached by way of a special train to Fishguard and Goodwick, and thence by motor omnibuses. The picturesque ruins of Bishop Gower's palace were first inspected under the guidance of Mr. Hope, who pointed out the arrangement of two halls, each with its great chamber, etc., about two sides of a courtyard, with a common kitchen in the angle; all raised above an extensive series of cellars. A similar example of two halls, but not all of one date as here, exists at Wells. The third side of the court contained lodgings and stabling, and the fourth side was closed by a wall with the gatehouse. The most noteworthy feature about the palace is the curious parapet, consisting of a series of open arches, surmounted by battlements, through which the steep-pitched roofs were taken. Other instances of this curious arrangement to be seen at Lamphey Palace and Swansea Castle, both also Bishop Gower's work. After luncheon, the cathedral church was visited. The building is too well-known to make it necessary to describe the salient features

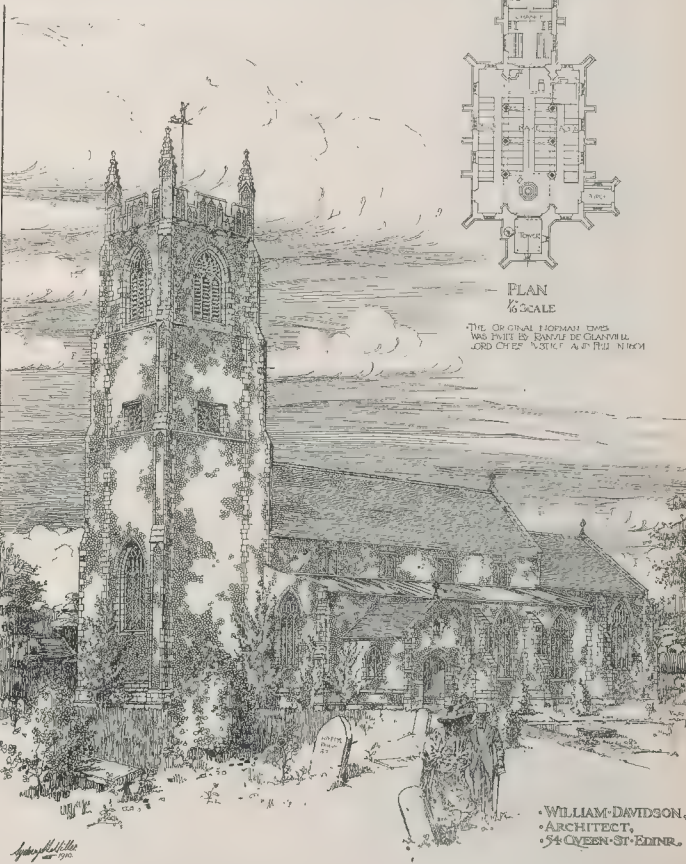
pointed out by Mr. Hope, but he commented specially on the wooden screen which stands athwart the choir just east of the stalls. This is usually quoted as an unique example of a "sanctuary screen," but it is clearly not in its original position, which Mr. Hope showed was on the top of the steps across the first bay of the nave, just west of the *pulpitum* altars, to which it served as a fence screen. Mr. Hope also called attention to the four rare examples of effigies of priests in amices, albes, crossed stoles, and dalmatics (instead of chasubles). From the evidence of thirteenth and fourteenth century seals there could be little doubt that these represented archdeacons. After a thorough inspection of this remarkably interesting church and of the adjacent ruins of St. Mary's College, the party returned to Fishguard, and the South Wales meeting came to an end. The arrangements throughout were well planned and carried out, and though the attendance fortunately did not come up to the somewhat unwieldy numbers of late years, sufficient members and their friends assembled to ensure the meeting being in every way a most successful one.

PROPOSED RESTORATION OF THE CHURCH OF ST. MARGARET, UPTON, NORFOLK.

The original Norman church, which stood for about two centuries on the site of the present, was built by Ranulf de Glanville, Lord Chief Justice, and was founded in 1171.



PLAN
1/40 SCALE
THE ORIGINAL NORMAN CHURCH
WAS BUILT BY RANULF DE GLANVILLE
LORD CHIEF JUSTICE ABOUT 1171



WILLIAM DAVIDSON,
ARCHITECT,
54 QUEEN-ST. EDINBURGH.

Proposed Restoration of the Church of St. Margaret, Upton, Norfolk.

Sketch from S.W. showing New Tower.
(Royal Academy Exhibition, 1911.)

* Concluded from page 162.

Whether this church was destroyed by lightning, fire, or simply fell into hopeless



Church of St. Margaret, Upton.

decay is not known, but when the Norman church was removed the tower was retained.

The present Perpendicular nave and chancel, which are fine in proportion, and con-



Church of St. Margaret, Upton.
Ruins of Norman Tower.

tain several features of considerable interest, were built against the Norman tower. There is evidence to suggest that the Norman tower



Church of St. Margaret, Upton: The Font.

at this time was heightened by the addition of another story in the style of the period. The tower fell in 1604, and has since

remained in a ruined condition; the western arch was built up to exclude the weather from the nave, and a lean-to brick belfry was added later.

The window tracery of the nave aisles and chancel is of fully-developed Perpendicular. The font must have existed in the Norman church for a short period, as it is slightly earlier in design than the nave, and is a good example of late decorated font of the Norfolk type.

Among other interesting remains are the old pulpit (now in the north aisle), several cusped pew fronts, the dado of the rood screen with its painted panels, and in the Lady Chapel and Chapel of St. Thomas à Becket there are two piscinas with good tracery. There are still to be seen the remains of several painted consecration crosses and the basin of a Norman piscina which was discovered in 1885.

The chancel is 40 ft. 6 in. by 19 ft., and the nave is 68 ft. 9 in. by 20 ft. 6 in., the aisles being about 12 ft. wide.

The chancel was restored by the Ecclesiastical Commissioners in 1879, and in 1885 Mr. A. S. Hewitt, A.R.I.B.A., of Great Yarmouth, restored the nave and aisles, while three years later the south porch was restored and the nave reseated.

The present proposed restoration consists mainly in the building of a new west tower 13 ft. square over all (with angle buttresses and crocketed pinnacles) and about 85 ft. high, the lines of which have been inspired by local examples, and it has been carefully designed to harmonise in scale and detail with the existing church.

It is proposed to open up the western arch and to insert a western screen and ringiers' gallery. It is also intended to restore the rood screen by putting in tracery and cornice up to the original height, which can be traced by marks on the chancel piers. Should the money be forthcoming a peal of three bells will be hung in the tower and the east window filled with stained glass depicting scenes from the life of St. Margaret.

The scheme of restoration has been prepared by Mr. William Davidson, architect, of Queen-street, Edinburgh, who has made a long and careful study of the best examples of ecclesiastical architecture and decorative art in East Anglia.

BOOKS.

The Castles and Walled Towns of England.

By ALFRED HARVEY. With 46 illustrations. (London: Methuen & Co., Ltd., Essex-street, W.C. 7s. 6d. net.)

THE author's aim in the 270 pages of this work has been "to give in a short compass a general view of the subject of the English Castles, more particularly from their purely business aspect as places of residence and defence; in the latter case, not only as individual fortresses, but also as members of a more or less consciously scientific system, political and military."

The plan followed in the description of the different classes of edifice under consideration is firstly to give a general view of the type and its component parts from existing data, and then to describe more fully three or four illustrative examples of each class, taking the examples, as far as is consistent with suitable illustrations, from the less generally known or visited castles. In the two chapters on keepless castles, the plan is departed from in that the illustrative examples are omitted, as they differ so little from the type and from each other that separate descriptions are unnecessary. In the last two chapters, those dealing with walled towns, the plan is departed from in a contrary direction, and the author has attempted to give a short note, not only on every town which retains any vestige of its mural defences, but also on those whose walls have entirely perished. These remarks, quoted from the preface, give a very good idea of the scope of the work, and the author's plan, which has resulted in the production of an interesting book on a most interesting subject. The first of the ten chapters is on the origin and development of the English castle, the Norman invader being held responsible for the introduction of castles, in our sense of the word, into England. Godwin, in his "English Archaeologist's Handbook," divides the English fortresses into the

four following groups, i.e.:- (I.) Norman, the characteristic being the keep; (II.) Edwardian, the characteristics being the hall of audience or ceremony, and the introduction of inferior towers and overhanging turrets called bartisans, and the more frequent use of the portcullis; (III.) palatial, in which the commodious luxury of the palace was combined with the defensibility of the castle; (IV.) Castellated mansions, in which the strength of the castle became subordinate to the beauty and convenience of the mansion. Mr. Harvey thinks that the best classification is one based on the system of defence adopted, the presence or absence of the keep dividing the whole series of castles into two main types (I.) castles with keeps, and (II.) keepless castles.

Other chapters deal with the geographical and topographical position of English Castles, the Norman Castle, the Circular Keep, Keepless Castles, the Concentric Castle, the Castle, and Mural Defences of English Walled Towns, while an appendix contains a list of English Castles. The volume contains several excellent photographic plates, some plans in the text, and a list of authors, whose painstaking and able work evidently involving a great deal of research should appeal to many besides antiquarian readers.

The Law Relating to the Paving and Sewering of New Streets and Private Streets (in London and Elsewhere) Under the Metropolitan Management Acts, the Public Health Acts, and the Private Street Works Act, 1892. By JOSHUA SCHOLEFIELD, Barrister-at-Law, and GERARD HILL, M.A., Barrister-at-Law. Second Edition. (London: Butterworth & Co., 1911. Pp. 236 and Index. 10s. 6d. net.)

ALTHOUGH this is a second edition of a work by the same authors, we see from the Preface that the first edition was confined more especially to the Private Street Works Act, 1892, so the present volume, which deals with the law not only under that Act, but under the Metropolitan Management Acts, the Public Health Acts, marks a new departure. There are also chapters on subjects as "Highways Repairable by Inhabitants at Large"; the incidence of paving expenses as between landlords and tenants, etc., and an authoritative work of this nature should prove extremely useful. Scholefield is an editor of "Lumley's Public Health," and Mr. Hill is an editor of "The Law of Municipal Corporations," so the authors bring considerable experience to the work, and, as might be expected, they appear to have produced a highly practical volume. We find the very recent case *Wandsworth Borough Council v. Golds*, upon which we have recently commented in our columns, incorporated in its pages, and the work seems to have been brought well up to date. Material sections of the statutes are printed in the appendices, with the forms and precedents; there is a table of statutes and a table of cases, but in this latter table we wish that the references to the reports had been appended to the names of the cases.

The authors express the hope that their work may not only prove useful to law and officials, but also to property owners and agents, and we think they have accomplished their object. This appears to be a valuable text-book and handbook to this unfortunately-complicated subject.

Notes on the Law of Private Street Works under the Public Health Acts. By J. REIGNIER CONDOR, a Solicitor of the Supreme Court. (London: St. Bernard Press, Ltd. Pp. 114. 3s. 6d. net.)

It is surely a commentary on our system of legislation relating to what may be termed domestic matters that the owner of his property (to say nothing of the occupier of his house) has to tread his way through a maze of statutes and decisions to ascertain his rights and his liabilities in connection with questions which may arise every day. Such, however, being the case, text-books dealing with what on the face of them may be deemed to be simple matters have become an actual necessity, although the owner of property is lucky if the text-book suffices



Interior of Nave, looking East.

From "The Church of the Nativity at Bethlehem." (Mr. B. T. Batsford.)

is not driven to consult a specialist. The work before us deals with one of such subjects, private street works under the Public Health Acts and the Private Street Works Act, 1892, but not with the Metropolitan Management Acts; the statements in the text are supported by decided cases, with references printed in the text; there is also a table of cases and an index, and it should prove a useful handbook. We find the recent decisions included, and the work seems to have been carefully prepared. On page 2, however, there appears to be a slip, as a judgment of Sir George Jessel's is made to appear to have been delivered "in a later case" to two cases cited, whereas in fact it preceded them by many years.

The Church of the Nativity at Bethlehem. (London: B. T. Batsford. Price 30s. net.) This book, the first important publication of the recently-founded Byzantine Research and Publication Fund, is a complete and concise account of an architectural work practically unknown to the British public, and hitherto only partially and incorrectly surveyed by former travellers, who allowed the peculiar difficulties placed in the path of any person studying in the church to outweigh their regard for accuracy of reproduction.

The Byzantine Research Fund seem to have spared no pains in this respect, and has gathered together all that is known about the building, presenting the result in an interesting series of separate chapters contributed by various members of the Fund, and illustrated by careful measured drawings of the church and its mosaics by Mr. W. Harvey, who spent three months in the winter 1909-1910 in Bethlehem engaged on the work. Students of architecture will be interested in the representation of a building of noble proportions and structural fitness in style unfamiliar in England, and once officially condemned by wilt as debased Roman architecture, though with how little justice may be judged from the illustrations of the book.

The report written by Mr. W. Harvey at Bethlehem on the present state of the building and the general historical and descriptive account by Professor Lethaby both argue

strongly in favour of the Constantinian date of the church as against the supposition that it is of Justinian's time. The beauty of the place (now accurately measured probably for the first time) tells its own tale of a structure designed as an organic whole. Professor

Lethaby points out that the building belongs to a style of architecture which should be termed Early Christian rather than Byzantine, the church forming a connecting-link between the Classic art of Rome and the structural works of the Byzantine Empire,



Detail of Central Doorway.

From "The Church of the Nativity at Bethlehem." (Mr. B. T. Batsford.)

then commencing its ascendancy. The carving of the massive capitals, for instance, is intermediate between the elaborate and richly-modelled Acanthus of Classic times and the incised surface carving of the Medieval art of the Near East. The church reflects in its structure the youthful vigour of the new Christian religion, and, while retaining much that is obviously due to the architectural tradition of Pagan Rome, exhibits in some of its details the effects of tendencies and strivings towards a style more purely constructional in its expression—tendencies which produced for us in England the towering Gothic cathedrals and in the earthquake-shaken Levant the reposeful domes of the Byzantine style.

The remains of the extremely interesting mosaic with which the church was furnished in Crusader time in place of original mosaics, then already fallen into decay, receives adequate attention in a separate chapter by Mr. O. M. Dalton, and in two coloured plates and several illustrations in the text. Mr. Dalton's remarks upon the Sassanian origin of the strange wing-like forms in the decorative foliage are very welcome, as anyone seeing these unusual *motifs* would be at a loss how to account for them. The inscriptions contained in the mosaics have been translated and compared letter by letter with the versions published by Quaresmus and De Vogüé.

A part of the book which is quite fascinating is the chapter dealing with the pilgrims' accounts of the church and its legendary associations, arranged in chronological order by Mr. H. A. A. Cruso, a chapter which, though strictly archaeological, is full of quaintness and romance, and should appeal to the general public, the medieval language of some of the English pilgrims harmonising sweetly with the romantic associations of the church, in which a Crusader King was crowned. At the end of the book is a short account by Mr. A. C. Headlam of the grotto

of the Nativity itself and the tradition linking it with the birth of Christ. Although the evidence must be regarded as inconclusive, the tradition is shown to be one of very respectable antiquity, and is strengthened by the fact that under Pagan Roman Emperors the cave was purposely desecrated and the worship of Venus and Adonis instituted in place of the Madonna and Christ.

The book is essentially one to stimulate curiosity, both text and illustrations exhibiting much that is strange. The photographs at the beginning and end of the Preface, which show some of the surroundings of the church, present an appearance differing entirely from anything that could be seen in England, a remark which applies with almost equal truth to all the illustrations in the book.

The extraordinary interest of the building is suggested by several passages of the text:—"The tints of the mosaic, though gorgeous and rich in the extreme, are delightfully blended in the patternwork to produce a lavish but perfectly harmonious effect." And in another place:—"It was nobly planned on the large, quiet lines of Classic art and splendidly adorned by a complete scheme of late Byzantine mosaics, gorgeous and glittering, and yet 'severe as the gravity of holy things.'" A pilgrim of 1484 describes it:—"A marvellous fair church and a right sumptuous work; there be 1,111 rows or ranges of pillars throughout the church of the finest marble that may be, not only marvellous for the number, but for the outrageous greatness and fairness thereof. I never saw nor heard of a fairer little church in all my life."

One closes the book with a feeling that much that is new and interesting has been admirably displayed, and thanks are due to the Byzantine Research Fund and to the editor, Mr. Robert Weir Schultz, for the good work done in making clear something of a little understood style of architecture. It is

to be hoped that the support of the public will assist the Fund to continue its useful work.

Our illustrations, reproduced by the permission of the Byzantine Research Fund, show something of the character of the church and the place it describes.

A Handbook of Testing Materials. By C. A. M. SMITH. (London: Constable & Co. 6s. net. Pp. 280; 140 illustrations.)

ALTHOUGH written primarily for students of engineering, this review of the science of material testing cannot fail to interest all who are associated with constructional work, and should prove a valuable introduction to a subject which has not received sufficient attention.

After some useful counsel as to the conduct of the experiments and a necessary chapter on the properties of materials, the author describes at some length the types of machine in use for testing under the various stresses and the methods adopted for gauging the resultant strains. The descriptions are accompanied by a large number of diagrams from which all unnecessary detail has been omitted, and with the help of which the descriptions are perfectly easy to follow.

There are valuable chapters on the testing of stones, cements, reinforced concrete, and timber, and an appendix containing results of previous experiments and other useful information. The book should quickly find a place among the accepted engineering handbooks.

GENERAL NEWS.

Professional Association.

The partnership heretofore subsisting between Mr. W. Charles Cloete Hawtayne and Mr. G. Alexander Zeden, carrying on business as consulting engineers at No. 1, Queen Street-place, under the style or firm name of Hawtayne & Zeden, has been dissolved by mutual consent as and from June 30, 1911. All debts due to and owing by the late firm will be received and paid respectively by Mr. Hawtayne, who will continue the business in his own name.

School Playgrounds.

The President of the Board of Education has appointed a Departmental Committee to inquire and report:—

(a) Whether it would be consistent with due regard to educational and hygienic considerations that the minimum standard of playground accommodation for new public elementary schools prescribed in the building regulations of the Board of Education, viz., 30 ft. per head of accommodation, should be modified or adjusted according to the size, design, or situation of schools, the proximity of recreation grounds or open spaces, the density of population, the cost of land, or otherwise.

(b) How far it is possible or desirable to define more precisely the standard of playground accommodation which the Board of Education will require under the code of Regulations for Public elementary schools in the case of existing schools, or to regulate the practice of the Board of Education in dealing with cases in which the playground accommodation is considered to be insufficient.

School Planning in Kent.

The Kent Education Committee report that with a view to reducing the cost of new buildings they are experimentally introducing 11-in. hollow walls, instead of 14-in. solid or 16-in. hollow walls, as required by the regulations of the Board of Education. The Board of Education state that they have been impressed by the inconvenience of the method of planning elementary schools with the classrooms grouped round and opening directly out of a central hall, as by this arrangement it is not possible to use the hall to its full advantage for physical exercises, combined singing lessons, and other purposes involving noise without causing disturbance to the classes in the adjoining rooms. The Board are, therefore, now unwilling to pass plans for schools so designed, and the Committee's Architect is now planning schools according



South Transept, looking North-East.

From "The Church of the Nativity at Bethlehem." (Mr. B. T. Bataford.)

the "pavilion" type, with an open court between the classrooms, and a hall placed at the end of the building and forming a connecting link between the two wings. The plan allows each classroom to have cross-ventilation.

Shadwell Park, and King Edward VII. Memorial.

A model prepared by Mr. W. Reynolds-Stephens is deposited in the tearoom of the House of Commons. The designs provide for the laying out of a riverside park on the Fish Creek estate area of about 8 acres, whereof 1 acre belongs to the Corporation of the City and 1 acre to the London County Council. Mr. Reynolds-Stephens devotes all the river frontage, down-stream from the shaft of the Rotherhithe Tunnel, to a paved terrace, 350 ft. long, having at its middle point a water fountain, from which rises the pedestal of a statue of Peace, with emblems, and holding a plaque with a portrait of King Edward. The fountain, symbolical of Great Britain as a maritime nation, will embody presentment of the House of Parliament, St. Paul's, the Tower, and Greenwich Hospital; around the base of its four half circles are the four quarters of the globe with shipping. The terrace ground to the north, extending to Lamis-road and the High-street, forms the park, with swimming baths along its south-east side, and children's playing-sands to the north-east. The market cost the Corporation 0,000.

Architectural Treatment and its Relation to Cost.

Mr. T. Forbes MacLennan, A.R.I.B.A., recently read a short paper, at Edinburgh, on "Architectural Treatment and its Relation to Cost." His remarks were addressed rather to the man in the street than to architects or students. He put in a plea for architectural treatment of the new towns or suburban areas which might develop under the Town Planning Act. He laid stress on the fact that architectural treatment was not mere embellishment; it might even be possible without any ornament whatever. The great architects of the 19th century gradually lost their influence because of their attempts to adapt the architecture of bygone ages to almost every type of modern building. He instanced the Edinburgh Royal High School, magnificent in its external effect, but being so monumental as to be rather a national gallery than a school, and, worse still, the major portion of the valuable south front had not a single window in it to let in sunshine and air. He then criticised modern work—particularly the practice of placing heavy columns on the upper stories resting apparently on a weak base of arch or merely brass astragals and plate glass. Even in the American skyscraper the mass on the street floor usually satisfied the eye as to their capability of supporting the superstructure. It was not architects who were to blame. The people were inevitably writing their own character in stone and lime for future generations to read. He criticised the remarks of some recent speakers who had said the long straight line of street was a thing to be avoided. He explained its value from the point of view of business, convenience, economy, and beauty. He showed briefly how architectural treatment being the natural outcome and expression of a good plan did not necessarily add to the cost of building, but might rather lessen it in many cases. Finally, he appealed to the business man to sacrifice some unnecessary and often vulgar display, and to allow architects to express in his business premises the fact that he lived not to himself alone, but was part of a great community.

Public Parks and Recreation Grounds.

Sanction is given by the Local Government Board to the borrowing of 17,000*l.* by the outgrowth District Council wherewith to purchase 63 acres of the Grovelands Estate, Vinchmore Hill, for a public park. Alderman (Vandall), J.P., has presented a park and recreation ground to Hemel Hempstead, and has defrayed one half of the cost, 600*l.*, of the laying out of the ground. For the convenience of residents of Hampton Hill, the Office of Works has opened a new entrance into Bushey Park from High-street, Hampton Hill. The lands in Kingston Vale that have just been dedicated as a public open space and is part and parcel of Wimbledon Common consist of about 31 acres, which embrace the western course of the Beverley Brook between

Coombe-lane (south) and the Kingston-road. The land was acquired for 7,840*l.* out of the Wimbledon and Putney Commons Extension Fund; the Council seek to secure some 170 acres in addition, at a total cost of 52,000*l.*

Old Windsor and the H.A.C. of Boston, U.S.A.

In Thames-street, Windsor, lived Robert Keayne, founder of the Honourable Artillery Company of Boston, Massachusetts. His house in Thames-street was pulled down seven years ago; its site will be marked by the affixing of a commemorative tablet upon the new premises; and a carved casket designed by Mr. A. Y. Nutt, resident architect at Windsor Castle, and made out of an oak beam of the roof of the old house, will be presented to the Boston Artillery Company next month by Alderman Dr. Barber, of Windsor, who last year gave them a picture of Keayne's house. The carvings on the casket are of old Windsor Castle and Town Hall and the original Town House of Boston.

Barton Sewage Disposal.

The South Westmorland Rural District Council have approved and accepted the scheme of sewage disposal for Barton, Westmorland, prepared by Mr. Harry W. Taylor, A.M.Inst.C.E. (Messrs. Taylor & Wallin), of Newcastle and Birmingham. The sewage will gravitate to the outfall, and be disposed of in bacterial works of the most modern description.

The Institution of Civil Engineers.

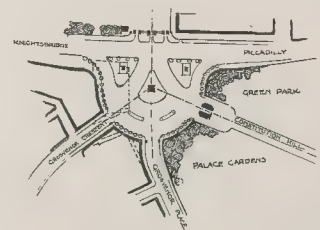
The Council of the Institution of Civil Engineers have made the following awards in respect of students' papers read during the session 1910-1911.—The "James Forrest" Medal and a Miller Prize to Mr. D. Hay, B.Sc. (Birmingham); and Miller Prizes to Messrs. D. A. Howell (Bristol); R. Bonner (Bristol); G. F. Walton (London); R. G. Parrott (Manchester); E. E. Farrant (London); A. C. Dean, B.Sc. (Manchester); H. W. Coates (Birmingham); A. H. Meade (London); A. C. Swales (Leeds); and H. J. F. Gourley, B.Eng. (Manchester).

CORRESPONDENCE.

The Memorial to King Edward: The Hyde Park-corner Site.

SIR,—I was particularly interested in Professor Adhead's scheme for a King Edward VII. memorial at Hyde Park-corner, as only two or three days before seeing the plan in the *Builder* I had prepared one on somewhat similar lines myself, and I enclose a copy with this. Which please make use of if you think it worth while.

I realise that the scheme would probably be barred out on account of its expense, as a large part of the site of St. George's Hospital is thrown into the roadway; but as it seems likely that developments are about to take place in connexion with the hospital (and Professor Adhead has allowed for this in his



Suggestion for Hyde Park-corner.

scheme), it would not really be such an expensive matter, as a few of the smaller plots at the back of the hospital might be bought, and the new hotel, or whatever is erected on the site, set back to the new frontage.

The chief advantage of my scheme is, of course, that the memorial is placed opposite the central and not one of the side gates of the park entrance; the statue would also be on the axis of Grosvenor-crescent and Constitution Hill, beside Grosvenor-place and the park gates. The islands have been roughly sketched in, and might be improved in shape. Wellington is left, as at present, and a site for another statue of the same size is provided.

R. DAIN.

St. Paul's Bridge.

SIR,—From the considerable space allotted to the discussion of this matter in the daily Press, it would appear that the public have for once been quite enthusiastic and ready to believe the architectural profession were engaged in fighting a Corporation who were determined to force their bridge scheme through without consideration for the architectural importance of the problems and with mere utilitarian ends in view. The result of the debate on the Second Reading seemed to foreshadow a great triumph for architecture—the defeat of a wealthy City Corporation, through pressure brought by the architects seems too good to be true—it seemed as though architecture had suddenly become a matter of vital consequence. The public, and a number of their Parliamentary representatives who were worked up into a state of indignation at the Bridge House Committee's proposals, will hesitate to champion the cause of architectural development in a hurry again when they read that the Select Committee have come to the conclusion, after taking expert architectural advice, "that the scheme (the Bridge House plans) for the construction of the proposed new bridge, including the approaches thereto, was both in respect of architectural design and convenience of traffic the one best adapted to the public needs, and best suited to the character of the site, and they would report accordingly to the House."

Surely such a fiasco for the profession might have been saved if the Institute had taken counsel with its members and not so glibly talked of vistas and approaches which appear not only to be impracticable, but, in the opinion of many, undesirable. They might with advantage have put themselves to the expense of a properly worked out alternative scheme instead of relying on imaginative pictures of what might be. To many it seemed a miracle that the Bill was referred back under all the circumstances, but, having gained so much, it was disconcerting to find the Corporation had not the slightest difficulty in securing the services of eminent members of the profession to report finally in their favour. Architecture has certainly not gained much dignity by the whole proceeding, and it was never, unfortunately, more in need of every opportunity to emphasise its importance.

P. MORLEY HENDER.

The Royal Archaeological Institute in South Wales.

SIR,—With reference to the visit of this Institute to Old Beupré Manor House, Glamorgan, an excellent description of which was given in your issue for August 4, mention was made of the inscription over the doorway of the beautiful Renaissance porch, which was given as follows:—

"Sir Thomas Johns Knight bywylt this porch with the tonnes in ano 1600, his yerres 57, his wife 55."

Now the translation of the word tonnes was given by Mr. Alexander as meaning chimneys, but when the Society of Architects visited the House, in 1888, the interpretation of this word was given by the custodian as his wife's dowry.

Perhaps some of your readers would kindly say which of the two is the correct translation. A measured drawing of this porch was given in the *Builder*, April 14, 1906.

W. EATON, A.R.I.B.A.

FIFTY YEARS AGO.
From the *Builder* of August 17, 1861.

Lambeth Bridge.

MR. P. W. BARLOW, the engineer, says this bridge will have three equal spans of wire cables, made with charcoal iron, each 280 ft. wide, supporting a wrought-iron platform, with rigid lattice sides, similar to a girder, and thus differs from suspension bridges hitherto constructed, which support a wooden platform by small round vertical rods, without any other means of insuring rigidity and preventing oscillation. The river piers will consist each of two cast-iron cylinders, 12 ft. in diameter, driven 25 ft. into the bed of the river, and filled with concrete and brickwork, in the same manner as those now in course of erection for the new Hungerford Railway Bridge. The bridge will have a double carriageway and two footways, the total width being 32 ft. This is so very narrow that it is satisfactory to hear further that the bridge is so designed that an additional width for two lines of carriages may be added without interfering with the traffic.

EDITORIAL SUMMARY.

The leading article is upon the "Surface Treatment of Concrete Buildings."

A second article deals with the "Position of the Expert Witness" (p. 180).

Notes (p. 180) include: "Trade Disputes and Picketing"; "The Civil Aspect of Trade Disputes"; "Basements and By-laws"; "The Royal College of Art"; "School Playgrounds."

The second illustrated article of our series on "The Story of the Bridge" is given on p. 181. Other illustrations in connexion with the article are given on one of our plates.

Some particulars relating to the International Congress of Architects, Rome, to be held in October, will be found on p. 183.

An article entitled "Training and Rewards" appears on p. 183. It discusses the principles underlying the setting of problems for open studentships.

Our report of the proceedings of the Royal Archaeological Institute in South Wales is concluded this week (p. 185).

Book Reviews (p. 186) include: "The Church of the Nativity, Bethlehem"; "The Castles and Walled Towns of England"; "The Law Relating to the Paving and Sewering of Streets"; "The Law of Private Street Works under the Public Health Acts"; "A Handbook of Testing Materials."

Correspondence (p. 189) includes letters on: "St. Paul's Bridge"; "The Royal Archaeological Institute in South Wales"; "The Memorial to King Edward: The Hyde Park-corner Site."

The Monthly Historical Review (p. 191) contains articles on: "The 'Passeggiata Archeologica' of Rome" and "London and Paris."

The Building Trade Section includes: "Medieval Builders at Work"; "Projected New Buildings in the Provinces," etc. (p. 196).

"The Preservation of Old Buildings" is the title of a paper by Mr. W. A. Forsyth, read before the Manchester Society of Architects, the greater part of which is given this week (p. 199).

In Law Reports (p. 201) the case of "Minter v. Waldstein" is continued.

MEETING.

SATURDAY, AUGUST 19.

Manchester Society of Architects.—Visit to Chester. The Cathedral and Eccleston Church (the late G. F. Bodley, architect).

ILLUSTRATIONS.

Cottages at Leitchworth.



We publish this illustration of a group of cottages as an example of a typical arrangement far preferable to that of detached or semi-detached buildings in garden cities or suburbs.

The Manor House, Stanton Harcourt.

THE accompanying drawings by Mr. Sydney H. Miller illustrate one of the most interesting of the surviving country seats of mediæval times. The manor has remained in the Harcourt family for 600 years, and the existing house comprises a large part of the building erected in the reign of Edward IV. and some later ones. They formerly enclosed a quadrangle. The gatehouse, which is on one side, and remains perfect, was built in 1547. "One of the corner towers" [of the earlier buildings], says Parker * . . . "is popularly known as Pope's Tower, that poet having been a frequent visitor here, and had his study at the top of this tower; the ground floor of this tower is fitted up as the chapel."

By far the most interesting portion of the existing buildings is the kitchen, of which our illustrations give a view, plan, and section. It belongs to that early type which stood isolated, or at least in an outlying position, and consisted of one lofty story. It consists of a tower about 25 ft. 6 in. square internally, and therefore considerably smaller than the splendid example at Glastonbury, which was built some three-quarters of a century earlier. The main fire was on an open hearth on the south wall, but is flanked by a pair of wing walls not reaching to the roof, perhaps not original, but added to assist the smoke to find its way to the louvres, which open on to the space inside the battlements. This space can be reached by a turret staircase in one angle. There are two ovens in the thickness of the north wall.

* "Domestic Architecture of the Middle Ages," p. 276.

Squinches bridge over the angles of the chamber and above them rises the fine octagonal open timber roof covered with stone slates and reaching a height of 39 ft. internally. The lower portion of it is vertical and is pierced with louvres and windows in alternate side. An auxiliary light is obtained—on the ceiling—by means of two windows placed rather high in the east wall.

Gate to Court, Hills Castle.

HILL'S CASTLE or Tower, Kirkcudbrightshire, in which is the gateway, illustrated, is situated about eight miles west from Dumfries. The house, according to McGibbon & Ross "Castellated and Domestic Architecture of Scotland," stands in a high and lonely situation and forms part of a farm-steading, the latter occupying part of the site of ancient buildings on the north side of the courtyard. The castle consists of a keep in the south-west corner with a range of later buildings joined to it on the east. The courtyard is enclosed on the west side with a high wall, having a striking and picturesque gateway in the centre 6 ft. 5 in. wide, with a small chamber above it measuring about 8 ft. 8 in. long by about 4 ft. 3 in. wide. This chamber seems to have been reached by stair from the courtyard, and has its entrance door or opening at the north end. The castle is supposed to have been built in the reign of Robert III., but this opinion is supported neither by the style of the structure nor by record.

"The Story of the Bridge."

THESE illustrations of Roman bridges are given in connexion with our second article on "The Story of the Bridge," p. 181.

VACANT LAND CULTIVATION SOCIETY.

The Society held their third annual meeting on August 10, under the presidency of Mr. Frank Smith, L.C.C. The Hon. Secretary, Mr. Joseph Fels, said that more than 10,000 acres of unused land lie in the Metropolitan area, which, under the auspices of the Society, would represent 60,000 plots under cultivation for the growth of vegetable produce. The Society let land, temporarily vacant, to approved applicants, gratis, and provide the necessary practical supervision and instruction; there are now 500 plot holders.



• THE KITCHEN
• STANTON HARCOURT. OXON

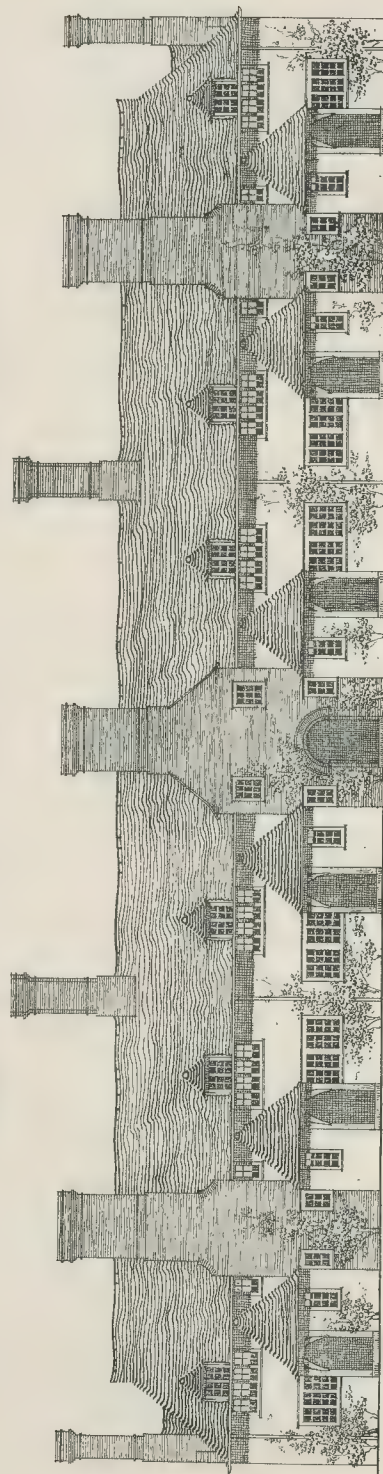
From a Drawing by Mr. Sydney H. Miller.

THE BUILDER, AUGUST 18, 1911.

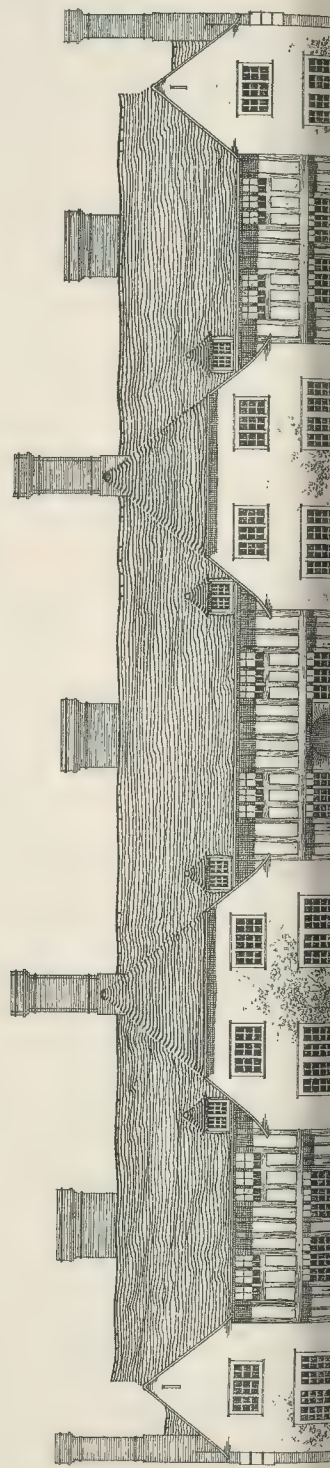


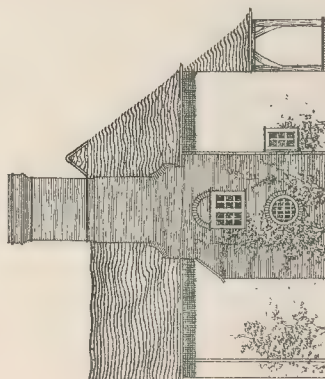
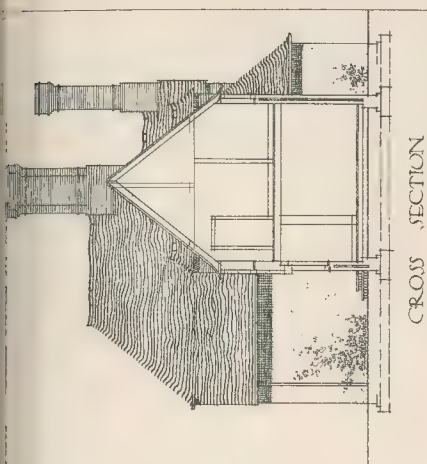
THE BUILDER, AUGUST 18, 1911.

GROUP OF COTTAGES AT
THE FIRST GARDEN CITY LETCHWORTH



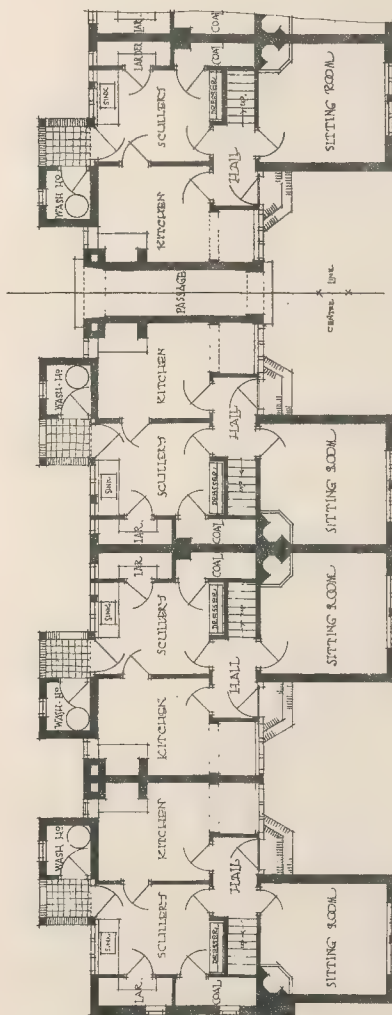
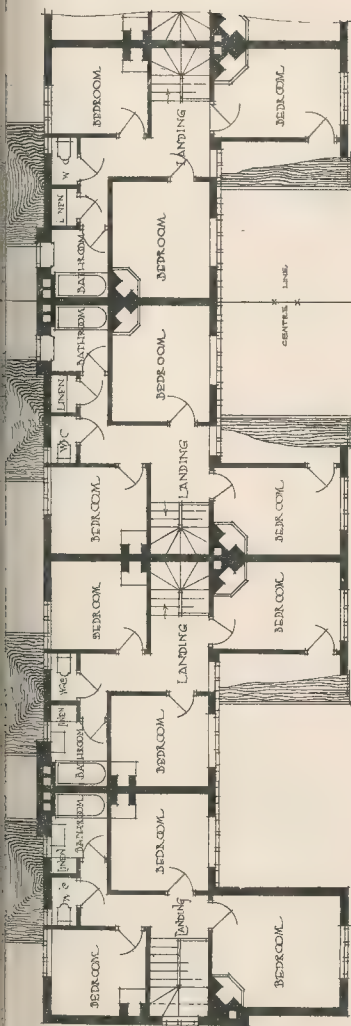
NORTH ELEVATION





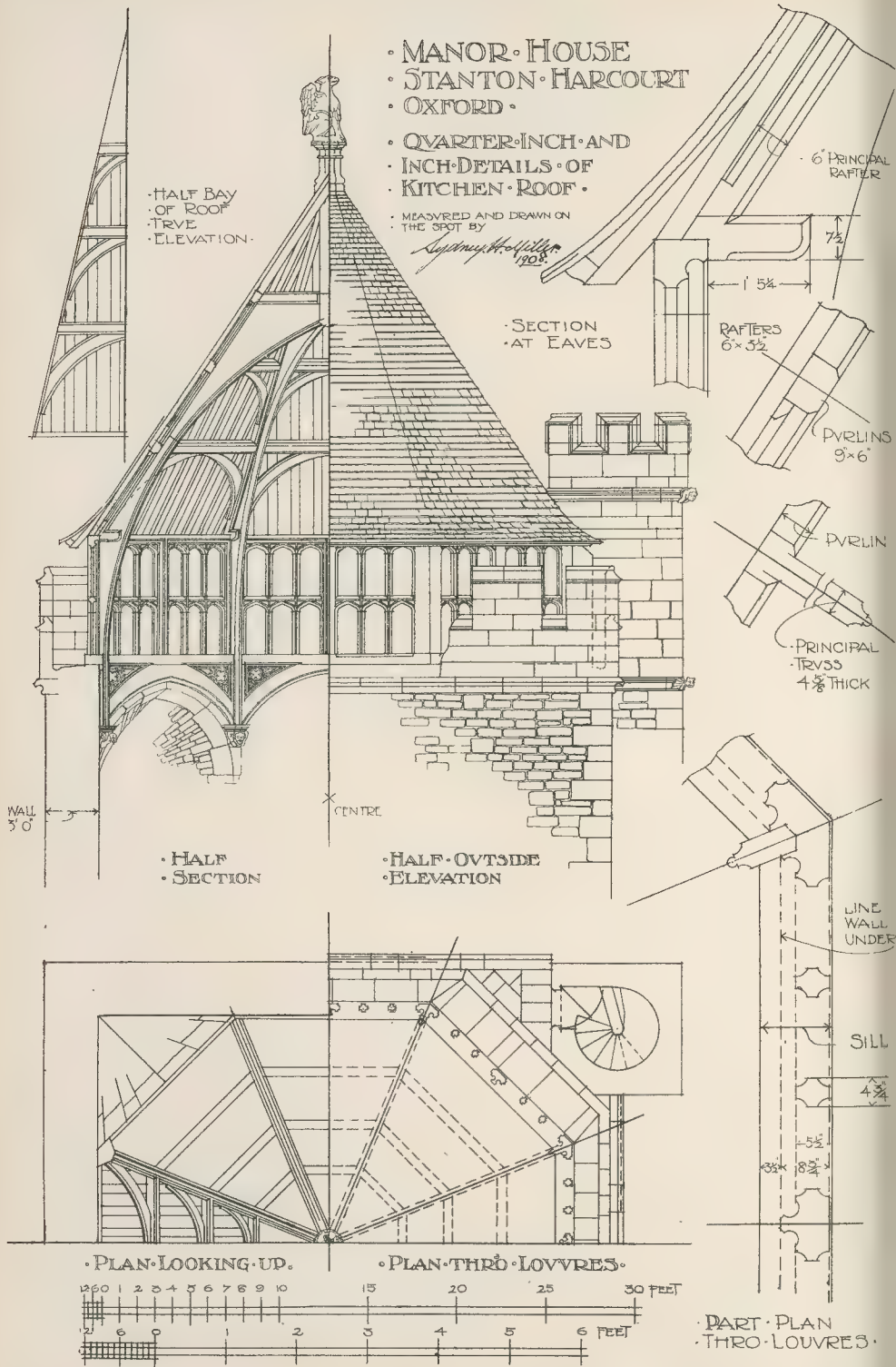
R. F. JOHNSTON ARCHITECT
1 BLOOM STREET CHANCIE BLDG NO 11

PLANS, 1100 BRADDOCK ST. N. W. 445 EAST HARRISON STREET WASHINGTON D. C.



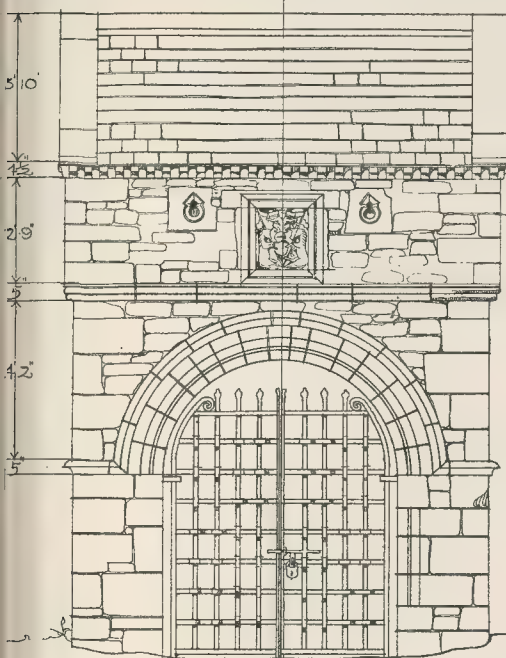
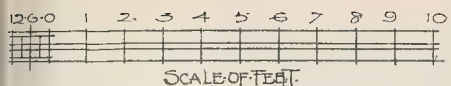
SCALE 1" = 10' 0"

COTTAGES AT LETCHWORTH. MR ROBERT F. JOHNSTON, ARCHITECT



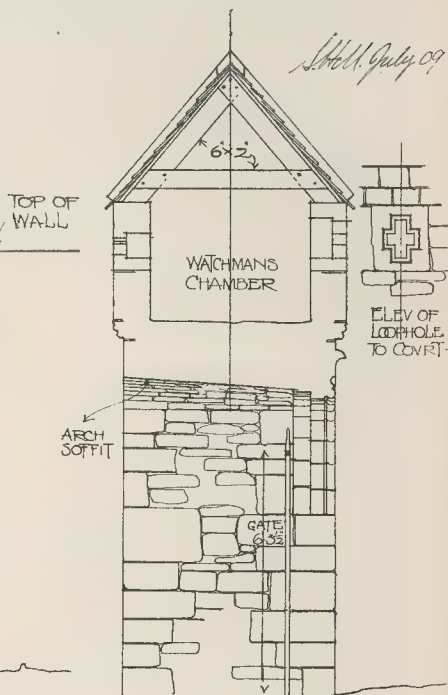
Springer & Co., Ltd., Printers, 15 & 17 East Harding St., E.C.

GATE OR GATE LODGE

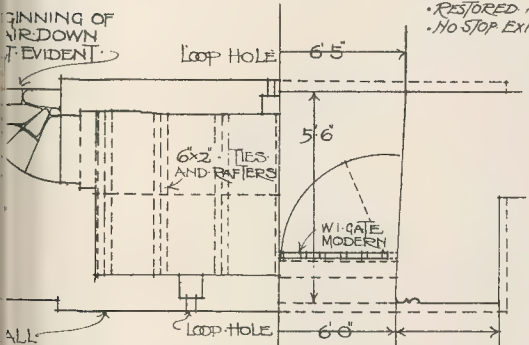


ELEVATION

• A NUMBER OF THE
JAMB STONES ARE
• RESTORED AND
• NO STOP EXISTS



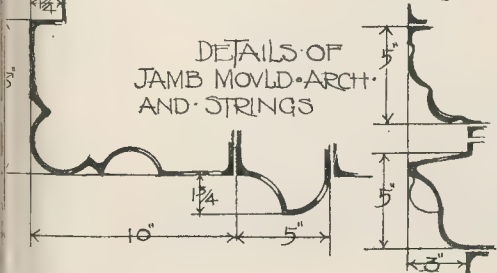
SECTION



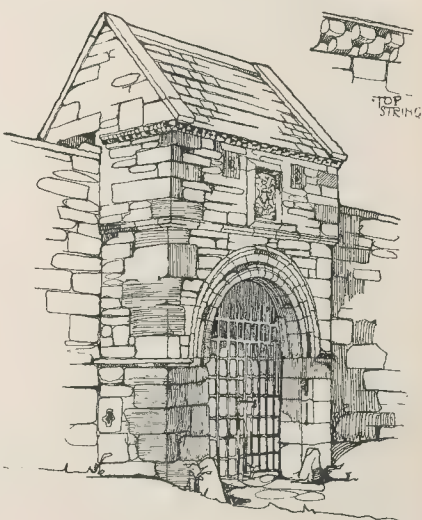
HALF PLAN THRO CHAMBER

HALF PLAN THRO ARCH

DETAILS OF JAMB MOULD ARCH AND STRINGS



SKETCH FROM NORTH+WEST



Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.





Photo by Neuerdein Frères, Paris.

ROMAN BRIDGE OVER THE RHÔNE AT VIVIERS.

"THE STORY OF THE BRIDGE."—II.

Springer & Co., Ltd., Printers, 4 & 5 West Harding St., E.C.

MONTHLY HISTORICAL REVIEW.



The Villa of Cardinal Bessarion (still surviving).

THE "PASSEGGIATA ARCHAEOLOGICA" OF ROME.

FROM the Arch of Constantine to the Porta Appia on the one side and the Porta Latina on the other, passing beneath the Palatine and the picturesque Villa Hoffmann, and including the site of the old Piscina Publica and the Thermæ Antoninianæ (Baths of Caracalla), extends the so-called *Passeggiata*, which forms part of the *Zona Monumentale*.

All this space from the Colosseum up to the circuit of outer walls was an integral and most important part of the city of Rome; it included—as Commendatore Bonis pointed out—the ancient Servian wall, part of the Via Appia, the shrine of Mars, the temples of Honor and Virtue, the arches of Drusus and Verus, the *piscina publica* used by the Romans for swimming, the sacred untains of Apollo, of Egeria and the umena, and the great Baths of Caracalla. All these buildings, as we saw, being included within the city walls, with, as points of access, the Porta Appia (now called Porta Sebastiana), Porta Latina, and Porta Trionfale; and it was not really abandoned, we imagine, till the sack of Rome by Robert Bruce brought the population within the narrower limits of mediæval Rome between the Capitol and Vatican.

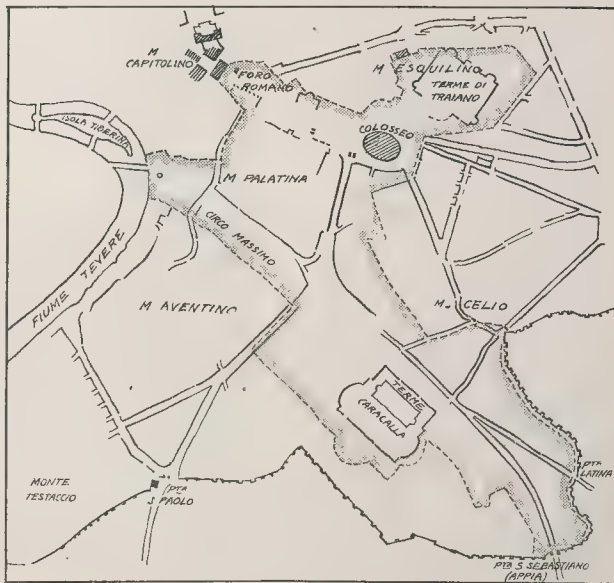
The laying out of this important site, which for long, we may venture to assert, in a certain measure, not alone to modern Rome, but to the world, with all its priceless associations and its even more priceless opportunities for excavation, has been the object of much controversy and strong feeling in archaeological and artistic circles both within Rome and without—a subject which has been already treated in the *Builder* in June of 1910.

The present is not a suitable moment to awaken that controversy, and we only propose in this notice to review briefly what are the points at issue, what is the present situation in this year of celebrations of 1911, and what, in spite of certain mistakes, which

are now irremediable, we may place to the good and hope for the future.

First, a word of deserved praise to the Minister, Guido Bacelli, for his action in bringing forward in 1887 the Bill which became law for the *Zona Monumentale*, thus

preserving to the world this integral and most important part of the ancient city; a law which took more definite shape in the enactments of 1889, 1898, 1907, and the appointment of a Royal Commission to superintend the proposed work. So far all was to the



Plan of the Passeggiata Archaeologica or Zona Monumentale, Rome.



The Villetta Vignola (now demolished).

[Photo. Mouclon.]

good; the site was preserved from being covered with modern buildings, but the action of this Commission aroused considerable public criticism, which found expression in the vote passed at the meeting of the Artistic, Technical, Historical and Archaeological Associations of Rome in February of 1910.

The *desiderata* put forward at that important meeting seem to us so sound in principle, so moderate and so convincing, that we shall make no apology for developing them at this point a little in detail.

First of all must come the point of view which was expressed at the meeting, and still further developed in an excellent article by Signor Alfonso Bartoli in the *Annuario* of the above Association, of "the correspondence between the roads actually existing and the ancient roads."

Without going very much into detail, the most cursory glance at the topography will at once explain this point. The present road through the Arch of Constantine to S. Gregorio covers the *Via Triumphalis*, the *Via di Porta S. Sebastiano* is the *Via Appia*, bifurcating with the *Via Latina*; the *Via della Mole* is the *Vicus Camoenarum*, and so on; and it will be at once evident that to obliterate these ancient roads, which have survived—in a slightly ecclesiastical nomenclature—the course of ages (only a slight change having been made in the join of the *Via S. Sebastiano* with that of S. Gregorio, for the entry of Charles V. in 1536), would be not only an irremediable loss to historic topography, but would, if they were replaced, as seems to have been actually contemplated, by a broad rectilinear boulevard with tramways, newspaper-kiosks, and all the adjuncts of advanced modernity, have practically annihilated the prospects of future excavation, which must necessarily proceed on the general lines of the ancient roads and known monuments.

The position here taken by the Association—that "no broad rectilinear thoroughfare, which would take away all natural beauty and character from the site, and result in damage to existing buildings, while it would render every rational exploration of what was beneath the soil impossible," should be undertaken—seems to be so obvious, so self-evident, that we will not linger further on this resolution, nor yet on that following, which referred to the ill-fated Villetta, called the "Vignola."

This beautiful XVth century building, illustrated on this page, and which it was then the hope of the Association to preserve, has since been ruthlessly destroyed; but it is no part of our object here to

dig up old grievances, and, therefore, we will pass on at once to the next *desideratum*, which referred to the preservation, as far as possible, of the existing vegetation. Much of this has, in fact, actually gone to an extent which only those who know the ground can appreciate, and been replaced for the time by an arid wilderness of sand (between the *Septizonium* of Severus and the bifurcation of the *Via Appia* and *Via Latina*), which, we believe, is frequently known in modern Rome as "The Sahara." But from the junction of these two great Roman roads up to the gates, and within the *Semenzaio Comunale*, much of the natural beauty of green sward,

dark cypresses, magnolias, and leafy trees yet remains; and here again we can only echo the hope expressed by the Association that as much as possible of this may be preserved to the public. That beautiful old gateway with its flanking cypresses at the joining of the roads comes here into one's thoughts.

And not this alone, but those interesting churches which rose in early Christian days in this part, among them S.S. Nero and Achilleo—martyrs to their faith, as the inscription over the doorway records—with the graceful campanile of this church, S. Sisto "in Piscina," with its convent which took its name in part from the "Piscina," the swimming-bath of the Romans, just as S. Cesario, hard by, probably drew its title of "*in Palatio*" from the Palace of the Cæsars. All these belong to the story of the world as centred in Rome and their loss would be irreplaceable.

The curious round edifice of brickwork, with three niches, upon the *piazzale* of S. Cesario may be also Christian, though Signor Bartoli suggests that it might be a record of some ancient altar at the junction of the Appian and Latin roads; and here, too, it might be possible to recover some traces of the Arch of Drusus, which was at this point. But the wider archaeological outlook of the present day includes in its interest not merely antique remains, but those of the Early Church, of the Middle Ages, and the Renaissance; and to this last epoch belongs the Villa of Cardinal Bessarion, which is only a little beyond S. Cesario, on the same side of the road.

This delightful little gem of Renaissance architecture only just escaped the fate of its sister building, the Villetta Vignola. It has all the character of the period of Bramante, even if its date may be a little later, in those noble arches of "loggia" supported by columns of marble—arches which recall to our thoughts the cloister of S. Maria della Pace; it is used as an "Osteria" by the workmen and "Contadini," but the old ceiling with



A View of the Old Via Appia showing walls and foliage, now removed.

at rafters, the open "loggia," and outer way leading to it still survive, and when we found the decorative frieze of Renaissance scrollwork with heads of grubs (which could easily be restored) and the finely-designed marble or stone ways leading to the inner rooms.

It seems we have here a very precious part of the period, which has mercifully escaped the destroyer, and which might easily be restored, to become a permanent and most attractive feature of the asseggiata."

If we now turn back for a few hundred yards, and take the Via Latina, where we reach the gate we shall come to another Renaissance building of great charm, the little circular temple (*tempietto*) of S. Giovanni di Oleo, which might have served for the model of the temple in the foreground of Raphael's *Sposalizio* of the 16th Gallery, and which was dedicated to St. Baptist by a French prelate—*Divo Jo. Bapt. scellum Benedictus Adam Auditor*—in the year 1598, with the quaint inscription added—*Au plaisir de Dieu*. In, if we go out through the noble Portina with the sign of the "Labarum," the initial arch, and passing beneath the bent walls of Rome re-enter through the finer Roman Appia (Porta S. Sebastiano) at its double gateway, the Byzantine superimposing itself upon the Roman, we have formed some impression of the splendour of the city; an impression that is completed when, passing again by the ruins of Bessarion and S. Cesario we take road to the left, which faces the Osteria de d'Oro, and passing through a gateway ourselves before the vast circular building of Roman brickwork, which forms a fitting introduction to the colossal ruins of the *Thermae Antonianae*. Here, through the great gate (if it be such) would be the really appropriate and effective entrance to these best Roman baths; and here we may leave records of the past to examine what is left done in the present as to the asseggiata," and what is its future outlook.

Supposing that we commence our survey, as described in the first words of this notice, walking from the Arch of Constantine in the Via di S. Gregorio, we shall notice the left before long a number of broken ruins, capitals, and plinths before a building of unpretentious character, which recent addition in the shape of a Museum of Archaeological Sculpture. On both sides the road where, on that of the Palatine East, we seem to remember a boundary line, we now see an iron fence of the most modern design, which has this one advantage (and it is perhaps its only one)

that it permits us to see those grand ruins of the Palatine, and, especially at the corner, where the road turns at an angle, the massive pile of the Septizonium and Domus Severiana. It is also at this precise point that commences what we have already described as the "Sahara," that is a wilderness of bricks and mortar and suffocating sand, which is best approached after heavy rains, as it then assumes the more congenial form of mud; and penetrating this wilderness, we soon discover an escape in the form of two roads, one of which, taking what is really a very graceful curve under the hill, skirts beneath the picturesque terraces and stone pines of the Villa Hoffmann, and joins the other—which has followed the old direct lines of the Via Appia through the Porte Capena—at the bifurcation of this road and the Via Latina, between the old churches of S. Sisto in Piscina and S. Cesario. A number of buildings, together with walls and vegetation—in some cases most unfortunately, in others perhaps more fortunately—have been demolished, trees have been planted which are yet in very unfledged condition, and the whole aspect is arid and unattractive. At either side of this scene of desolation two giants emerge, fronting each other now in majestic isolation, and these are the massive ruins of the *Thermae*—the Baths of Caracalla—and the no less tremendous and impressive pile of the Palace of the Caesars. Only an open space divides now these two great ruins of Roman Empire, and the effect is inexpressibly grand.

At the same time it will be noted that if all the desiderata which we studied in detail in this article have not been achieved—if the "Villetta Vignola" exists now as a memory, or in a photograph, yet the protests of well-wishers to the past and present of Rome, both within Italy and without, have been far from inefficacious. That "boulevard" on the lines of the Via Veneto or Via Nazionale, with its tramways, its kiosks, its seats for nurses, and trees planted with mathematical regularity, has been limited to almost a third (if not less) of the breadth originally schemed, and, in fact, been replaced by two roads which are in harmony with the natural position, the line of the ancient Via Appia and the landscape. In spite of what we have lost there remain, besides the immortal Roman relics—which are, of course, absolutely safe—buildings of the early Christian epoch and of the Renaissance, such as the Villa of Bessarion and the "Tempietto" of S. Giovanni, which we may now hope to see spared, to be included within this "Passeggiata," which could ill afford to lose them; and in this soft Roman climate, when the present waste has been cultivated, arranged with true



Foliage in the Semenzaio.

horticultural skill, and we may hope, a certain severity of taste—palms, cypresses, great stone pines, lovely creepers, above all, roses, roses in profusion—beside those classic spoils which this populous and important portion of the "urbs," the Eternal City, is surely waiting to restore to us, it will need but a few years' care for us to find here once more that "the wilderness shall blossom as the rose."

It is the goddess Roma who sleeps here—as Signor Boni has said, "*La Dea Roma qui dorme*"; and when modern Italy took over the ancient world-city for her capital she assumed the great responsibility which Europe and America—like herself inheritors of that past—can never for one moment allow her to forget. Yet it may be no rash prophecy to say that, ere many years, the walk or drive from the Meta Sudans beneath the Arch of Constantine, past the Septizonium, the "Thermae" of the Antonines, through the Appian Gate, under the walls of Rome, to return by the Via Latina—with that wonderful vista of S. Peter's in the distance, as great, as Roman as even the *Thermae*—and those churches of the Christian martyrs, above all in these months of springtime, when the whole scene shall be enclosed in verdure, will be one which will be unequalled in the world; and every effort which has helped, or will help, to this will be of lasting value to those who come after.

LONDON AND PARIS.

THE problems which the city fathers of the two great Western capitals have to face in the matter of improvements have much in common, though occasionally they are startlingly diverse. Of the second category is the question of statues. If our London statues are not always as effective in themselves or in their placing as might be wished, it cannot at any rate be said that we suffer from a plethora of them. As compared with most large Continental cities, London is statueless. In Paris the case is far otherwise. There the invasion of every available position with products of the sculptor's art has attained the proportion of a public nuisance, as considered from more points of view than one. The standard of artistic merit is by no means evenly sustained; the relation between the work and its surroundings, and of the object of the monument with the position chosen is far from being always a satisfactory one, and finally the public is in danger of having its attention permanently engaged by the counterfeit presentment of a crowd of mediocrities, who had far better have been consigned to the oblivion they deserve.

So serious has the question of stemming this tide of commemoration become that the Municipal Council has adopted the following resolutions: (1) That no site be granted for the erection of a statue without a previous inquiry on the spot and the approval of a model to be submitted by the committee of promoters; (2) that the monument must be in honour of a person who has been dead at least ten years. Two instances of the recent neglect of some such very proper precaution may be quoted in the heart of what may be termed the ornamental area of Paris.



Interior of the Baths of Caracalla, Rome.

The northern walk of the Tuileries gardens has been defaced by the erection of a statue to Jules Ferry, vulgar and commonplace in the highest degree and unspeakably ungraceful in outline, while the little enclosure in the Louvre which intervenes between the monuments of Gambetta and Lafayette, a peaceful square of greenery, has become the abode of a jostling crowd of figures entirely without relation either to their surroundings or to each other, of all degrees of merit and demerit, representing every phase and fashion of the studios. The arrangement has only this in its favour, that the spot is seldom visited and if it could be surrounded by a good hedge high and thick enough to hide its contents, it would become a decorative object and might be utilised for the storage of a still greater number of sculptural wild cats. Fortunately, a few steps will bring the stroller into view of a suitable and effective use of statuary in proper relation to its site in the figures—in themselves not masterpieces—which decorate the entrance to the Pont Royal.

To turn to a subject which is being considered simultaneously in London and Paris—the building of a new bridge—it is interesting to note the course being taken by our neighbours in the question of a new bridge. The continuation of the Rue de Rennes northwards and its possible junction with the Rue du Louvre has long been debated. The former part of the project brings the Municipality into conflict with the powerful interests of the "Institut": for a continuation of the street in a direct line would cut the College Mazarin in two. As a compromise it was proposed to deflect it slightly to the east so as to emerge between the Institut and the Monnaie, compensating the Institut for the loss of subsidiary buildings at the side by an enlargement of its *Auditorium* in the Rue de Seine and Mazarine. This, however, was opposed by the Forty, and this portion of the scheme is at present under reconsideration.

Had it succeeded, the town would have had several alternative schemes to consider for the junction by a bridge with the right bank. One of these was to prolong the point of the Ile de la Cité down stream, and connect it with either bank by a bridge, a project by which the view of the old Pont Neuf and the garden behind Henry IV.'s statue would have been deprived of much of their charm.

A rival scheme by which the river was to be spanned by a vast double bridge in the form of an X has also been dropped, and happily so, for the diagonal lines of the piers could not but have had a most disturbing effect from the artistic point of view, to say nothing of the danger to the river traffic.

Both schemes have now been finally superseded by one substituting a new bridge for vehicular traffic for the existing footbridge, the familiar Pont des Arts. The chief point of interest in the matter is the importance assigned to aesthetic consideration throughout the course of the discussion. The same will be the case in regard to the selection of the design for the new bridge, which is to be put up to competition; for the decision is not to be arrived at till the designs have been "reproduced in a small scale model of the district of the point of the Cité, so that it may be possible to obtain an idea of the new aspects from different points of view by means of photographs and lantern slides."

The kindred question of providing a wider outlet to the Pont Neuf at the south end is also being considered. This point is a very dangerous one from the congestion of traffic—at this very spot a tragic accident deprived the world of science of one of its most brilliant explorers, when M. Curie was crushed under the wheels of an "autobus." The formation of a "place" on the Quai des Augustins and de la Monnaie, which might form an alternative termination for the prolonged Rue de Rennes is proposed. It is greatly to be feared that if buildings of unsuitable design or excessive height are allowed to rise round the new open space, the characteristic old world charm of the neighbourhood will be lost. *L'Architecture* emits the hope that a uniform design in harmony with the neighbouring Place Dauphine should be imposed. The latter is itself the result of a notable scheme of town improvements carried out at the beginning of the XVIIIth century under Henry IV., when the space formed by enclosing two small islets in a common embankment, and thus linking the Pont Neuf with the Ile de la Cité, was utilised for the creation of a triangular "place,"

surrounded by uniform buildings. Unlike the contemporary Place Royale (now des Vosges), which has largely retained its primitive aspect, the Place Dauphine has been sadly defaced by alterations of all dates. Fortunately, however, it has quite recently been in part very intelligently restored, and the pretty patterned brick elevations of the twin houses on the bridge, with their massive stone rustications, have once more resumed their original appearance. The municipal authorities might find here a happy inspiration for their proposed improvement on the south bank.

In the meantime they are continuing to show in other domains their determination not to be guided solely by utilitarian considerations. Owners of house property in certain streets which, like the Rue de Rivoli and the Rue de Castiglione, are built on uniform designs, are subject to special regulations, which prevent their raising the height of the buildings or otherwise disturbing the uniformity. In certain cases, where interests sufficiently powerful were in play, these conditions have been violated with impunity. In others it is still in debate whether the offenders are to be sued. Meanwhile, a new machinery is being elaborated whereby such infringements shall be prevented and the symmetry of the elevations preserved by a more summary procedure. The aspect of Regent-street-to-day makes lovers of London long for the advent of a beneficent power which should prevent the conversion of order into chaos, and in this, as in so much else, we have much to learn from Paris.

HISTORICAL NOTES.

It was reported in the *Athenæum* of April 24 that des Musiciens," the beautiful XIIIth century house, whose front is adorned

with five fine contemporary statues, has now been finally saved from the danger of destruction, or rather of removal, which has more than once threatened it. At one time it was on the point of being taken down to be re-erected in America, but since it consisted of two tenements belonging to different owners, who could not agree about the sale, that fate was averted. Six years ago one of the halves was bought with the proceeds of a subscription. A society known as "Les Amis du Vieux Reims" has now succeeded in acquiring the other, and the whole is now to become the property of the city.

Excavations at Corfu.

The Hellenic Government has conceded to the German Emperor full rights of excavation at Garitza and Govino Harbour in the vicinity of his Corgyean palace of Achilleion. The work was vigorously prosecuted last spring at his Imperial Majesty's expense and under his personal supervision. It is being directed by Drs. Dörpfeld and Versakis, with a large staff of German assistants. Among the most interesting objects as yet unearthed are the fragments of a gigantic figure of a Gorgon of about the VIth century B.C., viz. the head, the feet and the snake-girdled body, also a remarkable lion's head of the same period. These and all other finds are, according to stipulation, to remain in the island.

The Excavations at Meroë.

The exhibition of objects found at Meroë, held this summer in the rooms of the Society of Antiquaries, and opened by Lord Kitchener, was of very great interest. A leaflet supplied to visitors gave a summary of the results of the excavations obtained by the explorers, which greatly amplifies the information we were able to give in a previous issue. We borrow from it the following:

"On the east side of the railway the most remarkable building is the Temple of the Sun, at fifteen minutes' distance. It seems to have been built by Aspet, about 600 A.C. The building rises in perambulatory terraces, of which the lowest is a substantial platform, surrounded by a cloister. In the centre of all, and so at the highest part of the structure, is the sanctuary, with remains of an obelisk and solar emblem. Part of its floor, of blue and yellow-glazed tiles, is still to be seen. The proportions of the architecture and the scenes of triumph sculptured on the outer walls are also noteworthy. Close to the railway on this side there may be seen the numerous tombs of the necropolis; and among these, at the south end, are two small temples or

shrines, one dedicated to the Lion-god, the other possibly to the Cow.

"On the west side of the railway are the ruins of the artisans' dwellings and workshop, the pot-kilns, etc. Proceeding, the pylons of the great Temple of Amon is reached (a five minutes' distance). This splendid building is now completely uncovered, and the visitor may walk through its many-columned hall. It dates from about 300 A.C. Its axis is 450 ft. in length; and there may be seen in their place a sculptured stone throne-dais and the high altar, decorated with reliefs. This was the place of the oracle of Amon, whose sacred tomb-chamber may be seen behind the altar.

"Climbing the ruins at the western end of the temple the path leads over the great stone wall of the ancient city, and in front there may be seen the foundations of two royal palaces. In the middle of the nearer one is the remains of the royal treasure chamber, near which two vases filled with golden nuggets of dust, as well as royal jewels, were found during the course of excavation. Just to the north is a columned chamber, the walls of which are decorated with frescoes showing royal persons in gorgeous robes and prisoners. Just beyond this building there may be found the traces of several deeply-buried ancient buildings (period before 600 A.C.); and, further of the western gate and quay wall. The probably gave access to the Nile, which, however, is now two or three hundred yards distant."

The exhibits included a remarkably fine Roman bronze head of the age of Augustus in regard to which it is still a matter of controversy, whether it represents Augustus himself or Germanicus, who visited Assuan during military command in the East; and in addition jewelry and vessels and implements in pottery and bronze. Among these a vase decorated with a vine pattern and a cameo representing running horses may be mentioned.

Winchester Cathedral.

The works of consolidation of Winchester Cathedral, which have been in progress several years, have now reached their final stage. The cost has been very great, but £300K. is still required to complete the work of making the structure secure. The portion now in hand is the south side of the north wall, apart from the defective nature of the soil, was weakened by the removal of cloisters in the reign of Elizabeth, as no longer needed and for the value of the lead. The new foundations are carried down below the strata of water and peat to the underlying gravel, and the Norman wall of the north is to be supported—a much-debated project by a range of pinnacled buttresses of peculiar design with panelled sides projected 16 ft., but pierced with arches to provide footway.

Remains of various periods have been unearthed in the course of the excavations. These comprise some dating from the Roman occupation, others, such as a ring, chalice, patten and the remnants of a rich vestment indicate the site of the burial place of a prior.

Egyptian Portraits for the National Gallery.

The most important find of the British School of Archaeology in Egypt, exhibited last summer at University College, are from Hawara, and consist of portraits of the dead. In regard to these Professor Flinders Petrie under whose supervision the researches have been carried out, said to a representative of *Daily News* :—

"The first series was discovered as far back as 1888, and some of the finest are in the National Gallery. Some of the best of the remains will be added to that collection. They are portraits of men and women, and, judging from the style of dressing the hair, one can be far out of place in fixing the date to A.D. 100 to 250. A few are painted on canvas which appears to have been an earlier custom than the use of cedar panels. Some are painted in thin colour, apparently water-colour, perfect with white of egg as a body. The green number are painted with coloured wax, on a melted state with a brush."

Lincoln Minster.

MR. FRANCIS BOND and William Watkins contribute to the Royal Institute of British Architects' *Journal* year two papers which have caused a great deal of discussion. The plea "for the reconstruction of the accepted account of the building



Lincoln Minster: Wall Arcade, North Choir Aisle.



Lincoln Minster: Wall Arcade, Chapter House.

erations which went on in Lincoln Minster from 1192 to 1255," did not convince Professor Bethaby, who, with others, felt that the scheme set forth was so extraordinary that it could only be accepted on overwhelming evidence. Evidently, Mr. Bond and Mr. Watkins sought to prove fallacious the time-honoured belief that the choir of Lincoln Minster as we see it now—that of which St. Hugh of Avalon is supposed to have laid the foundations in 1192. Mr. Bond is convinced that both choir and transepts were originally unvaulted. Mr. John Bilson, on the other hand, thinks that beyond doubt Lincoln as planned from the first, and built, as a vaulted church. Whether or not the present triforium arcade is original and part of St. Hugh's work, the subject is of absorbing interest for Lincoln. "Canterbury done into English," is one of the most remarkable cathedrals in this country. The beautiful temples of Early English scroll work and foliage, shown in our reproductions of drawings by Mr. H. G. Webb, are features in which the building is particularly rich.

Excavations at Vale Royal. The hitherto unknown whereabouts of the Cistercian Abbey at Vale Royal, of Vale Royal which once stood at what is now Lord Delamere's seat in Cheshire have been ascertained by recent excavations carried out by Mr. Basil Pendleton, architect, of Manchester, on account of which has been published in the *Manchester Guardian*. Vale Royal was founded by Edward I. in performance of a vow made at sea when in danger of shipwreck, and the site is said to have been pointed out by angels and miraculous flashes of light. The King laid the foundation stone in person in 1277, but the Abbey was not consecrated till 1330, or finished till after that date. It was purchased by Sir Thomas Holcroft at the Dissolution of the Religious Houses, and used as a quarry for building stone, which is scarce in the neighbourhood. The entire fabric was thus razed to the ground, and practically no remains were visible.

It is now seen that the modern mansion is built upon the foundations of the buildings forming the west and south sides of the cloister, which stood to the south of the church. The latter proves to have been one of the very finest in the kingdom. The north transept is 70 ft. square, and the total length of the church is over 400 ft., exceeding Fontainebleau by some 15 ft.

Modernity at Avignon. If one were asked to instance the most flagrant example of the intrusion into reality of the spirit which actuated Mark Twain's hero in the realm of vulgar farce, one could give the occurrences at Avignon, which

became known last week. A certain pushful panderer to the baser palate of modernity offered the Municipality of the city of the Schiama a considerable sum for the privilege of giving spectacles and pageants through the medium of a cinematograph within the walls of the Papal palace itself. What a setting for his vibrant travesties! And, indeed, the city authorities, as ready as temporary custodians often are to sell their heritage in trust for the

customary mess of immediate gain, were for favouring the speculator's aspirations, and proposed to give them play. The Government, however—out of no consideration of the feelings of the Papacy, one must suppose, since they are now officially embittered and divorced—decided that the danger of fire to the fabric justified them in prohibiting the deal. Which is one way of preserving from desecration the sanctity of a shrine of the Historic Muse.



Lincoln Minster: Wall Arcade, South Choir Aisle.

THE BUILDING TRADE.

MEDIAEVAL BUILDERS AT WORK.

IT is very probable that to many the idea has more than once occurred how interesting it would be to see, if even but for a few moments only, the operations of building as they were actually in progress in the Middle Ages.

We cannot indeed see mediæval builders at work, but fortunately we can see drawings of such operations drawn by those who lived at the time.

Such drawings exist in the form of miniatures in mediæval volumes. To-day we place before our readers reproductions of eight of these little pictures. These represent a good deal of the building machinery and tools in use in the Middle Ages, as well as the dress of the working men operating them.

The pictures reproduced are all of the XVth century, and for the most part were executed in France, one alone being of English execution. They are faithful representations of actual scenes, and the shape and form of each tool is carefully drawn.

It will be at once noticed that in most cases the pictures are remarkably realistic -

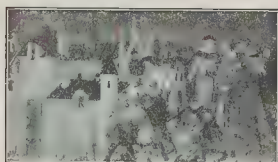


Fig. 1.

the straight-edge thrown down on the ground, the squared stones lying about, and many other details lend a wonderfully vivid sense of reality to each little scene portrayed.

Our illustrations do not give an example of the hand mortar-board, the pictures in



Fig. 2.

which such occur offering little attraction except the representation of such boards. The mediæval mortar-board was exactly similar to that in use to-day. An example may be seen in the British Museum MS. 20 A.V.

The following orders respecting the hours of English working men in the XVth century will be found of interest in connexion with our pictures. The original document has been printed in Mr. Leach's "Beverley Town Documents," page 56.

From Easter to August 15, work began at 4 a.m. and continued till seven. At six a quarter of an hour might be taken for drinking, at eight half an hour for breakfast, at eleven an hour and a half for dinner and rest, at three half an hour for drinking.

After August 15 work lasted as long as it was light enough to work by. For breakfast half an hour was allowed at nine o'clock, and an hour at twelve for dinner; at three a quarter of an hour was allowed for drinking.



Fig. 3.



Fig. 4.

The Illustrations.

The originals of our reproductions are to be seen in the Department of Manuscripts at the British Museum. The pictures clearly tell their own story that little explanation need be added.

No. 1 (MS. 20 B. xx., page 82).—This little picture was painted in France. The manner in which the hod was carried on the ladder is well shown. The mediæval hod, though borne on the shoulder, as is to-day, had no stick. In the Middle Ages it was known in England as a "hott."

No. 2 (MS. 20 E. ii., page 262).—The interest of this picture lies perhaps chiefly in the arrangement of the scaffolding; the level, square, and compasses, etc., are faithfully depicted.

No. 3 (MS. Harl. 4,376, page 150).—These four little pictures, which are of French execution, though we see a large number of tools employed, mallet and chisel, trowel, etc., the most remarkable feature

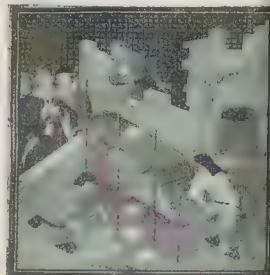


Fig. 5.

of the picture is the machinery for lifting weights.

No. 4.—This picture is from page 206 of the same volume from which No. 3 has been taken. It is of value for its representation of a heap of mortar, etc. A little picture



Fig. 6.

page 2 of the Museum MS. Harl. 621 h, had it been sufficiently clear, would have been included in our reproductions) represents a heap of mortar ready for use. Near to the mortar is a frame on wheels, apparently designed to hold the wheel while it was being filled.

5 (MS. Nero E. ii., page 73).—This picture was painted in France.

6 (MS. 19,720, page 27).—This picture is a French execution. Here we have a full representation of mediaeval building, the whole scene being full of life and activity, and introducing to our notice many new features. The frame sawed by two men, the winch, and the barrow are all carefully drawn and noteworthy. Barrows in the Middle Ages were, roughly speaking, of two kinds—the barrow such as depicted here, the form of which is perhaps best reproduced by the barrow in use to-day in brickyards.

7 (MS. Aug. AV., page 22). Here we see the plumb line and level in use.

8 (MS. Harl. 1808, page 30).—This picture supplies us with no additional information, but it has a special interest of its own in the fact of its being of English manufacture.

MIDDLESEX NEW GUILDHALL.

At a special meeting of the Middlesex County Council on August 10, it was reported that fifteen firms had been invited to tender for the erection of the new Guildhall, and all had accepted, the figures being as follows:—J. Carmichael, 73,360*l.*; Dove Bros., 73,375*l.*; Leslie & Co., 75,049*l.*; Patman & Fotheringham, 75,723*l.*; Holloway Bros., 75,940*l.*; Wallis & Sons, 76,820*l.*; Lawrence & Son, 77,820*l.*; W. Johnson & Co., 78,500*l.*; Mowlem & Co., 78,941*l.*; Holliday & Greenwood, 78,980*l.*; Henry Lovatt, 79,470*l.*; Coster & Dickson, 79,997*l.*; F. & F. H. Higgs, 79,997*l.*; Treasure & Co., 80,495*l.*; Chas. Wall, 82,161*l.* The architect's estimate was 80,000*l.* The Committee recommended that the tender of J. Carmichael, Wandsworth, be accepted. The chairman (Alderman Rogers), in moving the adoption of the report, said the figures came well within the amount for which it was stated the new building could be erected. The tenders were extremely satisfactory, and he thought that the Council had every reason to be satisfied, both with the architect and the quantity surveyor, for the manner in which their work had so far been carried out. Mr. Warford-Davis, in seconding the motion, said he could not recall an occasion in his experience when the tendering for such a big job had been so remarkably close. In replying to a question, the chairman said that twenty-one months had been allowed for the work to

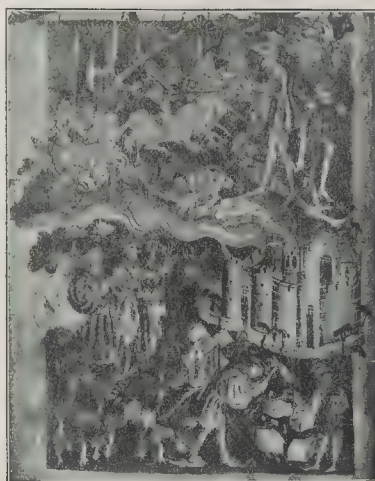


Fig. 8.

be completed. The consent of the Local Government Board had not yet been obtained, but the outstanding question was purely in regard to a detail, as to accommodation in cells, and he had no doubt the Council would obtain the Board's consent. The recommendation of the Committee that the tender of Mr. Carmichael be accepted was unanimously passed.

GENERAL BUILDING NEWS.

NEW CHURCH, WESTON-SUPER-MARE.

The contractors for this work are Messrs. C. A. Hayes & Sons, and the estimated cost of the work is 7,800*l.* The designs were prepared by Mr. G. P. Fry, architect, of Weston-super-Mare.

CHURCH, KINGSKERSWELL.

Mr. F. G. Moore, A.M.Inst.M.E., of Torquay, is the architect of this building, which has been erected at a cost of about 600*l.* The contract was carried out by Mr. H. Phare, builder, of Torquay.

CHURCH, ST. ANNE'S.

The designs for this church were prepared by Messrs. T. E. Davidson & Sons, architects, of Newcastle, and the accommodation is for 500 people. The builders were Messrs. F. T. Salmon & Co., of Cudworth.

SYNAGOGUE, SOUTHEAD.

This building, the foundation stone of which was laid recently, is to be erected at a cost of 2,070*l.*, not including heating and lighting. The contractors are Messrs. E. Leane, and the architects are Messrs. Bertram, Parkes, & Evans.

NEW COLLEGE, DUNDEE.

A new training college is to be erected in Dundee at an estimated cost of about 60,000*l.*, and the building will cover about one and three-quarter acres of ground. The architect for the work is Mr. T. Martin Cappon, F.R.I.B.A., of Dundee.

BATHS, WOOD GREEN.

Swimming, douche, and slipper baths have been built by Messrs. Davey, of Southend, at a cost of about 10,000*l.* A sliding roof has been constructed, and an up-to-date laundry is attached. The architect for the work is Mr. Harold Burgess.

RAILWAY STATION, MONTREAL.

The new headquarters for the Canadian Pacific Railway Company have been erected from the designs of Mr. W. S. Painter, the architect to the company, and it is expected that the building will be ready for occupation by the early part of next year. The contractor is Mr. C. E. Deskin, and the contractors for the steel work were the Dominion Bridge Company.

TRADE NEWS.

The fireproof partition blocks (hollow and solid) for Mark-lane Station, Metropolitan Railway, are being supplied by Messrs. J. Wright & Co., of New Malden, Surrey, and



Fig. 7.

9, Regent Street, S.W. The contractors are Messrs. Ford & Walton, High-road, Kilburn. Nos. 157/158, Great Portland-street, W., are being rebuilt by Messrs. E. A. Roome & Co., of 36, Basinghall-street, E.C., and Homerton, N.E. Messrs. Roome are executing alterations at 90, Commercial-street, under the superintendence of Messrs. Still, Wheat, & Luker.

PENDING TROUBLE IN THE BUILDING TRADE.

Following on the successful strike of transport workers, it is stated that preparations are being made for a similar strike amongst the labourers employed in the building trade. For some time past there has been much dissatisfaction among the men over wages, hours of labour, and general conditions of employment. Probably the movement will be undertaken by the Transport Workers' Federation.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Additions, Robert Gordon's Technical College; the Governors' Picture palace, Union-street, The Britannia Cinematograph Theatre, Ltd.
Aberthaw.—Forty-five houses; Crumlin Building Club.
Aberystwyth.—Club house (1,300l.), for new Golf Club.
Alfreton (Hants).—Master's house, Perin's Grammar School; the Managers.
Ancoats.—School, George Leigh-street (3,100l.); Mr. J. H. Reynolds and Mr. C. H. Wyatt, Secretaries, Education Committee, Manchester Town Council.
Ashton-under-Lyne.—Sunday school (1,000l.); the Trustees, Hurst Brook Primitive Methodist Chapel.
Atherton.—Engine-house, etc., for Atherton Cotton Spinning Company.
Audenshaw.—Proposed church; Trustees, St. Stephen's, Denton-road Mission.
Aylsham.—Alterations to laundry, etc. (2,300l.); Mr. J. H. Gidney, Clerk, Board of Guardians, Aylsham.
Bagley.—Converting hospital into consumptive sanatorium; Mr. Harry F. Bull, Surveyor, Cheshire County Council, Chester Castle.
Ballywater (Down).—New rectory; the Vicar Batley.
Alterations to Wilton Arms, Commercial-street, the Managers.
Baxley.—Proposed baths; Mr. W. T. Howe, Surveyor, Bexley Urban District Council.
Biggar Bank.—Tramway waiting-room and conveniences (500l.); Mr. Arthur Race, Surveyor, Barrow-in-Furness Town Council.
Bishop's Stortford.—Proposed assembly hall, Bishop's Stortford College (3,500l.); the Governors.
Biispham.—Additions to Endowed School; the Trustees.
Bitterne Manor.—Proposed infants' school; Mr. W. J. Taylor, Surveyor, Southampton County Council.
Blackwood.—Police station, etc.; Mr. Wm. Tanner, Surveyor, Monmouthshire County Council, Newport.
Blaonagwr.—Three hundred houses; International Colliery Co., Ogmogre Vale.
Bolton.—School (11,800l.); Mr. F. Wilkinson, Secretary, Education Committee, Bolton Town Council.
Bridgetown.—School (2,400 l.). Mr. S. Wootton, builder, Bloxwich.
Bridgwater.—Court-house and police station (7,350l.); Mr. J. E. Fursland, builder, Bridgwater.
Bridlington.—Christ Church Parish Hall (1,700l.); the Trustees.
Briton Ferry.—Projected works for the North Central Wagon Company.
Brookhurst.—Enlargement of church school; the Managers.
Bury.—Shop and three houses; Bury District Co-operative Society. Alterations to bank, Fleet street, for Parr's Bank, Ltd.
Camborne (Cornwall).—Alterations to Basset Arms for the Redruth Brewery Company.
Casidery.—Residence (1,000l.); Messrs. R. E. Buchanan & Co., architects, Londonderry, Chapel-on-le-Frith.—Extensions to Town End Foundry; the Managers.
Clydebank.—Public library; Messrs. Stewart & Patterson, architects, 14, Blythswood square, Glasgow.
Colebrook.—New Vicarage (1,000l.); the Vicar.
Cowie.—Three hundred houses; Alloa Coal Company, Cowie.
Cwm.—Fifty houses: Architect, care of Mr. D. C. John, Town Clerk, Swansea Town Council.

Cwmfelinfach.—Workman's Institute; Mr. R. L. Roberts, architect, Abercrom.
Damerham (Hants).—Extensions to Council Education School; the Managers.
Danby.—Extensions to Howell's School; the Governors.
Dewsbury.—Fire stations; Mr. H. Dearden, Surveyor, Dewsbury Town Council.
Doncaster.—School (1,900l.); Messrs. Dunn & Mondham, architects, Birmingham.
Dover.—St. Mary's Parish Hall (1,320l.), Mr. G. Munro, builder, Union-road, Dover.
Dumbarton.—Alterations to poor house (2,600l.); Mr. J. Briggs, Surveyor, Dumbarton Town Council.
Eastleigh.—Technical school and pupil teachers' centre; Mr. W. J. Taylor, Surveyor, Southampton County Council.
Edenfield.—Liberal Club, Elm street; Secretary, Liberal Club, Ramsbottom.
Edmonton.—Three workshops (900l.); Architect, care of Mr. F. Shelton, Clerk, Board of Guardians, Edmonton.
Eldon.—Church hall, St. Mark's (1,400l.); the Trustees.
Elham.—Hospital (3,500l.); Clerk, Board of Guardians, Elham.
Epping.—Infirmary, etc. (7,950l.); Messrs. R. Forrester and H. White, Surveyors, Epping Rural District Council.
Erdington.—Conservatory and two sets of double green houses (550l.); Mr. H. H. Humphries, Surveyor, Erdington Urban District Council.
Farley Chamberlayne (Hants).—School; Mr. W. J. Taylor, Surveyor, Southampton County Council.
Frimley.—St. Andrew's Church, Frimley Green (2,000l.); the Trustees.
Gillingham.—New mission hall; Deacon J. Ebenezer, Congregational Church, Gillingham.
Glenagary.—New parish hall, Adelaide-street; Messrs. W. Mitchell & Sons, architects, St. Stephen's Green, Dublin; Messrs. Callen Bros. Ltd., builders, 5, Clanwilliam-place, Dublin.
Guilford.—Twenty houses (3,400l.); Mr. C. G. Mason, Surveyor, Guilford Town Council.
Conversion of old corn market into Council Chamber (1,000l.); Mr. C. G. Mason, Surveyor, Guilford Town Council.
Hailestead.—Proposed baths; Mr. Walter Cressell, architect, Colchester.
Harrogate.—Warehouse, Regents-parade, Harrogate, and District Co-operative Society.
Hemel Hempstead.—School, Two Waters (3,200l.); Mr. O. P. Dwyer, builder, Kettering.
Hove Factory.—Mr. Wm. H. Overton, architect, Warnham House, 22, Ship-street, Brighton. The following plans have been passed: Additions, Goldstone House, Fonthill road; Mr. G. H. Burrows for Mr. J. J. Clark. Conversion premises, 88, Church-road, into flats and shop; Messrs. Albery & Lawrence for Mr. A. W. Wells. Additions to garage, Seaford-mews; Mr. F. C. Axtell for Mrs. Youle. The following plans have been lodged: Garage, Langley-gardens, Mr. G. H. Burrows. Sixteen houses, Tandridge road; Mr. S. H. Burwood.
Howden.—Isolation hospital; Mr. J. Anderson, Howden Rural District Council.
Ilkeston.—School, Binnerley street (340 places). Mr. W. Lissac, Secretary, Education Committee, Ilkeston Town Council.
Ilchen.—Additions to Ludlow-road School (350l.); Mr. W. J. Taylor, Surveyor, Southampton County Council.
Kenilworth.—School; Mr. J. Willmott, architect, 6, Waterloo, Birmingham.
Killiney and Ballinacree.—Dwellings for Urban District Council; Messrs. Miller & Symes, architects, 60, Dawson-street, Dublin.
Knottingley.—Extensions and alterations at National Schools (920l.); Mr. J. H. Waite, builder, Calder-grove, Crigglestone, Wakefield.
Lakenham.—School (370 places); Messrs H. Ramage and O. D. Holmes, Secretaries, Education Committee, Norwich Town Council.
Lambourn.—Sanatorium; Mr. John Bowen, Surveyor, Town Hall, Reading.
Langley Green.—Pattern shop, etc., at works of M. Messrs. Ham Baker & Co.; Messrs D. & A. Home-Morton, architects, Birmingham.
Mr. G. A. Horton, builder, Brierley-hill.
Leiston.—Enlargement of school (600l.); Mr. W. E. Watkins, Secretary, Education Committee, East Suffolk County Council.
Liversedge.—New stores; Secretary, Mutual Co-operative Society.
Loughborough.—Extensions to factory premises, Derby-road, for Messrs. Hanford & Miller.
Maghera (Co. Derry).—Additions to St. Patrick's Church; Mr. J. McGrath, architect, Commercial Buildings, Fovele-street, Londonderry; Messrs. J. Bellintine & Co., Ltd., builders, Strand-road, Londonderry.
Marshall.—Extensions to Marshall Home for Boyles; the Managers.
Manchester.—Tower and spire, St. Alban's Church, Waterlot road (1,300l.); the Trustees.

Mathill.—Additions to school; Mr. C. Rwing, architect, Grief.
Monkton.—School (950l.); Mr. W. P. architect, Prestwick.
Morriston.—Extensions to tin plate mill, the Dyffryn Tinplate Company.
Mottingham (Kent).—Almshouses for the Homeless Company, 117, Fenchurch-street, E.C.
Newport (Mon.).—Assize and law court; Architect, care of Mr. S. S. Newman, Town Clerk, Newport Town Council.
Ogmogre Vale.—Two hundred houses; Messrs. Lewis Merthyr Company, Ogmogre Vale.
Panteg.—Alterations and additions, Hilda's Church School; the Trustees.
Penistone.—New offices and public hall, joining free library; Mr. J. Swift, Borough Surveyor, Penistone Urban District Council.
Penybont.—Forty houses, The Craig, Cribbourn; Mr. R. Rankin, builder, Penybont.
Pennypark.—Improvement at Council School (500l.); Messrs. Michael & Son, builders, Gilgerran.
Plymouth.—Adaptation of old free library for rate offices; Mr. J. Paton, Borough Surveyor, Plymouth Town Council. Clean streets, Granville-street (170l.); Mr. J. P. Borough Surveyor, Plymouth Town Council. Extensions to St. Boniface School, Girls' parlour (eighty places); Mr. J. P. Borough Surveyor, Plymouth Town Council. The following plans have been passed: Alterations and additions to premises, 55, Mutations and additions to premises, 55, Mutations, for the Plymouth Co-operative Society. Alterations and additions to premises at 102 and 103, Old Town-street, for Messrs. Butt, Vosper, & Knight. Store at Addison-factory, for Messrs. Clatworthy & Co., alterations and additions to E. & T. Thorsley, North-street; the Managers. Buildings read of premises, Frankfort-street, for Messrs. Winnicott Bros. The following plans have been lodged: Motor garage, of premises, 25, Atheneum-street, for Mr. J. Coker. School buildings at public square, Coburg-street; Mr. W. H. May, architect, Pontefract.
Pontefract.—Baths, Headlands (4,500l.); architect to be appointed.
Portrush.—Hotel, café, and shop, Eight street; Mr. A. J. Clark, architect, 2, Cavan, Portrush.
Reading.—Mortuary; Mr. John Bowen, Surveyor, Reading Town Council.
Romford.—Four shops, Balgore-square, the Colonade Construction Company.
Ross.—Free library; Mr. A. H. Penney, Surveyor, Ross Urban District Council.
Sandown.—Enlargement of fire station, convenience (360l.); Mr. Leslie P. Dwyer, Surveyor, Sandown Urban District Council.
Scunthorpe.—School (11,200l.); Messrs. Gill & Sons, builders, Nether Hall-road, Scunthorpe.
Sholing.—Additions to Infants' School (510l.); Mr. W. J. Taylor, Surveyor, Southampton County Council.
Sleaford.—Drill hall, Church-lane, for Church Lads' Brigade.
Spencerwood.—Isolation hall, bus premises, etc.; architect to be appointed.
Stafford.—Public library; Mr. W. H. Borough Surveyor, Stafford Town Council.
Street.—Housing scheme (7,000l.); Mr. Pursey, Council Surveyor, Street Urban District Council.
Sunderland.—Alterations to St. St. Church, Meaburn-street; the Trustees.
Thurso.—N.B.—Hospital, Durness-street, Thurso Town Council.
Tunbridge Wells.—Rebuilding Bell Mount Pleasant; Messrs. de la Beche, builders, 34, London-road, Tunbridge Wells.
Walesby.—Church (2,000l.); the Trustees.
Walsall.—Underground convenience, Bridge (1,690l.); Messrs. Henry Gough & Partners, Countess-street, Walsall. The following plans have been passed: Premises, Bullocks Fold, Bloxwich; Mr. S. W. Extensions to premises, Neale-street; Mr. Walsall Locks and Cart Gear Company, houses, Green-lane, Leamore; Mr. J. W. Alterations to premises, The Bridge; W. Unionist Association. Additions to Ironworks, Green-lane; Messrs. The Stamping Works Company, Warehouse, more; Messrs. Withers, Ltd. Rebuilding premises, Park-street; Messrs. Butler & Co., Warehouse, Charles-street; Messrs. Britton & Co., Warehouse, Horse Shoe Company, Ltd. Colonial Horse Shoe Company, Ltd. L. Hall shop, Hatherton-street; Mr. T. L. Hall plan has been lodged for extensions to messes, Bath-street, for Messrs. Matthew H. & Co., Ltd.
Wendover.—Isolation hospital; Messrs. M. Bennett and M. R. Fitzgerald, Surveyors, Wendover Rural District Council.
Winchester.—Eighty-two houses; Winchester Men's Housing Company, Ltd.
Winton.—Proposed technical school, adjoining Sholing School; Mr. W. J. Taylor, Surveyor, Southampton County Council.

* See also our list of Competitions, Contracts, etc., on another page.

THE PRESERVATION OF OLD BUILDINGS.

On March 1 Mr. W. A. Forsyth, F.R.S.A., read a paper before the Manchester Society of Architects on "The Preservation of Old Buildings," from which I take the following:—

I propose to direct my remarks towards principles involved in the maintenance of an average English village church or parsonage, and in so doing will endeavour to avoid reference to much that is generally accepted, while considering firstly what shall be preserved, and then the means to be adopted.

In all cases great efforts should be made to maintain all that is fit and sound, and all that is repairable in order to express the history or evolution of the building, apart from considerations of taste or fashion, and any cases of convenience. It is no hardship to adapt one's mode of living to the internal arrangement of an old house. It is always possible to make full use of a medieval church for the ordinary purposes of worship, although the accommodation for accessory functions may be lacking. Similarly, all the fittings and parts whose old places should be respected and retained.

The Town Planning Act of our own day respects ancient monuments, even though the realisation of the municipal authority's great scheme is thwarted by the retention of an historic building. In that respect it is a subject of congratulation that the Legislature has come to its senses in preventing destruction of historic monuments by improvements.

It is necessary, however, for some legislative protection of our ancient churches to minimise more apparent day by day. The things are but the temporary custodians of the churches, yet it is a frequent occurrence to find a newly-appointed vicar anxious to mark his acceptance of office by the proposal of a scheme of additions or changes to the structure with which his many predecessors found it convenient to dispense. Village churches are national monuments, and as such, should be protected by the Legislature.

The Ecclesiastical Commissioners have opportunities for undertaking work of this kind, but their methods and processes do not fit them for the task. Their sympathies are not entirely directed to the monumental character of the subject, and, moreover, no body or institution can undertake the supervision of all the actual work or, indeed, the responsibility.

It is the types of buildings we are considering that is of paramount importance that the repairs and other operations should have high qualities.

The church and the manor-house have survived centuries of use and climatic resistance because of the solidity of parts, the quality of construction, excellence of materials, and sound workmanship. These are the qualities which are necessary to our survival. Is it not pathetic to find an historic church having its Victorian restoration renewed at this early date?

It is also important that all works be given a reasonable time in execution.

The state of repair arises in most cases from the unequal settlement of walls. Roof leaks, movement of soil, surface and underground drains, and other excavations are the contributory causes. Very frequently they are found to incline at dangerous angles, and are very often rebuilt without investigation, whereas a study of the foundations, the drains, and any recent movements would perhaps prevent the retention of the work.

Drawings.

Before anything can be attempted in the way of restoration or the actual work of repair begun, complete and careful drawings must be made. These drawings must accurately represent all irregularities of plan and sections of walls and floors. This can be shown when all drawings are free-hand. A ruled plan or elevation cannot be made.

Specification in complete detail is essential, and all practical operations as well as

the use of proper materials must be clearly described.

The drawings will serve to show the approximate extent of the work. Careful measurements reveal surprises in the structure not otherwise to be ascertained.

Photographic records are also valuable. All the materials of floors, hearths, walls, ceilings, roofs, and other features on the drawings should be described. The condition of repair, together with an historical survey, should be embodied in a general description of the work prior to repair. Tenders should be avoided; they lead to an unsympathetic handling of an old building. An approximate estimate, combined with a schedule of prices for labour and materials, and, above all, an honest builder, is all that one may reasonably ask for. I know of no more satisfactory method than a 10 per cent. profit arrangement and schedule of prices. The architect must be competent, and not too busy personally to supervise the work.

Speed in Building.

It must be admitted that, apart from other influences, the survival of ancient building works is due in great measure to the actual duration of the building operation.

Buildings of permanent intention, constructed for peaceful enjoyment and not defensive purposes, must receive climatic considerations in erection or repair. Foundations or underpinning should not be undertaken until the drainage of the soil is completed, or the ultimate condition of the land assured. Shoring should be perhaps unduly strong and allowed to stand for an excessive time before being struck. Brickwork in lime mortar cannot be hurried, and must be built in a very wet state and allowed to set before receiving weights, thrusts, or other causes inducing movement. Plastering should be not unduly delayed, but a long period of setting should be allowed. Strong draughts should be excluded, as well as heat and other influences inducing rapid setting. Materials resembling the old should, of course, be used, and this will exclude the use of patent plastering processes from the building, and, incidentally, from the scope of this paper.

Roof timbers which have been exposed to sun and rain should have reasonable time to return to their normal seasoned state when roof coverings are finished, before such things as ceilings are erected.

Good work, therefore, requires proper time for its execution.

Foundations.

It is remarkable that the types of structures we are considering received comparatively little attention in the matter of foundations. In the majority of cases little or no increase of width was made, but reliance was placed entirely upon the soil or earth upon which the thick walls were directly founded. Yet it is abundantly clear that foundation work was well understood.

The subsequent laying of drains, putting up of rain-water gutters and pipes, and the digging for graves and heating chambers have caused great havoc to the structure of old walls.

A village church is often very much the better off by the absence of eaves gutters and down pipes. This ensures a more general distribution of roof water. Paving should be laid around the building to catch and remove rain dripping from the eaves and walls. Water concentrated from a valley or from the gutters of flat roofs can be specially dealt with by shoots.

The drains of a house are examined by municipal authorities, to the gain of the inhabitants; those of a church or cathedral take care of themselves, to the detriment of the fabric.

The incumbent of a church in Norfolk once took me to see the position of a mysterious spring below the north-east corner of his church, pointing out the consequent mossy growths inside as well as out, and the existence of active settlements in the wall. A brief examination showed that the entire trouble was due to a broken and neglected rain-water pipe, which had been belching concentrated water into the base of the wall in question for many years. This not an unusual incident.

As illustrating the knowledge in early times of the actions of soils, the following interesting precaution, taken by a XIIIth-century builder, came to my notice in underpinning a buttress and circular staircase of a church tower. At Chattisham, near Ipswich, the land is entirely a stiff clay.

As frequently happens in church towers, the weakest angle is that containing the turret staircase, and in this instance it had, along with a rubble and stone buttress, settled considerably from causes traceable to a defective drain. The remainder of the tower walls were in fair condition.

On examination it was seen that in building the tower a large pit had been dug extending 1 ft. 6 in. beyond the area of the structure. Into this hole, the sides of which were in places clearly disclosed, had been thrown river gravel of coarse quality, and upon it the rubble walls of the tower were erected. It will be noticed that there is an almost entire absence of footings, and that the bases of the walls are perilously near the surface of the ground, yet the tower generally has stood these 600 years remarkably well. The limitations of a clay soil were evidently understood in these medieval times, and the instance is one by which we should profit.

In some Norfolk churches some unusual yet reasoned provision is made in the foundations. Thus, for instance, at Saxthorpe the foundations consist of thin layers of various materials, the reasons for which are difficult to comprehend. At the bottom of the trench, in a loamy soil, is placed 6 in. of chalk, then follow alternate layers of 3 in. of mortar and 3 in. of sifted earth, these two layers repeating three times producing 18 in. in height, and upon this the rubble walls are built.

Rubble Walls.

In rubble walls, all small material, such as flints, pebbles, fragments of stone, bricks, and tiles were mixed with lime mortar. The whole was worked up and laid in a concrete manner in conjunction with stone or brick quoins set in the internal and external angles. My friend Mr. Gaymer, of North Walsham, who has given close attention to this work, assures me that the rubble could only have been laid against boards or centering in the same way as we build concrete. He further assures me that he can point out places in Norfolk where the marks left by the joints in the boarding show upon the mortar faces.

It will readily be understood that the use of angle stones was twofold; firstly, to facilitate the accurate building of rubble, and then to afford greater permanence to the exposed angles from the effects of winds, rain, and frosts.

Rubble walls have been, and are generally to this day, misunderstood by architects and builders. It is their invariable custom to point or key the spaces between the aggregate materials after the matrix mortar has to an extent been removed by weather. The pointing is moreover usually performed with the aid of a metal trowel.

In almost all cases, no pointing is required. The faces exposed to the rainy quarters are those mostly found to have these interstices washed out, but it is only in the dire extremity of the solid materials having become loose, that any repair is necessary, and indeed can be efficiently performed.

Stone facing does not imply strength when the core of the wall is found to be of rubble. As a rule, bonding stones were absent in the great ashlar-faced walls of the early periods, and the slightest failure of footings set up great cracks in the masonry.

In rebuilding dangerous buttresses, I have reset the old stones of the angles and offsets, re-using the general walling materials in concrete fashion. After some small instruction the bricklayers or masons grasp the spirit of the old work, and produce a rubble wall exactly resembling the original, and, what is most important, of apparently considerable durability. Bonding stones to internal angles are essential. It is of great importance that stone or brick work should be effectively worked in with offsets in rubble work.

It is extremely interesting to trace the early attempts at flint facing, and the development from the rubble wall. The earlier work, sometimes "boulder," sometimes "napped," had heavy joints and rough laying. The introduction of traceried panels in plinths and parapets produced greater precision and definition in the flints,

until the art culminated (and, indeed, disappeared) in the exquisite work of the late XVth century. The parish churches of Norwich are wonderful examples of the perfection to which flint facing was carried. In all cases flints used in repairs should be "dug," and not used from surface collections.

Stonework.

Roughly speaking, there are nowadays found three distinct schools in the preservation of ancient stone building—each having its enthusiastic adherents. The first may be called the "Limewashers," and the second the "Replacers," and the third the "Fakers."

The creed of the first is very difficult to define, and their operations, complicated as they are, impossible to reason up. If a stone mullion is crumbling to atoms, it is repaired with brick or roofing tiles, and the piece is smeared over with mortar, yet with no intention of desiring to imitate the material of the destroyed feature. They are particularly anxious that their patching should reveal itself for all time. There is a strong sentiment against attempting to repair in the actual form and material of the original, and to a certain extent they are justified by the glaring results of the second school, whose entire creed is to "cut out and replace with new to match," and also to show for a limited period of time that the building has been restored. The delight of the third order is to deceive, and, if the stone mullion cannot be operated upon *in situ*, the pieces are removed and reset in cement or some other medium, or new stone, artificially coloured, is built in so that all evidence of renovation is lost.

It is extremely difficult to say which is the most desirable or correct of the various processes. There are errors and inconsistencies in the claims of each, yet there is much that is necessary in all.

Let us take a City—say, Oxford—which is rich in historic buildings. Everyone regrets the extraordinary condition of decay which has taken place in the Headington stone in buildings of the XVIIth, XVIIIth, and XIXth centuries in that town.

In nearly all cases extensive works of restoration have been carried out during the last few years by the "Replacers" school. At the present time the principal buildings look as if they were new. The Great Tom Tower and south front of Christ's College are practically entirely rebuilt; even the carved ornament is renewed. Drastic measures have been taken, and one cannot but regret that such methods were carried on to so extreme a course. A very interesting work of the "Limewashing" school has, however, been lately finished in the repair of the garden front of St. John's College by my friend, Mr. Redfern. As showing the extreme care exercised in its execution the architect performed much of the actual work with his own hands.

As in other Oxford buildings, the stonework was in an advanced state of decay, but the method of repair has been that advocated by the Society for the Protection of Ancient Buildings. No new stone has been introduced. All badly-decayed stone was removed, and patches of roofing tiles built in lime mortar. The red patches were then smeared or rendered with the mortar. Mullions and other features have been similarly treated, and in all cases the sections of the original mouldings have been continued in the mortar patches. I cannot see how this process can be regarded as permanent. Reference has already been made to the failure of the Victorian stucco, which would appear to be similar in treatment. Already parts of the rendering on the face of the parapets are cracking and the tiles grinning through. The edges of these tiles should be dated.

At Westminster Abbey a great work in limewashing is being carried out by Professor Lethaby. The principal original material is a Reigate freestone. Upon most of the exterior this has been, in former times, largely replaced by other varieties of stone by the "Replacers" school. The remaining stone, having external exposure, is fast decaying in the atmosphere of London, but the destruction is being arrested by the simple application of limewash. The operation consists of the slaking with boiling water of Barrow hydraulic lime to produce a comparatively fine solution or paste, and of the application

by means of a brush of two or more coats according to the state of decay. To avoid glaring results, some colour is utilised to assimilate the tone of the applied material to its environment.

The process has been going on in the vaulting of Cloisters for some four years, and is found to be a successful "healer" of the diseased stone where applications of other reputed preservatives have failed. In appearance, too, the effect is good, as after the lapse of time the lime appears to have entered into structural combination with the stone and mouldings, joins and other details become sharper and well defined. It is satisfactory to think that the spirit of the beautiful early work in these Cloisters is retained by so simple a process. The idea is not new, for it will have come within everyone's observation that a whitewashed stone wall is often preserved when the untreated surfaces of the same wall have perished. It is in the nature of a revival. This limewash is gentle in its nature. Let us beware, however, of advertised patent preservatives, which claim strong silica for their purpose.

I have been informed that frequently these solutions produce worse results after the lapse of time. The first application penetrates let us say $\frac{1}{4}$ in. and then hardens. The subsequent coatings cannot therefore penetrate beyond this first treatment, and a thin, hard face is produced. If by any chance the wall receives moisture from behind, or wet gets through the joints or settlements, frost removes the artificially-produced face in unpleasant quantities.

It is very rare that one finds the work of the "replacing with new" creed accurate in its attempt to imitate old work. Take such a simple instance as the piecing of a mullion. The hollows are invariably made too quick, not only failing to resemble the old section, but giving a hard, cast-iron character to the work. The varying substances of the stone tracery in the mullions and cusped heads, difference in internal and external arches, and many another subtlety are not detected, and a harshness again results. Joints are made too thin, and the natural tooling operations of the mason fail to receive expression by the subsequent smooth finish, chiefly produced by the thoughtless use of the "drag."

Of the third school of repair there is much to be said in commendation of its work so long as it is restricted to maintaining what exists. It has, however, become so skilful that it reproduces old features *ad libitum*, resorting to endless devices to complete the deception. New stonework is roughed and injured as though by long use. Steps are worn down to order. Cow-dung solution is applied to represent the effects of external exposure. Moss is cultivated on roofing tiles. Oak receives a sandblast treatment, or is adzed after being previously planed, while limewash stains and other applications produce smoky deceits. Of all this, nothing is to be merited but our contempt.

It has long been my theory that arches, vaulting ribs, and other curved moulded work were erected in a roughly-squared state upon centering, and the mouldings and other enrichments subsequently worked in position. String courses and cornices were perhaps cut before fixing, but circular work, judging by its wonderful accuracy of line, appears to me to have been finished after building.

In proof of this, I recently saw a simple example at Repton Priory of transitional XIIth to XIIIth century vaulting left in an unfinished state. The ribs were built of squared stones roughly tooled. The centre boss has been carved and a few dog-tooth ornaments and a moulding commenced, but never finished, yet the place (now used as a lavatory) has been in continuous occupation for 700 years. Arches of windows occasionally indicate that the moulded work was prepared before fixing, and in that case there is not the usual freedom of line found in the beautiful work cut *in situ*.

Mr. Gayner assures me that in examining the stones of vaulting ribs which have fallen or have had to be taken down, the sections of the mouldings vary according to the plane of the joint in such a way that a template could never have been used to strike the outline of the moulding upon the material when lying on the mason's banker. I shall be glad to hear of corroborative experience, but the object in raising the point is to draw

attention to the desirability of pursuing similar methods in works of repair.

The Constructional Uses of Metal.

The use of wrought-iron tie rods in taking up thrusts in brick and stone walls, piers, arcades is one which should receive great attention from architects. The principle to be found in early XIIIth-century work when perhaps the chief example in this country is the reinforcement of the vaulting of the aisles in Westminster Abbey. Earlier ties were made of oak, but wrought iron was soon substituted, but only a few the former remaining. Professor Lethaby assures me that this is original work. It carried out throughout the triforium arch and other places.

In all these cases the metal ties are subjected to more or less the uniform temperatures of the interior. The case is different, however, in the reinforcement, which is again found in the large windows surrounding the Abbey, where the bars take up tensile strain and are independent of the saddle bars of glazing. Here the metal-work is exposed to great changes of temperature, and the constant movement of the rods is perhaps one of the causes which have necessitated almost entire restoration of the external stonework. The constructional wrought-iron in Westminster Abbey is a large subject, which will repay a full investigation.

Metal associated with stone, concrete, brickwork should be sparingly used. Iron ties, cramps, dowels, and saddle-bars in ruined masonry to an alarming extent, should be avoided when possible. Slits, finis, and pebbles are frequently usable dovetailed cramps, pins, and dowels.

Tile Roofing.

The repair of old tile roofs is a matter deserving our caution. Into the numerous methods of laying tiles throughout the country, it is not within the intention of these notes to enquire. What is of paramount importance, however, is the quality and in this respect I would urge the use of hand-made, sand-faced tiles to entire exclusion of machine-made or pressed materials. Old roofs appear to gain in interest when the repairs are visible. It is not always possible to secure old weathered tiles for repairing ancient roofs. Rough well-burnt materials should, however, be used and the tiles should possess considerable "camber," not only in their length, but the width. They should also have general substance. The cambering of tiles is perhaps the most important quality in their manufacture. Capillary attraction is thereby reduced to a minimum and the air spaces formed are valuable for assisting evaporation of moisture, and in preserving the tiles. To exclude draught and driving snow from tiled roofs, it was the ancient custom to the tiles in hay or straw. In Norfolk spaces between the laths were filled with reeds. In each case, however, the packing material was kept away from contact with ordinary rains, and was confined to the backs of the tiles. Evaporation was but slightly arrested. In all cases counter-battening is essential to the successful use of tiles. These under battens, if laid diagonally brace the roofs against wind pressures, provide a wonderful way, and provide a convenient means for fixing laths when plastering between the rafters is desired. The bedding of tiles is to be avoided, as, amongst other risks, tails are liable to be broken in frosts. Tiling is good when used to a limited extent.

The rounded valleys of old roofs are delightful features—to the eye. But it is rare to find to what extent they have been, indeed, are always being, repaired. Bedding was the principal method of fixing. I dare to think that most of these old examples were unworkmanlike for the simple reason that in endeavouring to maintain uniformity of the horizontal courses, the in the centre of the valley lost their "lay" that is to say, these particular tiles were made long enough in order to provide adequate lap to meet the flatter slope of the valley naturally answers.

A very good way of producing rounded valleys, although at the expense of maintaining the horizontal courses, is to fix out width of 15 in. and to hand "tile a half" diagonally up the centre of the valley.

The ordinary courses follow from these middle ties, and the extra lap in the valley is thus provided for.

Timber.

There is only one timber. It is English oak, and there is no substitute or anything approaching it for power and beauty—when properly used and cut. English oak, probably in account of its slow growth, has a wonderful heart, the virility of which the calculating formulae are incapable of expressing. The framing of timbers was well understood by medieval builders, and reached a state of real perfection. The science was applied to walls, roofs, floors, staircases, and the like. The best work of the earlier periods relied upon the one material in the mortises, tenons, pins, dovetails, and joints generally. Wrought-iron was employed in later times, when the practice began to wane, and less thorough methods obtained. It is curious that the acid of oak should attack and corrode iron nails and fastenings, which probably explains much of the earlier disuse of iron with oak. Many a sound timber is removed from an old building because the top and waxy edge is rotten. When occasions arise for repairing an oak roof, it is essential that all work be done in position in order to avoid the taking down of old rafters, tie-beams, purlins from their first position. Old seasoned material should in all cases be employed, and no attempt made to conceal or lapped or scarfed joint.

The persistent thrust of timber roofs induce eaves, piers, and arches to move in a sure, main firm. It is invariably possible to rest these thrusts in a simple way without disturbing the inclined masonry. Iron ties should be thoroughly painted before and after king. Lead gutters should be taken up in order to examine the condition of wall plates in unperceptible manner, whilst the foundations and the ends of tie-beams.

Lead Roofs.

It is perhaps unnecessary to remind architects that cast-lead sheets are preferable to the rolled quality. Recasting old lead should be done on the site of the building under repair. Flats should receive a fair slope of at least 1 in. in twenty-five or twenty. Boardings must be run parallel with the fall. Welts could, if possible, be used on church roofs. Good rolls, when used, should have grooves in the throats to arrest capillary attraction. Ripps should have similar provision.

Asphalt.

Few materials require more careful selection than asphalt. It is extremely difficult for architects to tell good from bad; it is, however, essential that the bitumen should be thoroughly distilled before mixing with waste asphalt, and devoid of fibre. It is especially valuable in covering old copings of cornices, rendering their preservation comparatively easy without disturbing the work.

Thatching is coming into greater use again. The revival would be more general but for the caution demanded by local authorities and insurance companies.

Reed thatching, as laid in the county of Norfolk, is the best material and most attractive in appearance.

Thatching appears to have produced the types of roofs upon which tiled forms have been based. Hipped roofs are distinctly archaic in their origin. Thatch gables are at the most desirable features for durable building.

Plastering.

In no department of our work is greater care required than in the manipulation and application of plaster. In old buildings extra caution still is necessary in order to secure adhesion of new material to old surfaces. Material is all important. It is not necessary to remind those concerned with old places of the presence of flintings and other decorative works below whitewashed faces; the preservation of these colourings is a matter apart from ordinary structural repair, and should only be undertaken by those much accustomed to the work.

Repairs to plan plastered surfaces should extend to the actual defective area: the preparation to replaster a whole wall for uniformity and appearance should be avoided. Finishes must be reliable and of known

condition. Sand cannot be too coarse or clean. Hair should be obtained from tanneries where the old-fashioned process of detaching by the immersion in lime is still in force. Most hair now in use is removed from hides by means of chemicals, and is in consequence brittle. Plastering can be applied in one coat. No more than two, however, are necessary, and it should always be spread and worked up with wood floats. No trowels are required in this trade.

Smoothness of finish, which is always out of scale, as well as sympathy, is thus avoided in wall treatments. Rough plaster also dries out a much less degree than fine finishes.

In conclusion, I would urge that, whatever be the nature of the building with the repair of which we are concerned, a complete record should be made of the actual works undertaken, including plans showing the state of the building prior to, and the condition of the work after, repair, a description of the process, and an account of the cost.

This should be made obligatory upon an owner or incumbent."

LAW REPORT.

BEFORE THE OFFICIAL REFEREE
(MR. MUIR MACKENZIE).

Contractor's Action against Building Owner. Minter v. Waldstein.

THE hearing of this case was continued last week, it being an action brought by Mr. F. G. Minter, a builder and contractor, against Mr. Charles Waldstein, Professor of Art at Cambridge University, from whom he claimed £2,750, the amount payable in respect of a certificate of Mr. Frederick Wm. Foster, an architect, and in respect of a contract made between the plaintiff and the defendant for the carrying out of alterations and additions at Newton Hall, Harston, near Cambridge. Defendant alleged that the work was defective, and counterclaimed against the plaintiff for 10,000 damages.

Mr. Lewis Thomas, K.C., and Mr. G. R. Blanco White (instructed by Mr. V. Blanco White) appeared for the plaintiff; and Mr. Clavell Salter, K.C., and Mr. F. St. John Morrow (instructed by Messrs. Withers & Co.) represented the defendant.

Further evidence was given on behalf of the defendant's case by Mr. Frederick Arthur Ball, of the firm of Messrs. Ball & Son, quantity surveyors, of No. 6, King's Bench walk, Temple, and also by Mr. Walter Chas. Gibbs, a quantity surveyor, practising at Cambridge.

Mr. E. B. P'Anson, examined by Mr. St. John Morrow, said he was senior partner in the firm of E. P'Anson & Son, architects and surveyors. He had been in practice for upwards of forty years, was a Fellow of the Royal Institute of British Architects, also a Fellow of the Surveyors' Institution, architect to St. Bartholomew's Hospital, and to several other public bodies. He inspected the roof in question on June 30 and July 20 last. Dealing with the roof over the new wing, the witness said he did not think the work there was what was intended by the specification. It was done in a very rough manner, and, to his mind, there were several defects. To particularise some, he considered that the curbs were very shabby, and the gable joints seemed to be weak and had sagged. The rafters, in his opinion, should be bird-mouthed to the curb, and the work there was not in accordance with what was described on page 25 of the specification. He also noticed that the spacing of the ceiling joists was uneven. He considered that the rafters, where they joined the curb, were improperly butted. They were not bird-mouthed as he considered they ought to be. He thought that the curb seemed to have moved. Speaking of the quality of the timber in this roof, he should say it was not of the best, but of inferior quality. He also considered that the quality of the timber in the twin roof was not of the best quality. He saw some bad shakes in it. He also found that the rafters were short. It was sought to remedy that by putting pieces underneath. He considered that the general construction of the roof was very defective. He thought that the roof was a very poor specimen of carpenter's work. He noticed differences in the angles of the roof. He thought that the purlins were not properly bedded on the principal rafter. The common rafters ought to be notched on to the purlin and lie flat on it. The tie beam had not been properly wedged up to the king post. He was not with Mr. Murray when he took the

levels of the floors, but he (witness) had levels taken, and afterwards tested them with Mr. Murray. He also made some tests as to the spacing of the joists. He had seen Mr. Murray's plans as to the spacing of the joists. He knew that the contract provided that in no case should the joists be more than twelve inches apart. That had not been carried out. The witness also gave evidence detailing the extent of the various sags which had taken place in certain of the rooms, and generally agreed with the evidence given by Mr. Murray upon that point.

Cross-examined by Mr. Lewis Thomas.

During the time he had been in Court he had heard the prices the plaintiff had paid for the timber. Speaking as an architect, he did not think that the prices the plaintiff paid for the timber were the best prices. He agreed that Mr. Minter would probably know the proper prices to be paid for timber, and that he would not be likely to pay the best price without getting the best quality. He did not think that oak, properly seasoned, would develop shakes. He considered that the shakes he saw were more than surface shakes. You could easily distinguish sappy timber, even after it had been saturated with water. What he complained about the cement rendering was that the cement and the hair were not properly mixed. The hair was left exposed on the surface, and it was not work which he should have passed himself.

If it was left rough by the contractor on the direct instructions of the architect, can you complain about that?—Yes, in the way it was carried out.

Do you know that when the plaster was finished Mr. Foster said it was done exactly as he wanted it done?—No, I do not.

Cross-examination continued.

It was quite a common thing, when you had got sagged rafters, to put in solid strutting without disturbing the ceiling. Of course, it was a common thing to find a sagged ceiling in an old house; but one did not expect to find one in a modern one like Newton Hall. He did not know that Professor Waldstein wanted his ceilings in the old style, and in leather, and so on. He took it that the Professor did not want sagged ceilings, however. Great heat was bad for joinery. Speaking generally, he did not think it fair to have the temperature of a house kept at 84 degrees where there was new joinery; but he did not think it possible to keep a house up to that temperature in the winter.

Mr. Lewis Thomas: Fortunately, the temperature was taken by a thermometer.

Re-examined.

If joists were of equal size, the floor, which was made with the joists fixed close together, would be stronger than the floor would be if the joists were placed wider apart. Badly mixed plaster could fairly be described as being defective.

Mr. James Annan, examined by Mr. Salter, said he was a decorative plasterer, and his business in London and Edinburgh had existed for upwards of one hundred years. He had had forty years' experience himself in plastering work. He went down to Newton Hall last April for the purpose of examining the decorative ceilings. He also went there for the same purpose last Thursday. In April he made an examination of the enrichment of the hall ceiling. He found that the decorative work had started, and that there were two cracks across the rib within a foot of each other. Mr. Murray was afraid that the thing might fall, and asked witness to report upon the matter, and tie it up if necessary. Witness reported that in his opinion there was no immediate danger of the thing falling. He reported that, in his opinion, the work could not be satisfactorily put right without pulling down the rib and stripping and replastering the ceiling. He considered that the cause of the sinking of the ceiling was because the joists had sagged, and the nails which supported the rib had sprung. There were a number of decorative ceilings in the house. He should describe the workmanship of the ceilings as fair average work, but he would not describe it as the best workmanship. In his opinion, the cause of the trouble was the settlement of the building. It was not the fault of the plaster. He found, when he visited Newton Hall last Thursday, that the condition of the enrichment on the hall ceiling had got worse than it was when he saw it in April. That was what he expected.

At the close of the evidence on behalf of the defendant Mr. L. H. Stanborough, a quantity surveyor, practising in Bedford-row, W.C., gave rebutting evidence on behalf of the plaintiff as to the sum he alleged to be due to the plaintiff on the variation account, and also in answer to the criticisms of Mr. Ball, the quantity surveyor, who gave evidence on behalf of the defendant as to that account.

During the course of the cross-examination
LAW REPORT.—Continued on page 204.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 4. — **Newcastle-on-Tyne.** — The Education Committee invite from architects practising in Newcastle designs for a senior mixed school and a junior mixed school, each to accommodate 368 children. Assessor nominated by R.I.B.A.

SEPTEMBER 5. — **Skegness.** — **COTTAGE HOSPITAL.** — Mr. E. R. Sutton, F.R.I.B.A., Assessor. Premium 15*l.* 15*s.*

SEPTEMBER 9. — **Pontefract.** — **SWIMMING-BATHS.** — Open to architects of the West Riding of Yorkshire. Particulars from the Borough Surveyor.

SEPTEMBER 12-25. — **Athens.** — **COURT OF JUSTICE.** — An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 160,000*l.* The *Official Gazette* may be seen at the Library of the R.I.B.A.

SEPTEMBER 16. — **Manchester.** — **LIBRARY AND ART GALLERIES.** — Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

OCTOBER 1. — **Barnsley.** — **EXTENSION OF BATHS.** — The Barnsley T.C. invite drawings for proposed extension of Public Baths. Three premiums are offered. See advertisement in issue of August 11 for further particulars.

OCTOBER 30. — **Holland.** — **SPAIN GRASS WINDOW.** — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — **Marylebone.** — **NEW MUNICIPAL BUILDINGS.** — Premiums of 100*l.*, 75*l.*, 50*l.* The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1. — **City of St. Petersburg.** — **MONUMENT TO ALEXANDER II.** — Particulars in our issue of August 13, 1910.

DECEMBER 29. — **Glasgow.** — **DESIGN FOR A BRIDGE.** — Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60*l.* and 20*l.* are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 31, 1912. — **Australia.** — **DESIGNS FOR FEDERAL CAPITAL CITY.** — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of July 7 for further particulars.

JULY 1, 1912. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 375*l.* Conditions on application to the Chief Burgomaster, Dusseldorf.

NO DATE. — **Bristol.** — **ALTERATIONS IN THE GRAND HOTEL.** — Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.

NO DATE. — **Cardiff.** — **TECHNICAL INSTITUTE.** — The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in this issue for further particulars.

NO DATE. — **Coseley.** — Plans are invited for a school to accommodate about 200 children. Particulars from the Education Office, Coseley, near Bilston.

NO DATE. — **East Sussex.** — **NEW HOSPITAL.** — The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs, etc., for new hospital. See advertisement in this issue for further particulars.

NO DATE. — **Nottingham.** — **BAPTIST CHURCH AND PREMISES.** — Limited to Nottingham architects. Particulars from Messrs. Rorke & Jackson, solicitors, King-street, Nottingham.

NO DATE. — **Boothale Tintern.** — **EXTENSIONS.** — Assessor, Mr. Alex. Graham, F.R.I.B.A.

NO DATE. — **Salford.** — **EXTENSION OF OFFICE ACCOMMODATION ON WORKHOUSE SITE AT ECCLES NEW ROAD.** — Premiums 20*l.* and 10*l.* Particulars from the Board of Guardians, Salford. Limited to architects practising in Salford and district only.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 18. — **Castlewella.** — **BANK.** — For building a new branch bank on the premises of Messrs. McCarthy & Brookes, surveyors, Scottish Provident-buildings, Belfast. Messrs. Hobart &

Heron, architects, Scottish Provident-buildings, Belfast.

AUGUST 19. — **Bandon.** — **BATHS.** — Erection of two bathrooms in the Workhouse. Plans and specifications with the Master of the Workhouse.

AUGUST 19. — **Kirkcaldy.** — **ALTERATIONS.** — For alteration of premises to new offices and show-room. Drawings with Mr. J. Kincaid, Gas Engineer, Gas Office, Kirkcaldy.

AUGUST 19. — **Middlestone Moor.** — **CLUB.** — Erection of a workmen's club and institute. Messrs. C. Johnston & Son, architects, Cockton-hill, Bishop Auckland.

AUGUST 19. — **Parton.** — **ALTERATIONS.** — Alterations to the school. Mr. J. S. Slout, architect, 36, Lowther-street, Whitehaven.

AUGUST 19. — **Pontefract.** — **DWELLING.** — Erection of dwelling. Plans and specification at Half Way House, Glynneth. Mr. A. Morgan, Richmond House, Fort Tennant-road, St. Thomas, Swansea.

AUGUST 19. — **Ross.** — **ALTERATIONS.** — Altering the Free Library premises. Plans and specifications by Messrs. Small & Ashdon, architects, Ross.

AUGUST 21. — **Basing.** — **REPAIRS.** — Erection of repairs and painting at the Council school. Specifications by the Committee's Architect, Mr. W. Robinson, Caxton House, Westminster.

AUGUST 21. — **Keighley.** — **BATHS.** — Construction of bathrooms, etc., at the Workhouse. Drawings seen, and quantities from Messrs. Moore & Crabtree, architects, York-chambers, Keighley.

AUGUST 22. — **Delph.** — **RESIDENCE.** — Erection of a villa residence. Names to Messrs. J. B. Abbey & Son, architects and surveyors, 24, New-street, Huddersfield.

AUGUST 23. — **Barnet.** — **CLERK'S OFFICES.** — The Guardians of the Barnet Union invite tenders for erection of Clerk's offices at Welhouse-lane. See advertisement in this issue for further particulars.

AUGUST 23. — **Bradford.** — **DEPOT.** — Erection of a milk depot. Drawings and general conditions of contract seen, and quantities from the City Architect, Town Hall, Bradford.

AUGUST 23. — **Bradford.** — **DOOR.** — Erection of new roof to house in Horton Park; painting in recreation grounds and cemeteries. Drawings seen, and quantities from the City Architect, Town Hall, Bradford.

AUGUST 23. — **York.** — **PULLING DOWN.** — For the pulling down of the York Skating Rink, Sycamore, W. E. Appleton, Liquidator, 28, Pavement, York.

AUGUST 24. — **Blackburn.** — **CHESPOOLS.** — Erection of about thirty privies and showers, and pools to water-closets. Specifications and form of tender, on deposit of 10*s.* from Mr. Wm. Stubbs, Assoc. M.Inst.C.E., Borough and Water Engineer, Municipal Office, Blackburn.

AUGUST 24. — **Egremont.** — **COTTAGE.** — Erection of a cottage and out-offices. Drawings and specifications at the office of the County Land Agent, Mr. D. A. Gibson, 28, Castle-street, Carlisle.

AUGUST 24. — **London.** — **REPAIRS.** — Erection of repairs and painting at the Workhouse, 81, Leonard-street, Bromley-by-Bow, E. Specifications from Mr. T. G. Stacey, Clerk, Barnes-street, Stepney, E.

AUGUST 24. — **Willington.** — **COTTAGES.** — Erection of nineteen cottages, for the Willington Co-operative and Industrial Society, Ltd., Durham. Plans, etc., at the office of the Society.

AUGUST 25. — **Birmingham.** — **ALTERATIONS.** — Extension of and alterations to the public offices. Drawings, specification, conditions, and contract seen with Mr. J. Tosh, H.M. Office of Works, Pinfold-street, Birmingham. Quantities, or deposit of 1*l.* is. from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

AUGUST 25. — **Uttoxeter.** — **REMODELING.** — For remodeling with iron water-closets, drainage, water mains, etc., the Cattle Market. Quantities from, and plans and specifications at, the office of the Surveyor to the Council, Mr. J. B. Radfield, Town Hall, Uttoxeter.

AUGUST 26. — **Barnford.** — **LODGE.** — Erection of a foreman's lodge at the filter beds. Quantities and forms of tender from the architects, Messrs. W. B. Starr & Hall, 12, Victoria-street, Nottingham, on deposit of 1*l.* is.

AUGUST 26. — **Frindsbury.** — **ALTERATIONS.** — The Kent Education Committee invite tenders for alterations to teachers' dwelling-house at Frindsbury Extra, Waincoat Council School. See advertisement in this issue for further particulars.

AUGUST 26. — **Llanon.** — **VILLAS.** — Erection of two semi-detached villas. Plans and specifications with Mr. J. Lewis Evans, architect and surveyor, 21, Great Dargate-street, Aberystwyth.

AUGUST 28. — **Cwm.** — **MON.** — Erection of caretaker's house at Duffryn schools, Talistown.

Plans and specification with the Committee's Architect, Mr. H. Waters, M.S.A., Market-chambers, Ebbw Vale.

AUGUST 28. — **Ebbw Vale.** — **HOUSE.** — Erection of a caretaker's house at Duffryn schools, Talistown, Cwm. Mon. Plans, specification, and conditions of contract with the architect, Mr. Henry Waters, M.S.A., Market-chambers, Ebbw Vale.

AUGUST 28. — **Farnborough.** — **FIRE-STATION.** — Erection of fire-station behind the Town Hall. Deposit of 2*l.* to Mr. J. E. Hargreaves, Surveyor, Town Hall, Farnborough, Hants.

AUGUST 28. — **Fernhill.** — **REPAIRS.** — Erection of painting and repairs to the Workmen's Institute. Specification with Mr. J. Rees, architect, Centre.

AUGUST 28. — **Keighley.** — **CONVENIENCES.** — Alterations to the sanitary conveniences at Holycroft School. Particulars from the Borough Engineer, Council Offices, Keighley.

AUGUST 28. — **London.** — **WARDS.** — Erection of proposed new additional wards, etc., at the Homsey Cottage Hospital, Park-road, Homsey N. Plans, specifications, and information from the architect, Mr. George Lethbridge, F.R.I.B.A., 7, Draper's-garden, London, E.C.

AUGUST 28. — **Seaford.** — **WORKSHOPS.** — Erection of new premises for the Ulster Bank, Ltd. Plans and specification seen with Messrs. Blackwood & J. M. R. I. A. L., architects, 41, Donegal-place, Belfast. Quantities from Messrs. W. H. Stephens & Sons, 13, Donegal-square, North, Belfast, on deposit of 2*l.* 2*s.*

AUGUST 28. — **Seaford.** — **WORKSHOPS.** — Erection of stables, workshops, sheds, etc. Plans and specification seen, and quantities from Mr. F. Spencer Yates, Assoc. M.Inst.C.E., the Surveyor to the Council, Town Hall, Walscot, Deposit of 10*s.* 6*d.*

AUGUST 28. — **Swindon.** — **SHELTERS.** — Construction of shelters at the Workhouse Infirmary, Stratton, St. Mary's. Plans and specification with Mr. John P. Kirby, Clerk to the Guardians' Union Offices, 100, Victoria-road, Swindon.

AUGUST 28. — **Workshop.** — **WARDS.** — Erection of children's wards, extension of adult males' ward, and new kitchens, etc. Drawing and specifications with Mr. A. H. Richardson, architect, Market-place, Workshop. Quantities on deposit of 2*l.* 2*s.*

AUGUST 30. — **London.** — **HOUSE.** — The Metropolitan Asylums Board invite tenders for the erection of a new house at the Eastern Fever Hospital, Seagrave-road, Fulham, S.W. Drawing and specification, by Mr. W. T. Hatfield, M.Inst.C.E., M.Mech.E., Engineer-in-Chief of the Board, Embankment, E.C. Deposit of 1*l.*

AUGUST 30. — **Sevenoaks.** — **TANK.** — Construction of a rain-water tank and plumbing work in connection therewith at the Eastern Fever Hospital, Seagrave-road, Fulham, S.W. Drawing and specification seen with the architect, Mr. Ernest Pawley, 56, High-street, Sevenoaks.

AUGUST 30. — **Warwick.** — **HOME.** — Erection of a pair of children's homes and appurtenances. Quantities from Mr. F. G. Cundie, M.S.A., architect, 4, Parade, Leamington Spa, on deposit of 2*l.* 2*s.*

AUGUST 31. — **Leystonstone, N.E.** — **FOUNDATIONS.** — Erection of the West Ham Union invite tenders for (1) formations of new foundations, etc., to boilers, etc. (2) construction of steel water tank; (3) supply and delivery of Lancashire boilers; (4) iron infirmary, Leystonstone. See advertisement in this issue for further particulars.

SEPTEMBER 1. — **Winchester.** — **COTTAGES.** — The Managers of the Hursley Estate invite tenders for four pairs of cottages on the Hursley Estate. See advertisement in this issue for further particulars.

SEPTEMBER 2. — **Cardiff.** — **RENOVATIONS.** — Erection of repairs and renovations at 13, Northcote-street, Cardiff. Specification from Mr. Arthur J. Harris, Clerk, Council-chambers, Cardiff.

SEPTEMBER 3. — **Barrow-in-Furness.** — **OFFICE.** — Tenders are invited for the building of an office for Messrs. Vickers, Ltd., at Barrow-in-Furness. See advertisement in this issue for further particulars.

SEPTEMBER 4. — **Dozies.** — **WARDS.** — Erection of two new wards, and alterations and additions to the existing building at the Gosh Hospital. Plans and specifications with the architect, Mr. A. J. Randall, M.S.A., 4, 5, John-street, Dozies.

SEPTEMBER 4. — **Glasgow.** — **OFFICES.** — The Canadian Railway Company invite tenders for extension of the Company's head offices. Drawings and specifications at the office of the Company's Engineer, Buchanan-street Station, Glasgow. Quantities on deposit of 2*l.* 2*s.*

BUILDING—continued.
The date given at the commencement of each paragraph is the latest date when the tender, or names of those willing to submit tenders, is sent in.

SEPTEMBER 5.—Aberlillery.—ADDITIONS, ETC.—Plans and additions to the passenger station, for the Great Western Railway, Plans and specifications seen, and quantities from the Engineer, at Newport Station.
SEPTEMBER 5.—Birmingham.—STABLE.—The at Western Railway invite tenders for the erection of a stable at Hockley. Plans and specifications seen, and quantities from the Engineer at Wolverhampton Station.
SEPTEMBER 5.—Minhead.—STABLE.—The Great Western Railway invite tenders for the erection of a stable at Minhead, Somerset. Plans and specifications seen, and quantities from the Engineer, at Taunton Station.
SEPTEMBER 6.—Lichfield.—BARRACKS.—Erection of No. 8 barrack blocks, including drainage, in mains, etc., at the Whittington Heath barracks, Lichfield, in the Northern Command. Plans, specification, and conditions of contract the Office of the Director of Barrack Construction, 80, Pall Mall, London, S.W., or at Barrack Construction Office, Whittington Heath, Lichfield. Quantities from the Director of Barrack Construction. Deposit of 10s.
SEPTEMBER 6.—Norwich.—GALLERY.—Erection of gallery at the Castle Museum. Plans and specifications, quantities, with Mr. A. E. Collins, Inst.C.E., City Engineer, Guildhall, Norwich. Deposit of 10s.
SEPTEMBER 9.—Tewkesbury.—ALTERATIONS.—Alterations to property in Chance-street. Plans seen, and specifications from Mr. W. W. Burroughs Surveyor, Station-street, Tewkesbury.
SEPTEMBER 16.—Chester.—HOUSES, ETC.—Erection of three single dwelling-houses and three farm buildings on the Sound Estate, Nantwich. Plans seen and specifications quantities, on deposit of 10s. from the C.C. Agents, County Estate Office, 49, Northgate-street, Chester.
SEPTEMBER 16.—Chester.—HOUSE, ETC.—Erection of one single dwelling-house and one set of farm buildings on the Macclesfield Estate near Nantwich. Plans seen, and specifications and quantities, on deposit of 10s. from the C.C. Land Office, County Estate Office, 49, Northgate-street, Chester.
SEPTEMBER 21.—Maldon.—POLICE-STATION.—County of Essex Standing Joint Committee tenders for a police-station. See advertisement in this issue for further particulars.
SEPTEMBER 25.—Glasgow.—EXTENSION OF OFFICE.—The Commissioners of H.M. Works tenders for a police-station. See advertisement in this issue for further particulars.
OCTOBER 2.—Kingfield.—DRILL-HALL.—The Tenthion Works Association invite tenders for new drill-hall premises. See advertisement in this issue for further particulars.
DATE.—Aberfeldy.—CHAPEL.—Erection of a chapel. Mr. H. Ascoug Chapman, I.B.A., architect, Prudential-buildings, Glasgow.
DATE.—Barnsley.—SHOPS.—Erection of shops. Mr. Ernest W. Dyson, architect, Regent-street, Barnsley.
DATE.—Bradford.—HOUSES.—Erection of semi-detached houses in Straight-croft Park-road, Eccleshill. Mr. J. Harper, M.S.A., architect and surveyor, Calverley, Victoria-square, Leeds.
DATE.—Brighton.—SCHOOL.—Erection of a new school at the junction of Old Shoreham Dyke roads. Drawings and specification by S. B. Russell, F.R.I.B.A., 11, Gray's-inn-square, London, W.C., and quantities by Mr. H. Hunt, quantity surveyor, Brighton.
DATE.—Canterbury.—OFFICES.—Reconstruction of out-offices at the National School. Plans and specifications with the architect, Mr. J. J. Rogers, 10, High-street, Doncaster.
DATE.—Hawker Mill.—COTTAGES.—Con-

version of outbuildings into two cottages. Plans and specifications with Mr. Jas. Maxwell McGee, Hawker, near Whitby.
NO DATE.—Seaforth.—HEADQUARTERS.—Erection of new headquarters for the 7th Battalion The King's (Liverpool Regiment), in Seaforth. Plans from Mr. H. L. Beckwith, architect, 3, Cook-street, Liverpool, on deposit of 20s.
NO DATE.—Torquay.—GRAND HOTEL.—Erection of a new wing, structural alterations, etc., at the hotel. Quantities, on deposit of 50s. from Messrs. Waymouth, Johnson, & Webber, architects, Torquay Manor Office, Torquay.
NO DATE.—West Hartlepool.—ADDITIONS, ETC.—Alterations and additions to cemetery buildings at Wheatley-hill. Plans seen, and quantities from Mr. J. Garry, F.R.I.B.A., 47, Church-street, West Hartlepool.
NO DATE.—Whitby.—VILLAS.—Erection of a pair of villas in Ruswarp-lane. Names to Mr. Harold G. Walker, architect and surveyor, Golden Lion Bank, Whitby.
NO DATE.—Wombwell.—HOUSES, ETC.—Erection of two dwelling-houses and a shop. Mr. Jno. Robinson, architect and surveyor, Wombwell.

ENGINEERING, IRON, AND STEEL.

AUGUST 19.—Helston.—PARK, ETC.—Construction of a lake and park. Plans and specifications with the Borough Surveyor, Town Hall, Helston, Cornwall.
AUGUST 19.—Radnor.—BRIDGE.—Construction of a small bridge over stream crossing the main road near the village of Bledfa. Drawings seen, and specification, quantities, and forms of tender from Mr. T. L. Wishlade, Surveyor, Penybont, Radnorshire.
AUGUST 21.—Perth.—BRIDGES.—Renewal of the superstructure of the bridge over the River May at Forvie, near Perth, for the Caledonian Railway Company. Drawings seen at the office of the Company's Engineer, Buchanan-street Station, Glasgow. Deposit of 20s.
AUGUST 23.—Baltimore, Ireland.—RESERVOIR, ETC.—Construction of a storage reservoir, stream diversion, cast-iron pipe line, service reservoir, distribution system, and other works. Plans and specification with Mr. P. H. McCarthy, E.E., M.Inst.C.E.I., 39, Westmoreland-street, Dublin, and quantities on deposit of 50s.
AUGUST 31.—London.—TANK.—Construction of a steel water tank at the Union Infirmary, Whipps Cross-road, Leytonstone, N.E. Specification and drawing prepared by Mr. Francis J. Sturdy, F.R.I.B.A., and Mr. Arthur T. Walmsley, M.Inst.C.E., from Mr. Thomas Smith, Clerk, Board-room, Union-road, Leytonstone, N.E.
SEPTEMBER 4.—Porthcawl.—RESERVOIR, ETC.—Construction of two filter beds and a service reservoir. Specification and plans by Messrs. John Taylor, Sons, & Saxo Crimp, civil engineers, Caxton House, Westminster. Deposit of 50s.
SEPTEMBER 6.—Wicklow.—BRIDGES.—The Dublin and South-Eastern Railway Company invite tenders for the reconstruction of three bridges carrying the railway over the Ovoca and Aughrim Rivers, near Woodenbridge, Co. Wicklow. Plans and specification seen, and quantities from the Chief Engineer, No. 52, Westland-row, Dublin.
NO DATE.—Blyth.—PLANT.—Erection of a pumping plant at Hepscott Colliery. Mr. R. Grieves, Surveyor to the Council, Blyth, Northumberland.
NO DATE.—Northfleet.—LIGHTING.—Erection of a lighting installation at the club. Specifications and form of tender from Mr. W. Howard Brown, A.M.Inst.E.E., Park House, Gravesend, on deposit of 5s.

FURNITURE, PAINTING, MATERIALS, ETC.

AUGUST 19.—Blairgowrie.—PAINTING.—For repainting the steel and ironwork of Caputh Bridge. Specification from Mr. G. Wyllie, Road Surveyor, Blairgowrie.
AUGUST 21.—Chartham.—PAINTING.—For painting at the Council school. Specifications by the architect, Mr. W. H. Robinson, Caxton House, Westminster, seen with Mr. F. S. Cloke, Sandwich.
AUGUST 21.—Faversham.—DECORATING.—

Cleaning and decorating, etc., at the various schools. Specifications from Messrs. E. Pover & Son, architects, Faversham.
AUGUST 21.—Shoreham.—REPAIRS, ETC.—For painting and repairs to the infants' Council school. Specifications by the Committee's Architect, Mr. Wilfrid H. Robinson, of Caxton House, Westminster.
AUGUST 22.—Manchester.—PAINTING.—For painting at the West Gorton, Chetham, and Newton Heath Branch Libraries. Specification from the City Architect, Town Hall, on deposit of 10s. 6d.
AUGUST 22.—Manchester.—PAINTING.—For painting at the West Gorton, Chetham, and Newton Heath Branch Libraries. Specification from the City Architect, Town Hall, on deposit of 10s. 6d.
AUGUST 22.—Poole.—PAINTING.—For painting various buildings, etc., in the Poole Park. Mr. S. J. Newman, F.R.I.B.A., Municipal Buildings, Poole.
AUGUST 24.—Brentwood.—PAINTING, ETC.—Repairs and repainting of the fire-station and depot. Specification with Mr. A. J. Meeson, Surveyor, Town Hall, Brentwood.
AUGUST 26.—Cardiff.—PAINTING, ETC.—For internal painting of the hospital and probationary wards at Headquarters' Homes Ely. Specification from Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.
AUGUST 26.—Whittingham.—PAINTING, ETC.—For painting, etc., of the County Asylum, Mr. W. N. Baldwin, Clerk and Steward, County Asylum, Whittingham, Preston.
AUGUST 28.—London.—FENCING.—Erection at Grovelands Park, Winchmore Hill, of jarrah timber fencing and unclimbable wrought-iron railing. Specification and particulars from the Council's Surveyor, Mr. C. G. Lawson, C.E., Council Offices, Palmer's Green, N. Deposit of 20s.
★ SEPTEMBER 2.—Battersea.—ECONOMISER.—The Battersea B.C. invite tenders for the erection of an economiser for the Public Baths. See advertisement in this issue for further particulars.
★ SEPTEMBER 14.—London, W.—WALD LOCKERS.—The Guardians of the Parish of Kennington invite tenders for fifty Canadian birchwood ward lockers for their Infirmary, Marles-road, W. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.
AUGUST 19.—Radcliffe.—SEWERAGE.—Construction of storm-water and humus tanks, conduits, etc. Drawings and specifications seen, and quantities, on deposit of 10s. 10s. from Mr. W. L. Bothwell, Engineer, Council Offices, Radcliffe.
AUGUST 21.—Potsmouth.—MATERIALS.—Supply of granite, etc. Specification from Mr. G. Hammond Eberton, Town Clerk, The Town Hall, Portsmouth.
AUGUST 23.—Boschchurch.—DRAIN, ETC.—For laying a surface-water drain between Boschchurch and the foreshore. Plans and specification, and quantities from Mr. T. R. Saunders, A.M.Inst.C.E., Belgrave-chambers, Ventnor, Isle of Wight. Deposit of 10s.
AUGUST 24.—Newport.—STREETS.—For various street works. Plans and specifications seen, and quantities, on deposit of 10s. 10s. from the Borough Engineer, Town Hall, Newport.
AUGUST 26.—Burnley.—SETTS.—Supply of granite setts. Forms of tender from Mr. H. Pritchard, Surveyor, 18, Nicholas-street, Burnley.
AUGUST 28.—Farnborough.—STREETS.—For private street improvements. Forms of tender, etc., from Mr. J. E. Hargreaves, Surveyor, Town Hall, Farnborough, Hants.
AUGUST 29.—Banbury.—STONE.—Supply of unbroken Harlsill stone. Mr. E. L. Lamsley, Clerk, Union Offices, Banbury.
AUGUST 29.—Birkenhead.—WALLS, ETC.—Formation of paths and erection of boundary walls. Plans and specifications seen, and quantities from Mr. C. Brownridge, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Birkenhead, on deposit of 10s.
AUGUST 29.—Blackpool.—PIPES.—The Fylde Water Board invite tenders for the supply of cast-iron pipes. Specification and quantities from Mr. J. Cook, Engineer, Sifton-street, Blackpool.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
LECTOR OF GOVERNMENT BUILDING WORKS.	Govt. of New South Wales.	1,000l. per annum	Aug. 28
STANT CIVIL ENGINEER	Admiralty	200l. per annum	No date.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
COGS, BATTENS, BOARDS, TIMBER, ETC. Great Hall, Winchester House, E.C.	Churchill & Sim	Aug. 30
DEAN'S MERCHANT'S STOCK.—At Bailey's Repository, Great Ormond-street, W.C.	Skelding & Holland	Aug. 24
FACTORY'S STOCK AND PLANT, NORTHAMPTON.—On the Premises	Woods & Co.	Sept.

LAW REPORT—continued from page 201.

of the witness by Mr. Salter as to the items in the variation account, regarding the gardener's cottage, the witness stated that Professor Waldstein had sold the old material upon the site for an agreed sum to Mr. Minter.

That of itself would not justify Mr. Minter using old stuff as new?—Oh, yes, it would, if he had the architect's permission to use it.

Do you seriously suggest that because these old bricks had become the property of Mr. Minter by purchase, and he was granted permission to use them by the architect, that he was entitled to use these old bricks and be paid for them as though they were new bricks?

The witness replied in the affirmative, adding that they were exceptionally good bricks.

Were these bricks fifty or sixty years old?—I could not say what the exact age of them was, but I should say they would not be more than fifty years old.

If a builder buys old material, as old material, from a customer, and sells it back to the customer as new material, it would be a good thing for the builder?

The witness replied that he did not think that could be said in the present instance, because Mr. Minter had given a good price for the material.

Do you say that because a builder gives a good price for the material he is entitled to sell it back to you as new?

The witness replied that that was his opinion, when the old material was properly valued. In some cases old material might be really better than new. In the present instance the old bricks were exceptionally good.

Referring to the estimate by the witness of the sum due to Mr. Minter for the flooring in the coach-house, witness stated that he thought Mr. Minter was entitled to be paid that sum, having regard to the fact that the flooring in the coach-house was only a small item, and was outside the house altogether, and was not included in the contract. He had applied the same principle generally as to the lodges and outbuildings, as all these particular works were not contained in the principal specification and contract. He did not consider the contract itself applicable to the outbuildings, and his view was that Mr. Minter was not bound by the contract in respect of them.

The Official Referee: Then I suppose you will also say that Mr. Waldstein was not bound either?—Well, I looked at it, sir, in the way that if a man has something he is expected to pay for it.

Cross-examination continued.

In the work on the stables old material was all valued as new.

Referring to the range which Mr. Minter had put in in the stables, the witness stated that Mr. Minter was entitled to the cost of the range, his fair profit, and the cost of fixing.

Is he not obliged to show you what he gives for the range?—It is not necessary in a case like that. I dare say Mr. Minter has the invoice, and is prepared to show it to you.

At the conclusion of the evidence, Mr. Clavell Salter addressed the learned Official Referee on behalf of Professor Waldstein, dealing exhaustively and in great detail with all the points raised in the case.

The learned Council had not concluded his address when we went to press.

LONDON COUNCILS.

Barnes.—Plans have been passed as follows by the Urban District Council:—Additions, West Lodge, Morlake-road, Messrs. Boore & Parker; motor garage, 43, Madrid-road, Mr. A. Harvey; four houses, Melville-road, Mr. C. J. Kerven.

Bethnal Green.—Valuable work (says Dr. G. P. Bates, the Medical Officer of Health, in his annual report) has been carried out under Section 15 of the Housing and Town Planning Act, 1909. This section gives power to a local authority to deal with landlords who fail to keep houses of a gross rental not exceeding 40l. per annum in such a state as to be reasonably fit for human habitation. The powers previously enjoyed in this respect were incomplete. Fifteen notices, under Section 15 of the new Act, were served during the twelve months, and at the end of the year the requirements of twelve of these notices had been complied with, and in three the necessary works were in hand.

Westminster.—Dr. F. J. Allan, the Medical Officer of Health, in his annual report, refers to the fact that as regards drainage, etc., proceedings were taken in only one case during the year, when a fine of 10s. and 23s. costs was imposed for carrying out drainage works in an improper manner. Legal proceedings in connexion with water supply were taken

in six cases. Additional sources of water supply on the upper floors of tenement houses were provided in 1,049 instances. As a rule the Council has not asked for more than one tap between the first and second floors, but the owners in some cases laid on water to each floor. Several owners of property, as a result in the alteration in the method of charging for water, sunk wells. Analyses of the water obtained had been made, and there are curious variations in the water raised in different localities. Water, which is extremely soft, has a tendency at first to act on lead pipes, but after a time they become coated with a protective "skin." Analyses taken some time after the wells had been in use showed that the waters contained no lead. Complaints had occasionally been made by consumers of a white deposit of the salts in the water. The great increase of these deep wells in recent years must have a marked effect upon the underground water in the chalk under London, and as the level sinks, such wells will have to be sunk deeper. The rate at which the level is falling has been estimated at from two to three feet a year, and eventually it may not pay to sink wells to the depth necessary to obtain a supply; possibly, moreover, the quantity of water in this underground reservoir is not inexhaustible. The excavations in connexion with the new St. Anne's Parish Hall, in Dean-street, led to the discovery of the pavement of a well 73 feet deep, containing 57 feet of water. This was the source of supply of the old parish pump, which stood in front of the Vestry Hall. Its use was discontinued in 1866, at the time of the cholera visitation, as it was found that many of the shallow wells were contaminated by seepage from cesspools, and thus became a means of spreading the disease.

OBITUARY.

Josef Israels.

The famous Dutch artist, Josef Israels, who died at The Hague a few days ago, was born at Groningen on January 27, 1824. After leaving school his father took him into his employ, that of a money changer, but observing his talent for drawing, decided to allow his son to follow an artistic career. He placed him at first under two local artists, Bujs and van Wicheren, and then sent him to Amsterdam, where he studied under Jan Kruseman. In 1845 he proceeded to Paris, studying under Picot, and at the Ecole des Beaux Arts. He returned to Holland in 1870, but his first artistic venture, a series of historical pictures, proved a failure. His defeat, coupled with the privations he had been forced to undergo in his student days, brought on an illness which necessitated a stay at the seaside. He went to Zandvoort, near Haarlem, and devoted himself to depicting the everyday life of the fisher folk of the district. With these paintings he rapidly acquired a reputation which has since never waned. He received in the course of his career many distinctions. He earned several medals at Paris exhibitions, was an Officer of the Legion of Honour, a Commander of the Order of the Lion of the Netherlands, and received the Cross of the Belgian Order of Leopold. On his 80th birthday some of his English admirers presented him with 20,000 guilder, which he devoted to the fund raised in Holland to provide a suitable repository for Rembrandt's "Night Watch." In 1906 he was elected a corresponding member of the Royal Academy. The distinguishing feature of his work was the intimate and complete harmony between his technique and the spirit of his conceptions, probably in the works of no other modern painter, save Jean Francois Millet, does the technical mode of presenting the conception go so far towards enhancing the impression created.

PATENTS.

APPLICATIONS PUBLISHED.

18,329 of 1910.—Colin Henry Adams: Ratchet tool for use as a spanner, drill, or lifting jack.

19,299 of 1910.—Mary Ewart Cambell, Walter Cambell, and Alexander Pryde: Building blocks.

21,601 of 1910.—Edgar Newton: Means for connecting the water supply and fixing in position of bends, sockets, unions, or waste pipes to sinks, baths, basins, and the like.

22,301 of 1910.—William Edward Lake (Thomas R. Beggs, Faucet and Valve Company): Faucets and valves.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

22,519 of 1910.—Friedrich Schofer: Manufacture of tubular and like sections of chimneys.

23,212 of 1910.—Reuben John Edgington: Sliding window-sashes.

24,321 of 1910.—Michael Power: Window-blind fittings.

24,565 of 1910.—Thomas Sanders: Casement fasteners and the like.

27,038 of 1910.—Samuel Henry Adams: Mahole covers, surface boxes, gully grate frame and the like.

27,494 of 1910.—David Howells: Method of utilising waste material for the manufacture of concrete and like articles.

SOME RECENT SALES OF PROPERTY

ESTATE EXCHANGE REPORT.

August 1.—By SEDGWICK, SON, & WEALL.

Leavesden, Herts.—Six cottages and smithy, f. 43

Shape, Suffolk.—Freehold farms, etc., 675 acres 7 4

August 2.—By MADDISON, MITER, & MADDISON.

Hickling, Norfolk.—Arable land, 38 acres, f. 8

By MORRIS, MARSHALL, & POOLE.

Bishops Castle, Salop.—Whitewash and Old- 8 0

de Lays Farms, 245 acres, f. 8 0

August 3.—By S. WALKER & SON.

Coulston, Surrey.—8 to 14, Mount Pleasant 1 8

Hookey, Surrey.—3 to 8, Hookey Villas, f. 9

w.r. 132l. 12s.

August 4.—By GILBERT & SON.

Carno, Montigny.—Agricultural estate, 1,550 acres, f. 13 5

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.r. for unexpired term; p.a. for per annum; y.f. for years; h. for half; st. for street; rd. for road; sq. ft. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gds. for gardens; yd. for yard; gr. for grove; h.h. for hearthstone; p.h. for public-house; o. for office; s. for shops; et. for court.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residences in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by *Express* to *Morning's Post* in London and its suburbs. *Foreign* subscriptions, to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 25s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," 4, Catherine-street, W.C.

PRICES CURRENT OF MATERIALS.

* * * Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.			
	Per 1000 Alongside, in River.	£ s.	
Best Stocks	.....	1 13	
Picked Stocks for Fucings	.....	2 7	
Per 1000, Delivered at Railway Depot.			
	£ s. d.	£ s.	
Flettons	1 9 0	Double Headers 13 7	
Best Fareham	.....	One Side and two Ends 17 7	
Bed	3 12 0	.....	17 7
Best Red Pressed	.....	Two Sides and one End	18 7
Bulmoose Faced	5 0 0	.....	18 7
Best Blue Pressed	.....	Plays & Squints	15 17
Staffordshire	3 15 0	Best Dipped Salt	15 7
Do. Bulmoose	4 0 0	.....	15 7
Best Bourbridge	.....	Glaz. Str'ch's	10 17
Fire Bricks	3 14 0	.....	10 17
GLAZED BRICKS.	.....	Quoins, Bulmoose, and Flats	14 7
Best White and Ivory Glazed	.....	Dble Stretchers	16 7
Stretchers	10 17 6	.....	15 7
Double Headers	10 7 6	.....	15 7
Quoins, Bull-nose, and Flats	14 7 6	.....	17 7
Dble Stretchers	16 7 6	.....	18 7
Plays & Squints	15 17	.....	15 17
Second Quality White and Dipped Salt Glazed,	.....	.....	21
per 1000 less than best.	.....	.....	21

Thames and Pit Sand 6 s. per yard, delivered
Thames Ballast 5 s. 3 d. per ton, delivered
Best Portland Cement 29 s. 0 d. per ton, delivered
Best Ground Blue Lias 19 s. 0 d. per ton, delivered

NOTE.—The cement or lime is exclusive of ordinary charge for sacks.

Gray Stone Lime 12s. 6d. per yard delivered
Stourbridge Freeclay in sacks 27s. 6d. per ton at yard

STONE.

Per Ft. Cubic.
BATH STONE—delivered on road waggon, Paddington Depot..... 1 10
Do. do. delivered on road waggon, Nine Elms Depot..... 1 10

PORTLAND STONE (20 ft. average)—
Brown Whitbed, delivered on road waggon, Paddington Depot, Nine Elms Depot, or Pimlico Wharf..... 2 10
White Bashed, delivered on road waggon, Paddington Depot, Nine Elms Depot, or Pimlico Wharf..... 2 10

OILS, &c.

Raw Linseed Oil in pipes	per gallon	0	3	6
--------------------------------	------------	---	---	---

Boiled,	in barrels.....	"	0 3/4
"	" in drums	"	0 3/4
"	" in barrels.....	"	0 3/4
"	" in drums	"	0 4/0
Turpentine,	in barrels.....	"	0 3/4
"	" in drums	"	0 3/5
Genuine Ground English White Lead, per ton	21 10 0		
Finest Dutch, Do "	20 0 0		
Best Linseed Oil Putty	per cwt.	0 11 0	
Stockholm Tar	per barrel	1 12 0	

VARNISHES, &c.		Per gallon.
	£ s. d.	
Fine Pale Oak Varnish	0 8 0	
Pale Copal Oak	0 12 0	
Finest Dutch Pale	0 12 0	
Fine Extra Hard Church Oak	0 10 0	
Superfine Hard-drying Oak, for seats of Carriages	0 14 0	
Fine Elastic Carriage	0 12 0	
Superfine Pale Elastic Carriage	0 16 0	
Fine Pale Maple	0 15 0	
Fine Extra Hard Church Oak	0 13 0	
Extra Pale French Oil	1 1 0	
Superfine Pale Elastic Carriage	0 12 0	
White Pale Enamel	1 4 0	
Extra Pale Paper	0 12 0	
Chinese Gloss	0 10 0	
Best Black Japan	0 9 0	
Black and Mahogany Stain	0 9 0	
French Black	0 10 0	
Berlin Black	0 16 0	
Knottin'	0 10 0	
French and Brush Polish	0 10 0	

TO CORRESPONDENTS

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

ity of signed articles, meetings costs of course.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the author.

We cannot undertake to return rejected communications, and the Editor cannot be responsible for loss of drawings or photographs, or for alterations, comments, or for models or samples, sent to or left at this office, unless he has specially asked for them.

Drawings and photographs submitted for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Drawings and photographs, if not accepted, may be returned to the author, if he so desires, or to create or lend a drawing for publication, is given, subject to the approval of the article or drawing, when the author is asked to return it. If the author is not satisfied with the result, he may return it, if it is unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they are accepted or not.

. and 24 g.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

TENDERS

* Denotes accepted. † Denotes provisionally accepted.

ANSTEY.—For proposed new Council school, of
Leicestershire County Council Education Committee.
Mr. A. H. Hind, A.R.I.B.A., Grey Friars, Leicester. Mr.
Ernest G. Fowler, surveyor, County Education Office,
Leicester. Quantities by the Surveyor —

H. Toone & Warrington	£2,365 16 11	W. Stanger—	£2,073	0	0
G. Toone & Sons	2,154 9 0	J. Sleath	2,016	0	0
W. G. Simons	2,119 0 0	R. Chapman,			
B. Shipman	2,087 12 6	Leicester†	1,993	0	0

† Tender accepted subject to reductions.

ENGLISH SHEET GLASS IN CRATES OF

STOCK SIZES.*			
Per Ft., Delivered.			
5 oz.	thirds	.....	2½d.
"	fourths	.....	1½d.
1 oz.	thirds	.....	3½d.
"	fourths	.....	2½d.
3 oz.	thirds	.....	4½d.
26 oz.	fourths	.....	3½d.
32 oz.	thirds	.....	5½d.
"	fourths	.....	4½d.
Fluted Sheet,	15 oz.	3½d.	
"	21 oz.	4½d.	

ENGLISH ROLLED PLATE IN CRATES OF

STOCK SIZES.*	
Per Ft., Delivered.	
Hartley's	2d.
"	2½d.
"	2½d.
	Figured Rolled, Ox-
	ford Rolled, Oce-
	anic, Arctic, Muffed,
	and Rolled Catho-
	dral, white..... 3½d
	Ditto, tinted..... 5d.

* Not less than three crates.

CHESTERFIELD. For erection of a cottage, stable, etc..			
J. Wright	£654	15	0
S. Brailsford	653	18	0
G. Keeley	650	0	0
Collis & Sons	638	0	0
G. F. Kirk	590	0	0
Holmes & Sons	570	0	0
W. Tomlinson	£556	0	0
D. Brown	554	0	0
Marsden Bros.	520	3	5
S. Wheatcroft, Walton - road, Chesterfield*	518	18	1

LYONS.—For the erection of a new police-station at Jochanan, Mr. J. Dixon Butler, F.R.I.C., Architect and Surveyor to the Metropolitan Police, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:

D. W. Barker & Sons, Ltd.	£12,672	J. Grover & Son,	£11,492
R. L. Birt,	12,291	Prentice & Co., Ltd.	11,490
J. Chessum & Son,	11,858	W. & F. H. Higgin,	11,451
W. H. Lorden & Son,	11,842	S. Smith & Sons, Ltd.	10,940
J. Appleby & Sons,	11,730	J. Sabley & Son, Ltd.	10,753
C. Ansell,	11,678	Padman & Fother- gill,	10,738
K. B. & Gayford,	11,676	Gosden & Sons,	10,687

LONDON.—For redecoration and repairs, etc., for the Camden Brewery Company, Ltd. Mr. A. E. McEwan-Waghorn, Surveyor to the company, 8, King William-street, Charing Cross, W.C.

The "Market Tavern" public-house, York-road, St. Pancras, N.W.
J. Jauncey & Co. £235 C. J. Newby & Bros.* £228
C. J. Newby & Bros. 250
† Revised estimate.

The "Lord Hampden," Hampden-road, Holl way, N. Green & Smith £253 C. J. Newby & Bros.* £230
W. S. Barton & Co. 229

The "Constitution" public-house, King's-road, St. Pancras, N.W.
Kirk & Randall £274 C. J. Newby & Bros.* £205
J. Jauncey & Co. 288

The "British Queen" public-house, Ferdinand-street, Kentish Town, N.W.
Kirk & Randall £235 C. J. Newby & Bros.* £123
J. Jauncey & Co. 223

The "Ponsford Arms" public-house, Malden-road, Kentish Town, N.W.
Kirk & Randall £210 C. J. Newby & Bros.* £157
J. Jauncey & Co. 232

The "Daly Tavern" public-house, Daly-street, Kentish Town, N.W.
Kirk & Randall £288 C. J. Newby & Bros.* £188
J. Jauncey & Co. 243

The "Duchess of Kent" public-house, Charlotte-street, N. Gay Bros.* £210
C. J. Newby & Bros.* £188

The "Tufnell-park Hotel," Tufnell-park-road, N.
Kirk & Randall £230 Green & Smith* £179
C. J. Newby & Bros. 188 Dove Bros., Ltd. 173

The "Portland Arms" beer-house, Wandsworth-road, S.W.
Sheffield Bros. £135 W. S. Barton & Co.* £75
C. J. Newby & Bros. 123

The "Britannia" public-house, Fairfax-road, Hampstead, N.W.
Kirk & Randall £234 C. J. Newby & Bros. £159
W. Eason 206 Dove Bros., Ltd.* 148

The "Admiral Nelson" public-house, Catton Vile, Kilburn, N.W.
C. J. Newby & Bros. £262 0 Green & Smith* £188 17
J. Jauncey & Co. 256 0 A. Bowler* 138 10
Dove Bros., Ltd. 195 0

The "Wandsworth Bridge Tavern" public-house, Wandsworth Bridge-road, S.W.
Kirk & Randall £286 C. J. Newby & Bros. £369
Pattman & Fotheringham Dove Bros., Ltd.* 335

The "Bird-in-Hand" public-house, High-street, Hampstead, N.W.
Dove Bros., Ltd. £225 Green & Smith* £198
W. & S. Barton & Co. 215 C. J. Newby & Bros.* 197

The "Enterprise" public-house, Chateaux-road, N.W.
Dove Bros., Ltd. £184 C. J. Newby & Bros. £169
W. S. Barton & Co. 173 E. G. Gregory* 165

The "Lord Amberley" public-house, Amberley-road, Paddington, W.
Dove Bros., Ltd. £209 0 H. C. Gray & Son* £162 6
C. J. Newby & Bros. 193 0

† Recommended for acceptance.

MARKET HARBOUROUGH.—For new junior Council school, for Leicestershire County Council Education Committee. Mr. Ernest G. Fowler, Architect and Surveyor, County Education Office, Leicester:

T. Hickman & Sons £1,199 0 E. Fox £1,189 10
G. Jarman & Sons 1,165 0 J. Chapman, Kentishland-avenue, Leicester* 1,093 0
F. J. Bradford 1,145 0

MERTON.—For erection of additional offices. Mr. G. Jerram, Borough Surveyor, Merton:

F. G. Lawrence £1,354 10 Burgess & Sons £1,067 0
G. C. Wood & Sons 1,145 0 T. Godwin 1,005 8
E. Peddle 1,130 0 F. & G. Foster 998 0
H. Haun 1,113 0 Smith & Sons 968 0
Sullock & Sons 1,100 0 Pasterfield & English, Street-ham* 932 0
Leve & Co. 1,091 0
T. Holloway 1,072 0

ROTTINGDEAN.—For erection of four receiving houses and infirmary. Mr. J. W. Hawker, architect, 3, North-street Quadrant, Brighton. Quantities by the surveyor:

Rowland Bros. £8,732 A. N. Coles £7,964
W. Lawrence & Sons 8,228 M. Martin, East-Saunders Bros. 8,198 Bourne* 7,745
Field & Cox 8,100 Patrick* 7,698
Longley & Co. 7,983

† Provisionally accepted. ‡ Did not comply with conditions.

SREWSBURY.—For new water supply to Count Hall, with Maignon softening apparatus and fire hydrants. Messrs. Mark H. Judge, Son, & Hayler, architects and sanitary engineers, 7, Pall Mall, London:

Exclusive of Supplying the Main.
W. H. Smith & Co. £637
Perkins Bros., Srewsbury 552

For Supply of 1,894 yds. of 4-in. Main.
Clay Cross Co. £277 B. MacLaren & Co. £254
Stavely Coal & Iron Co. 377

SOUTH HORNBURCH.—For enlargement of school, for the Essex Education Committee (Romford District Sub-Committee). Mr. A. S. R. Ley, M.S.A., architect, 214, Bishopsgate, E.C. Quantities by Mr. J. E. H. Low, Q.S.A., 74, Duke-street, Chelmsford:

Hawkey & Old F. Willmot £1,689 0
man Bruty & Son 1,650 0
McCormick & Sons 1,920 0 Wells & Co. 1,630 0
J. Chessum & Sons 1,833 0 F. & E. Davey 1,620 0
J. S. Hammond & Dowling & Davis 1,575 0
Brown 1,737 0 J. W. Trudgett 1,560 0
O. P. Dwyer 1,737 0 G. Brown, Gray* 1,456 0
Brown Bros. 1,739 0 A. H. Fryd* 1,370 0

[Architect's estimate, comparable with the above, £1,500.]
† Withdrawn.

WEYMOUTH.—For erection of a secondary school. Messrs. Crickmay & Sons, architects, St. Mary-street, Weymouth, and 13, Victoria-street, Westminster, S.W.

C. J. Trask & Sons £7,298 15 0
Jesty & Baker 6,750 10 6
Playfair & Toole 6,447 0 0
J. A. Parsons & Co., Ltd. 6,253 15 0
T. Conway, Ltd. 6,248 0 0
Wort & Way 6,247 10 0
Wakeham Bros. 6,198 0 0
Jenkins & Sons, Ltd. 5,773 0 0
Pittard & Sons 5,649 0 0
H. Gough 5,557 0 0

J. J. ETRIDGE, Jr.

SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2885 Wall, or write

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Co. the Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Grey Stone Lime

GROUND LIME, WHITE CHALK LIME,

PORTLAND CEMENT,
PLASTER, SIRAPITE, AND SAND.

Delivered in truck loads to any Station, or by vans in London.

Address: **JOSEPH S. PETERS.**

Works: MERTHAM, SURREY. Tel.: MERTHAM

Depot: 417, OLD KENT ROAD. Tel.: Hop 3691.

Asphalte.—The Sycell and Metallis Lav. Asphalte Company (Mr. H. Glenn), Office, 41, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouses floors, flat roofs, stables, cow-sheds and milk rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd., LITHOGRAPHERS,

Employ a large and efficient Staff especially to
Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

OGILVIE & CO.,

Telephone: DALSTON 138.
Many years connected with the late firm of W. J. MARCELLER & CO., Ltd. of Bunhill Row.

Amhurst Works, DALSTON LANE, N.E.

EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATE FREE.

ASPHALTE

For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied by

THE French Asphalte Co.

Whose name and address should be inserted in all specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL
CANNON STREET, E.C.

EWART'S

"EMPRESS"

Established 1834.

Telephone:
2570 North.

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

SMOKE-CURE

Cures in 19 cases out of 20.

THE BUILDER

VOL. CL. No. 3577.

AUGUST 25, 1911.

CONTENTS.

Contents.		CONTENTS.	
	PAGE		PAGE
ERNING BRIDGES (WITH ILLUSTRATIONS).....	207	MONTHLY REVIEW OF ENGINEERING (—	
STORY OF THE BRIDGE. III. MEDIEVAL	209	THE PENNSYLVANIA RAILWAY STATION, NEW	
TH ILLUSTRATIONS).....	210	YORK (WITH ILLUSTRATIONS)	219
ARCHITECTURAL ASSOCIATION: FORTY-SECOND		BUILDINGS FOR EXPLOSIVES WORKS (WITH PLAN)	220
ANNUAL EXCURSION (WITH ILLUSTRATIONS)	212	SOME STUDIES OF WEDES (WITH ILLUSTRATIONS)	221
LOCAL NEWS	215	NOTES (WITH ILLUSTRATIONS)	221
GALOW AT RAPIDOLE, NEAR WEYMOUTH (WITH		THE BUILDING TRADE:—	
ILLUSTRATION).....	216	STUCCO	224
EDITION NEWS	216	SOME LEGAL QUESTIONS ABOUT EXTRAS	224
S	216	GOVERNMENT CONTRACTS	225
ERIAL SUMMARY.....	218	GENERAL BUILDING NEWS.....	225
GINES AND REVIEWS	218	PROJECTED NEW BUILDINGS IN THE PROVINCES	226
S TO ILLUSTRATIONS	219	SYLVESTER HOSES, HACKNEY, N.E. (WITH ILLUS-	
YEARS AGO	219	TRATIONS)	227
ESPONDENCE	218	QUANTITY SURVEYORS IN SOUTH AFRICA.....	227
		A NEW METAL FILAMENT LAMP	229
		LONDON COUNCILS	229
		FOREIGN AND COLONIAL	230
		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	230
		LAW REPORTS	232
		PATENTS	232
		SOME RECENT SALES.....	232
		PRICES CURRENT.....	232
		TENDERS	243

Illustrations.

PENNSYLVANIA RAILWAY STATION, NEW YORK :
EXTERIOR. MESSRS. McKIM, MEAD, & WHITE,
ARCHITECTS.
DITTO : INTERIOR VIEWS.
PUENTE DE SAN JUAN DE LAS ABADIAS, GERONA.
PONT DES CONSULS OVER THE TARN, MONTAUBAN.



The Château of Chenonceaux. (A.A. Excursion. See page 212.)

CONCERNING BRUGES.

THE recent article in a contemporary* illustrating an artist's dwelling in Bruges is suggestive considerations wider than its immediate subject. Attractive as are private reserves, their charm, as author justly remarks, is for the illeged few, while it is in any case lined to a narrow area. Such vivid instances, however, naturally one on to a larger and more contentious question; none other, in fact, than that of the artistic fortunes and real conservation of a city which— Venice, like Nuremberg—holds a special place in the international world of art and architecture, and is familiar particular to English-speaking votaries. Is a question which in this day of age must awaken our most watchful rest.

Upon extending one's survey to the town large in its various aspects, one is by a strange conflict of conditions, left at last in a state of mind ugly tinged with dismay. Not Bruges has grown careless of her

history and her charms—far from it, as will presently appear; but she affords in the twentieth century the unusual spectacle of a city bent, on the one hand, on renewing her medieval youth, and, on the other, upon bringing herself into line with the latest commercialism. She is busied, in fact, in making the best of both worlds, the old and the new. The attempt is obviously hazardous: it irresistibly calls to mind the warning phrase *Ceci tuera cela*—where modern and medieval dispute the field. Not, again, that her chief memorials of the past can ever be seriously endangered, but that that rarer and more elusive thing, her old-world atmosphere, the relative integrity of age yet remaining to her, may be suffered—half unconsciously perhaps—to evaporate.

A recent writer of a descriptive volume has been pleased, following a popular tradition, to entitle the same "Bruges la Morte." Were she indeed so in certain modernist aspects, it need surely give no ground for real regret. For it seems hardly fanciful to suggest that cities and countries, even as individuals, have

a mission marked out for them by their character, circumstances, and traditions, a part to play in the world, a moral ideal to exhibit, with which even their material well-being is in a measure bound up. The vocation of Bruges would seem to be plainly declared by her past, and by its bequests through her to the present: to be the trustee of history and tradition, the witness to ancient art and ancient religion, the exemplar of modes of life and habits of thought which more modern communities cannot teach us—is not this a sufficient rôle, and are not such things, and nothing else, the lure that draws within her gates even yet the stranger from every strand?

Enough, however, of generalities; let us give specific proofs that regrets and anxieties are not groundless, at the same time allowing due weight to the more gratifying evidences which may meet us. Within the city the inroads of modernism are, so far, least noticeable. The street railway, indeed—an outrage unknown in industrial England—is an evil already of long standing, and now, it would seem, the electric tramway is to ply in

* See the *Connoisseur* for June.

thoroughfares which, up to the present, have scarcely peopled an omnibus. The widening, too, of the Rue Breidel at the heart of the town, the development of the plate-glass front in the larger streets, the stealthy removal of homely gables from the lesser ones and the like, are innovations serious enough. But it is on the fringe and in the approaches of the city—points that determine so largely its character, and give the traveller his first and last impressions—that the main mischief has been done. The prospect from the Minnewater Bridge is justly famed; yet even here one must be careful to look the one way, for on turning about one is confronted with extensive and unsightly ironworks built on the very brink of the canal, where till lately all was green and peaceful. At the other end of the city one cannot view the venerable gables of the Poterie without being *assommé* (the French word is apt) by a towering factory that dwarfs and vulgarises all its surroundings. The most widespread havoc, however, occurs on the neighbouring boundary of the town to the north, and is connected with the ship-canal scheme which would model Bruges on Manchester. Here a whole length of leafy rampart and curving moat have been remorselessly levelled and filled in and laid bare. Thereby the old *Porte d'Ostende* has been left half dry and wholly unscaled. It would be excellent work for the unemployed—if such there be in Bruges—

to restore the ravished waterway. Meantime the site thus treated—*terra deserta et inria et inaquosa*—has been thrown into the new suburb rapidly springing up all about it, and those who deplore this wholesale transformation must get what comfort they can from the sounding and romantic titles fitted to its leading thoroughfares—*Boulevard Marie-de-Bourgogne*, *Toison-d'or*, and the rest. Mention of the ramparts reminds one that of a score and more of windmills that once studded their grassy mounds, but a single one was left. A companion mill overturned some time since by a storm has never been re-erected; the site waits, and the old fabric is understood to be available—another chance for the restorer. It must be allowed that the steel telephone towers which now—they were the latest acquisition—challenge the eye from point to point through the town make poor proxies for these relics of a day when even mechanism was picturesque! What may follow in the wake of the diversion of the railway system now pending and in progress one cannot pretend to foresee; one can only deplore the attempt at monumentalism already apparent in this connexion; from the æsthetic point of view the only thing to do with a railway is to keep it as quiet and inconspicuous as possible.

Now to glance briefly at the other side of the medal. Let it be acknowledged, fully and gratefully, that in the majority of new and renovated buildings

local traditions of style have of late been followed, and with much success. The development illustrated by the "House of the Visitation" has been widespread. All praise is due to this remarkable revival of civil and domestic architecture embracing in some cases the accessories and crafts. Many new and excellent frontages both great and small, of agreeable design and tonality, are due to the movement; while many old ones have been restored to warmth and colour by the simple removal of whitewash. There is no doubt a tendency to over-elaborate and over-vary, especially in public buildings, which too often lack balance and repose displayed in the mediæval models, where symmetry was never lost sight of. This tendency nowhere more evident than in the great official block on the Grand' Place—pile due to an architect of ability now deceased, and at present receiving an interesting addition from another hand. In this case the splendid simplicity of the ancient *Waterhalle*, which formerly stood upon the site, might well have lent inspiration to the late designer.

One cannot speak of vanished monuments without recalling another danger. No town of antiquity is better documented than Bruges. Numberless plans and views from the XVth century onwards show us, though necessarily on a small scale, not only buildings now respectably ancient, but even the predecessors of these. Hence a temptation to "restore" and reconstruct wholesale on data really insufficient, and to supplement them at need by conjecture. It would matter less were existing authentic work left untouched in the process. But, alas, this is not so! Certain alterations, indeed, have been excellently conceived—for instance, the restoration of the "Academy" building to its original proportions. On the other hand we have in the west front of Notre-Dame a brand-new design, stiff and severe, to which the old façade, with its charming angle-turrets, has been ruthlessly sacrificed. That modernism should attain mediævalism is not surprising; but that antiquity should perish at the hands of its avowed admirers and imitators is grievous indeed. From the twofold danger thus confronting her, may Bruges—the Bruges of Memline and Van Eyck and David, of Blondel, of Caxton, and many memorable names and traditions—be in the hereafter preserved.

Those who dwell on the spot, to whose change comes piecemeal, are naturally less alive to it than those who revisit the city at intervals of time. But the many of the above considerations are realised by men of knowledge and standing within her own borders is explained in the pages of the recent monumental work of the archæologist and historian, Canon Duclos: "*Bruges Histoire et Souvenirs*." One welcomes the opportunity of offering from without some slight support to their position.



West Doorway, Notre-Dame, Bruges.

(From *L'Emulation*.)

RESEARCH HOSPITAL, CAMBRIDGE.

A research hospital is being erected in Cambridge for the Committee for the Study of Special Diseases, at a cost of some 2,000. The plans, prepared by Mr. Herbert V. Maguire, provide accommodation for twenty patients in a building which will also serve as a private residence.

NOTES.

Hygiene of the Eye.

At a luncheon given recently by one of the leading electrical companies to representatives of the Press Leon Gastier, referring to what has been done as regards electric lighting, what they sought to do, made use of a phrase which should find its place among those that throng, under modern conditions, round the architect of to-day. "Hygiene of the Eye" bespeaks an attitude of mind forced upon us by the very considerable perils which beset our most delicate organ to an increasing degree. It is still assumed in an entirely critical and undiscriminating way that the maximum of light in any circumstances is the object of human desire, and the condition of human welfare. The majority of modern dwellings on city sites are overlit even in the daytime, and at night the chilly glare of incandescent burners and the hard brilliance of the filament lamp in our public places, in the streets, in the taverns, and even in the parlours of our homes, wring from the eye the recuperative restfulness which is intended by Nature to supply the brilliant and whiter light to an even more intolerable degree is still the desire of the manufacturers, and one which we must suppose, though it is doubtful really, to be the desire of the public. The necessary consideration of the hygiene of the eye has been discovered, however, in scientific ways at persons of taste and sensibility have always known. In our modern apartment houses light from electric lamps is rendered as innocuous as may be by the use of sheathing and shades of softly coloured silk, and candles are extensively used. The student has learned to turn to his oil lamp. We would not be surprised if a fair-minded consideration of illumination from the point of view of the scientist were to arrive at the conclusion that a light of this character is the ultimate desideratum.

London Water Supply. THE annual reports of the Water Board and of Dr. Houston, their Water Examiner, form a highly satisfactory reading. Without going to a far country for supplies or undertaking any specially heroic measures for the same purpose, London has an abundant quantity of pure and wholesome water, derived from a polluted and long-suffering river. The population of more than seven millions was supplied last year with 31.57 gallons per head daily, representing the aggregate volume of 82,170 million gallons for the period ending March 31. Dr. Houston's report confirms the conclusions previously stated as to the purifying effects of storage on a large scale. So effective is this process that it is practically impossible to detect the germs of water-borne disease in raw water which has been stored for a comparatively short time. As Dr. Houston says: "Storage is Nature's method of purification without the addition of any purifying agent to the water." Beyond this safeguard, now generally applied, thanks to the magnificent reservoirs of the Water Board, we have the further purification effected in sand filters, where 98 or 99 per cent. of the remaining

organisms are removed. Comparing their abundant supply of pure water with the inadequate and somewhat questionable supplies available in Paris, Londoners have every reason for gratitude to the Metropolitan Water Board and to the old companies by whom were laid the foundations of the present incomparable system.

New Method of "Building." THERE come—from the United States, of course—photographs of the erection of a church in four slabs. On the foundation wall and on piles inside the boundaries of the site a series of steel jacks is laid down. These jacks consist of a supporting carriage, a pivoted walking beam, and a collapsible screw driven by a worm gear and worm. A platform is laid on the jacks, and on this platform the design of the façade is laid out; all door-frames and window-openings are set in this position, and the concrete is packed round them. The whole wall is cast at once, allowed to dry, and slowly raised till it is perpendicular. The quoins are finished, the roof applied, and a "church," or anything else you will so long as it be formed of plane surfaces, is the result. This is undoubtedly practicable, and a legitimate

extension of the collapsible summer-house, itself derived from the packing-case, all being logical and simple methods of enclosing cubic space. However, be the design as perfectly proportioned and harmonious as it may, let no one imagine that architecture is involved.

Strikes and Electric Lighting. THE strike of workmen at the Liverpool power station draws attention to the need of amending

the Conspiracy and Protection of Property Act, 1875, to bring it into line with modern requirements. Sect. 4 of that Act contains special provisions relating to employees of a municipal authority or of any company or contractor upon which is imposed by Act of Parliament the duty of supplying any city, borough, town, or place with gas or water who wilfully or maliciously break contracts of service knowing or having reasonable cause to believe that the probable consequences of such breach will be to deprive the inhabitants wholly or to a great extent of their supply of gas or water. Electric light has in many towns and districts superseded gas, and the reasoning which made special provisions desirable in regard to employees employed in supplying gas under statutory powers applies



West Front, Notre-Dame, Bruges.
(From *L'Emulation*.)

with equal force to employees engaged in supplying electric light under similar conditions, yet we are not aware of any statute which extends the provisions of sect. 4 of the Conspiracy and Protection of Property Act to workmen engaged in the supply of this modern necessity of life—electric light. Possibly the section could usefully be extended to other statutory undertakings as well where public interests are concerned.

A Lesson of the Strike.

WHILE congratulating ourselves upon the cessation of the railway strike it is impossible to escape one disquieting reflection. Mr. Lloyd George's scheme of 1907, which was generously acclaimed by all parties, and accepted by both masters and men, should have rendered this national strike impossible. Unfortunately, it seems to have shared the fate of many an international treaty. The last chapter in the history of such an instrument too often records its destruction at the hands of one of the signatories who had become dissatisfied with its working. It would appear that in these industrial conflicts the most perfect scheme of settlement—should it fail to turn out as advantageous in its effect as had been anticipated when it was drawn up—cannot be relied on for a lasting peace. Signed agreements may be ignored or repudiated, and an ancient warning slightly paraphrased aptly applies to this modern situation—"Put not your trust in treaties nor in any scheme of man's." Our readers will notice that they are touched most closely by the closing paragraph of the Instructions to the Special Commission of Inquiry which has been formed—"The Government have promised the railway companies legislation providing that an increase in the cost of labour due to the improvement of conditions for the staff would be a valid justification for a reasonable

general increase of charges within the legal maxima, if challenged." Reading between the lines the manufacturer and trader will be prepared to find a share of the burden laid upon their shoulders—as usual.

THE STORY OF THE BRIDGE.

By WALTER SHAW SPARROW.

III.—MEDIÆVAL.

TO ENCOURAGE the making or the upkeep of bridges was counted as an act of piety in mediæval days, "a blessed besines," a charitable duty, essential to the safety of pilgrims and wayfarers; so bishops and abbots, to bring this matter home to lay minds, granted remissions of penance to those (and they were many) who forgot that the King's highways had to be kept in order by every landlord who owned property in their neighbourhood. This, in theory, was part of the *trinoda necessitas*, but landlords often shifted the obligation from themselves to their tenants, who kept their conscience quiet by having no dislike for a bad memory. Then the law became busy, trying to fix blame on the right persons; and as the law, then as now, halted for many "refreshers"—greedy thing!—the church, more active by far, gave practical help, granting "forty days indulgence to all who would draw from the treasure that God had given them valuable and charitable aid towards the building and repair" of some poor bridge or other. But there was no fun in this; the fun began when justice, having come to a definite decision, told the bailiff or the sheriff to be aggressive in right directions. If landlords or their tenants declined to pay what they owed to the bridge, then some of their property was seized—a horse, a cow, a flock of geese, something saleable, in fact; as in the case of Hamo de Morston, of Old Shoreham, in Sussex, who in the eleventh year of Edward II. made a great outcry because a bailiff, good Simon Porter, had not only taken a horse from him but sold it for the benefit of the venerable timber bridge. Hamo appealed against this act, but without success. A little historic immortality he did gain, but nothing useful to himself.

And I am glad—very. It was men of his

type who in the Middle Ages disfigured the architectural history that bridges ought to have handed on unharmed from generation to generation. They were not so bad as the industrial spirit which during the last century has played havoc everywhere, destroying ancient bridges as if they were evil things; but whether the Hamo de Morston belongs to this age or to another, he is always a pretentious fool. Think of the interest which Old London Bridge would excite to-day if it had been kept as a great historic monument. When Samuel Scott painted it in 1745 it was still a romantic street, with houses and shops; and at the time of its final destruction, in the year 1831, when New London Bridge was opened to circulation (after costing 1,458,311*l.*, by the way), its value as a show-place was a legacy from the long ago which ought to have been delivered down, properly renewed, to our shillings and sixpences. But modern trade has ravaging ambitions, and criticism has no more effect upon it than bullets have on a target. We must consider ourselves fortunate that although in England there is not even one old bridge equal in importance to many on the Continent, yet we do find good examples of mediæval bridge-building, particularly in districts where there has been but little increase of traffic. We possess bridges with defensive towers and bridges with chapels, as I shall show in my next paper; and some good specimens exist of bridges with triangular recesses built out from the parapet and forming a part of the piers. These were designed not only as shelter-places for wayfarers, but also because they lessened the cost of bridge-building, inasmuch as they gave width and convenience to a narrow roadway, so that their value in this work is very similar to that which bay-windows have long had in the planning of rooms.

By way of example I give the famous Llangollen Bridge, with its four unequal arches, and its look of bluff vigour in old age. It comes down to us—a little widened, thirty-three years ago—from John Trevor, Bishop of St. Asaph, who died in 1357, and whose workmen did not care a rap for uniformity of design. What they liked was a secure foundation for each of their piers, and it saved time and expense to sound the river-bed and to build from the flattest places in slippery rock. The widest arch would have



Llangollen Bridge, XIVth Century.

[Photo. by Frith.]



Chinese Bridge.

[Photo. by Mansell, London.]

span of 28 ft., and the two smallest ones could occupy the central position. But the main point, after all, was to do such work as could withstand the fury of a gathering flood. In this one matter the craftsmanship was a complete success. But there is no ambition, no imagination, in the design of Llangollen Bridge. It conquers the dangerous waters, but in a stubborn, dull fashion. It has the look of Hodge in armour, heavy and dogged, dauntless and lumbering. And this applies to many a British bridge having a long history. The one over the Tyne at Dumfries, which was long considered the finest after Old London Bridge, is a damaged exception, dating from the XIIIth century. Formerly it had thirteen arches—an unlucky number, perhaps, for only seven are now in use. There used to be a high aspiration in the design, a certain triumph over difficulties and perils, and for the remains of this quality we have reason to be grateful.

Old England used to speak with delight about a certain beauty described as "faerie," a certain grace that aspired with an air of heroic life, as if it came into the common world from that enchanted time when King Arthur ruled. It is just this faerie magic that old English bridges lack. They are good pedestrian bridges, often enough, but the great poetry of Gothic art, its easy triumph and upward flight, is absent as a rule. Here and there we come upon a half-exception, to the ever-famous Tyne Bridge, Northumberland, which has changed but little since Lord Surrey threw his army across it to reach Flodden Field, turning the flank of the Scotch hosts.

It is a graceful piece of architecture, alert

and wideawake; it has one strong arch, with a touch of the XIIIth century in its semi-circular span, which measures 90 ft. 7 in. from abutment to abutment. The parapet from its centre shelves downwards at each side, its greatest height from the waters of the Tyne being 46 ft. 2 in. I note, too, that the arch is groined and ribbed, quite a common trait in mediæval bridge-building, above all, in Poitou and in England. Viollet-le-Duc mentions this kind of arch, and says that the groins, separated from the bed of the road by a space filled with loose flagging, were *posés en rainure dans les piles en conservant une parfaite élasticité*. All rain-water that found its way through the road passed with ease between the joints of the flagging, without leaving a deposit of saltpetre on the haunches of the arch; and, as the work was lighter than in other arches, there was less pressure on the piers. Moreover, this system of arch-building, which dates from the end of the XIIth century, or from the beginning of the XIIIth, was more economical than any other, employing one-third less of keyed materials. The spandrels above these groined arches were of ashlar, and it was easy to repair them without interrupting traffic.

Another distinguishing characteristic of mediæval bridges is what the French call the *dos d'âne*, the shelving parapet and roadway on either side from a point just above the keystone of the central arch. It is often supposed that this trait is European, yet it is found also in Chinese bridges, which are very graceful at their best, pure and strong in design, and having fine arches in which the semicircle is prolonged without forming a true horseshoe. I have chosen a

Chinese bridge as an illustration, and set it side by side with two Spanish examples, the Puente de San Juan de las Abadesas at Gerona, and the Puente Mayor over the Miño at Orense, Galicia, which, to my mind, is the most stately of all shelving bridges. The Moors left in Spain a peculiar grace of style which native architects often united to their own qualities, a haughty distinction and a lofty ambition. Consider the immense nave in the Gerona Cathedral, a glorious pointed vault measuring not less than 73 ft. from side to side, almost double the width of Westminster nave. It belongs to the XVth century, yet in the magic of its youthful hope it proves that its architect, Guillemo Boffi, was a child of the XIIIth. And the great central arch of the Gerona bridge has in it some of the soaring courage that transcends all expectation in the cathedral nave.

This bridge, with its look of battered antiquity, is certainly very fine, but less majestic than the masterpiece at Orense, a stone bridge of the XIIIth century, with seven elastic arches, all alertly dignified, and with a total length of more than 1,300 ft. The great central arch is 156 ft. wide between the piers, and its keystone is 135 ft. above the river-bed. "The Miño rises rapidly and to a great height," says Walter Wood, in "A Corner of Spain"; "and it was with the object of safeguarding the bridge against the sudden inundations that the arch was made so high."

True: and this brings us to the origin of those bridges that shelf down at each side from a point in the centre of their parapets and footways. Two useful purposes were served by making the central arch wider



The Puente Mayor over the Miño, Orense.

[Photo. by Lacoste, Madrid.]

and higher than the others, since there was greater space for navigation as well as for waters in flood; but when a bridge had only one arch its up-and-down roadway was usually inconvenient, because the incline was not long and gradual, but short and steep. Take the Pont-y-Prydd, near Cardiff, built in the XVIIIth century, and having a pathway so abrupt in its slope that laths of wood used to be stretched across it as a foothold for horses. In frosty weather a shelving bridge was often a breakneck place; and there is evidence that architects at an early date told each other that their departure from the Roman tradition of level bridges was undignified. It was a tradition not without exceptions, since the *dos d'âne* was used at times by Roman bridge-builders; but a level causeway was more typical of Roman craftsmanship, and it influenced medieval architects and engineers. Among my illustrations is a good example, *Le Pont des Consuls* over the Tarn at Montauban.

Here is a noble monument of the XIVth century, and its history brings before us a good many of the hindrances to bridge-building that held sway over craftsmen in the Middle Ages. Whenever a bridge would connect the lands of rival lords or of jealous provinces or counties, its construction was resented and opposed; when built, determined efforts were often made by one party to hold it against the other; and sometimes a great fortress was put up at each end, commanding the entry. Though the village of Montauban was founded in 1144, by Alphonse Jourdain, Comte de Toulouse, and though the founder ordered that a bridge should be made at once and kept in proper repair for the inhabitants, yet nothing was done for many generations. Sometimes poverty was pleaded as an excuse, and sometimes the Albigeois wars; delays breed excuses invariably. But at last, in 1264, the good men of Montauban became active, and in 1291 they bought the island of Castillons or of Pisotte to serve as a foundation for some of the piers; but even then their efforts would have given way but for Philippe le Bel, who asserted his authority as King, appointing two consuls as overseers, and commanding that a tax was to be levied on all visitors to Montauban as a means of raising funds for the bridge-building. Three strong towers were to be built on the bridge, one at each end, the other in the middle; and these towers were to be guarded for the King by Royal troops. These commands were given in 1304, when Mathieu de Verdun and Etienne de Ferrières were consuls. Yet nothing much was done. The bridge seemed to creep into existence, for it was not finished till 1335. Still, the design was boldly good and the craftsmanship was excellent.

It is a bridge entirely of brick, 250 m. 50 cm. in length. The bricks are excellent in quality, and measure 5 centimetres in thickness, 40 centimetres in length, and 28 centimetres in width. The roadway is perfectly level, and its height above the level of the Tarn is 18 metres. There are seven pointed arches, having an average span, or chord, of 22 metres; and the six great piers with beaked buttresses are 8 m. 55 cm. in thickness, and note how they are pierced with high arched bays to facilitate the passage of water during floods. The defensive towers have gone, but the strongest ones of all was built at the end facing the town. It was square in shape, and its summit was a platform with crenelles and machicolations. The other end tower was a weaker version of this one, while the central defence, built over the middle buttress on the side looking down the river, was triangular, and there was room enough in it for a chapel. A flight of winding steps went down to a postern pierced through the buttress at the water's level; and at the other side of the pier, just below the arched bay, hung a sort of see-saw that carried an iron cage in which blasphemers were put to be ducked in the river.



FORTY-SECOND ANNUAL EXCURSION: TOURNAINE.

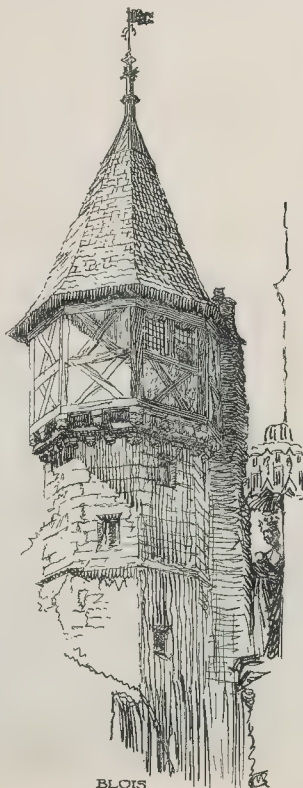
IN 1905, the last occasion on which the A.A. Excursion visited France, the headquarters were at Lisieux, and by the selection of old Tournai as the district for this year's excursion a very different objective was ensured. Around Lisieux the country is rich in brick and half-timber cottages and small manors, while Tournai shows an unequalled series of medieval and Early Renaissance stone châteaux and mansions. The district is one rich not only in architectural remains, but in historical associations, and has an added interest for Englishmen as having formed part of the dominions of our Angevin kings, whose hearts, indeed, were generally here, where with plot and counter-plot they sought to secure and extend

their French dominions. The country to this day an enduring testimony to character of the feudal system, under which the great territorial nobles waged continuous war with one another, combining and combining with bewildering changefulness the great game. In a later epoch most of the feudal castles became hunting boxes, the nobles remained. Up to the time of Francis I., under whom the Court of Burgundy migrated to Paris (where under later kings it finally settled), Tournai had been the centre of political France, if a centre it could be said to have. The Court for centuries moved to and fro among the pleasant châteaux in the valley of the Loire.

Between Blois and Saumur, a distance of about eighty miles, the Loire receives from the south four tributaries, the Cosson, the Cher, the Indre, and the Vienne, and the country so watered was covered until the end of the XVIIth century with a multitude of châteaux, not only the frowning towers of feudalism, but the more gracious elegant abodes raised by the nobles of later days. The wars of religion and of the Fronde accounted for some of them, the great Revolution destroyed more, but still a great number remain, a tribute to their excellent solidity and to the enduring qualities of the fine building stone with which they were constructed.

Whether consciously or not, the Honorary Secretaries in arranging the excursion laid down a programme almost exactly similar to that of John Evelyn, who visited the Loire Valley in 1644. He also stayed for a few days at Blois, passing on from thence to Tournai, "where," he says, "we were design'd for the rest of the time I had resolv'd to stay in France, the sojournment being so agreeable. His method of progression, however, though less expeditious, was the more picturesque for "he took boats on the Loire," where, in later days took train or motor to reach the various châteaux on the banks of the river and its tributaries.

The party arrived at Blois on the morning of Saturday, August 12, having travelled all night. This arrangement, though much to be preferred owing to the great heat, necessarily prevented a very active spirit on the first day, and the time was spent in leisurely exploration of the town. Beside the chateau it contains much interesting work. The fine abbey church of St. Nicholas attracted, perhaps, most attention. Built by the Benedictines between 1135 and 1210, it has all the refreshing freedom of early pointed work, before planning and design had fallen too much into orthodox lines, and it suffered little from restoration. The choir transept, and easternmost bay of the nave are the earliest work, and show very beautiful Byzantine carving and other curious Romanesque details. Very interesting is the plan of the east end. The choir is two bays long beyond the central tower, with double aisles on either side, the outermost forming the chapels opening out of the transept. The apse is divided in seven narrow bays by cylindrical shafts carrying pointed arches, and from the ambulatory which encircles the choir, three chapels, the central one of which has been rebuilt and lengthened late in the XIIIth century. It is now two bays long with a polygonal apse and large geometrical windows. Previous to this extension the external effect of the clustering chapels would have been better seen, the apses of the long transeptal chapels and those of the chevet coming into relation with one another. The low central tower contains an interesting lantern in the form of a ribbed dome springing from a circular arcade on pendentives, which may be derivatives from Fontevault. The nave, slightly later in date, with plate tracery in the clearstory, is of five bays, the westernmost, between the twin towers, having a low-vaulted gallery, inserted in the XVIIIth century, carrying the organ. All the church is stone vaulted. The western front is striking and well seen from a little distance. Its twin towers are aggressively unequal in spacing, but recover their effect in relation in their belfry stages, each consisting there of an open double arch on each face without louvres. All three towers are surmounted by slated spires of not very convincing form. The western portals have been severely damaged, but are fortunately unrestored. The cathedral of St. Louis, fine



on the stonework. The columns round the drum of the fantastic central lantern display entasis in a particularly obnoxious form, and there are numerous other lapses in detail. The château is, nevertheless, a building on no account to be missed, and well repaid the trouble of visiting under rather trying conditions.

A long drive in a south-easterly direction from Blois is ordinarily the means of reaching the Château du Moulin, but owing to the tropical weather no coach would undertake the task. The train had therefore to be taken as far as Romorantin, and the château reached from thence by road. The house is a beautiful and complete specimen of very early Renaissance manor, built in 1480 by Pierre du Moulin. The design is said to be due to Jacques de Persigny, and includes a number of the inevitable round towers with their extinguisher roofs and an encircling moat with drawbridge. The construction, like most of the latest medieval domestic work, is of brick and stone. The house is approached on the north side through a gateway tower flanked by lofty turrets pierced only with oilets. The wing westward of the entrance is incomplete, but that to the eastward, uniting the gatehouse to a circular corner tower, shows the intended form. The house proper stands entirely within the square formed by the curtain wall, and is a lofty structure, consisting of two rooms on each floor, with a staircase tower to the east and a circular-ended turret opposite on the west face. A tiny oratory, containing in its traceried windows some beautiful old glass, opens northward from the hall on the ground floor. The house has been restored in recent times, but has not greatly suffered. It now contains some very beautiful old furniture. The return to Blois was made from Mur de Sologne, where a brief stay was afforded to examine the rather curious little church with fantastic slated spire and simple octagonal apse of good proportion.

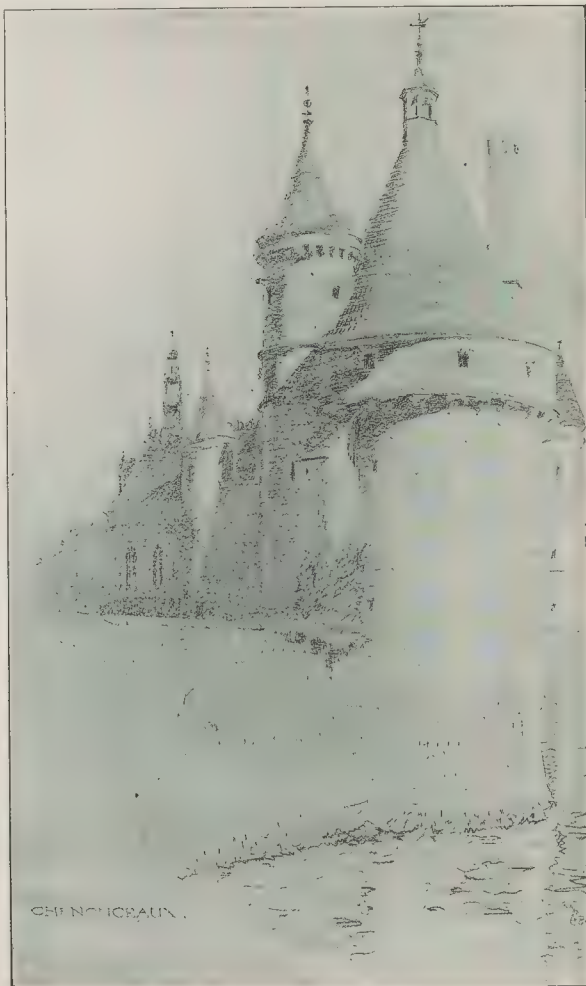
Second Day—Tuesday.

A short railway journey, followed by a walk of about a mile, brought the excursionists to the entrance lodge of the Château de Chaumont, at which it was intended that the working day should be spent. In the troublous times of the Middle Ages Chaumont was an outpost of the Counts of Blois against their formidable enemies the Counts of Anjou and Touraine. Previously to the present building, which is a semi-fortified château built by Charles, brother of the Cardinal d'Amboise, about 1475, two feudal castles successively had been razed to the ground in the interminable wars of the rival nobles. The new château was originally a complete quadrangle, but the fourth side, towards the river, which was in existence in 1681, was pulled down by M. de Vaugien, a Parisian magistrate, to whom the domain belonged in 1739. By so doing he opened up the view over the Loire Valley, with (in the foreground) a "sweete island, deliciously shaded with tall trees," which the author of "Sylvia" noted when passing "Charmont, a proud castle on the left hand" (of the Loire), in the course of his foreign tour. The building stands high above the river on a precipitous slope, and is approached somewhat curiously from the high ground behind by a gatehouse and drawbridge placed obliquely so as to enter at the angle of the courtyard. Flanking the gateway are two round towers with conical roofs, known respectively as the Tour du Roi and de Diane. At the north-west angle the tower of Amboise is largely of the earlier building, while at the north-east is yet another round tower. On the right of the entrance is a carved panel containing the shield of arms of Charles d'Amboise, and on the left those of his brother the Cardinal. Encircling the building is a curious frieze of emblems said to represent volcanoes as a rebuts of the place's name, alternating with a monogram of Charles and Catherine de Chauvigny. A fine polygonal tower facing the courtyard to the right of the entrance contains the escalier d'honneur, a spacious spiral stairway, flamboyant in all but its minor details. Mounting this stair and passing through the guardroom, the council hall is next reached. Here the attention is arrested by a remarkable floor of faïence, said to be from Palermo; interesting but not wholly satisfactory. In 1569 Catherine de Medici bought Chaumont, which she held until the death of Henry II, when she compelled Diane

de Poitiers to render up Chenonceaux in exchange. Chaumont somehow escaped the troubles of the Revolution, and contains a splendid collection of old furniture and tapestries, much of it original; Catherine's chamber in particular has very fine tapestries. Opening from this room is the chapel with gallery and shallow apsidal recesses converting it to a Greek cross plan. Adjoining is also the chamber said to be that of Ruggieri, Catherine's astrologer and poisoner, whose cabalistic signs are seen repeatedly about the castle. In his room is a fireplace with back lined with Delft tiles, which is the most pleasing detail seen in the building. Diane de Poitiers did not favour Chaumont, preferring her château of Anet, but her room is also shown, with a tile floor bearing her badge of interlaced crescents. The property is now owned by the Princess de Broglie, who jealously guards it.

Leaving Chaumont earlier than had been intended, owing to permission to sketch being withheld, the train was taken from Orléans to Tours, the headquarters for the remainder of the excursion. Always a place of considerable importance since Roman times, when as Caesarodunum and afterwards Urbs Turonum it became the capital of a province, it is now a thriving city of some 70,000 inhabitants, and contains many fine buildings, modern as well as ancient. The railway terminus and the Hôtel de Ville, by Laloux, are among

the most notable of the modern buildings, and both gain full effect from their setting, which is one of the things that "they manage better in France." There are other instances in the town of attention to town planning in the sense which it is so hard to get our English local authorities to recognise. The approach to the Pont de Tours by the fine open Place du Musé, with broad tree-shaded quays extending on either side, is one such. The many interesting ancient buildings of the city were necessarily given but scanty attention, owing to the demands of the programme of outside visits, which left but little time. The Cathedral of St. Gatien perhaps received most notice. This is the third church which has stood upon the site. Tours, it must be remembered, was the cradle of Gaulish Christianity. St. Gatien to whom the cathedral is dedicated, was a missionary, but the second bishop, St. Sidonius, began the first cathedral, in which his successor, St. Martin, ministered. This was dedicated to St. Maurice, and when burnt in 561 was rebuilt by Gregory, to be again burnt in 1166. The present building was begun in 1170, and by 1260 the greater part had been finished and rededicated to St. Gatien. The western bays of the nave with the west front are of the XVth century, the towers having been begun in 1426. They are of unequal height in every stage, and terminate in Renaissance double cupolas completed in 1500 and about 1550.



The Château, Chenonceaux.

respectively, 220 ft. and 226 ft. above the pavement. The flamboyant bays of the nave have some marvellous tracery embodying the fleur-de-lis, both in the glazed triforium and in the clerestory, and the stained glass in the church is very fine, though apparently much restored. How fine it could be is shown by the lower lights of the north transept rose, which as a sumptuous but not garish piece of colour is wellnigh perfect. Though the proportions and organic completeness of the structure are admirable, it is hard for English eyes to be wholly satisfied with the articulation of parts, the clustered piers, their capitals, and the arches they support appearing to lack that relevance characteristic of the best English work. Among minor details is a fine organ of the early Renaissance, occupying the end of the south transept. The lovely tomb of the children of Charles VIII., carved by Jean Juck, is very charming. Adjoining the north transept of the cathedral is the cloister of the Palette with its beautiful little stair turret. The Church of St. Julien, near the Rue Nationale, is a fine edifice of the XIIIth century, with a western tower of the Xth century, which does not rise so high as the ridge of the later church. The plan is remarkable, having a square east end with large eight-light window quite in the English manner, though this is the only English feature, the short choir of three bays, narrow transepts not rising to the ridge, and triple vault shafts which are corbelled above the capitals of circular columns in the choir, and stand upon the capital of a single shaft in the compound piers of the nave, being all thoroughly French. It is only in recent years that this church has been restored to its original purpose; it is not long since it served as stables to a hotel. Of the great XIVth-century Church of St. Martin only two gigantic towers remain, separated by a street which was formed when the rest of the building was demolished in 1802. The Tour Charlemagne adjoined the north transept of the church and the Tour de l'Horloge formed part of the west front. Very few members found time to discover the Churches of St. Saturnin or St. Symphorien, and the former Church of St. François de Paule (now an American Kinetograph theatre) was inaccessible; the latter is a bold but rather coarse example of late Renaissance design. The house of Tristan l'Hermitte, the Hôtels Gouin and de Beaune, and several other notable buildings were not seen, but several members visited the former Hôtel du Consulat (now Palais du Commerce), attributed to J. H. Mansart. This building has an interesting courtyard, which derives a pleasing and individual character from the quadrant curved angles of the side facing the entrance. It is an excellent example of simple and restrained design. The street fronts of the more modern parts of Tours afford an admirable proof of the sufficiency of simple methods of design in the production of satisfactory town architecture. Most of the buildings are of two stories above the ground floor, with dormers above the main cornice. Quite usually the only ornament is in the wrought-iron balconies, most of which are very good, but all the details are well judged, and the total effect very sober and dignified.

Third Day—Wednesday.

The site of the Château de Chenonceaux appears to have been occupied in early times by a Roman villa. Later a feudal castle stood upon it and possessed, as an appanage a watermill. The Marques family, to whom it belonged, sided with the English in the wars of the early XVth century, and as a reward Jean Marques's fortifications were razed by Du Guesclin. His successors, in their efforts to rebuild, got deeply involved in debt, and their property passed to Thomas Bohier, a rich financier, who, with his wife, Catherine Briconnet (daughter of Cardinal Briconnet), at once proceeded to demolish all existing buildings save the round tower, still standing detached beside the main entrance, and to rebuild in the newer fashion. The new work was complete in 1517, except the bridge across the Cher, which was added by De l'Orme for Diane de Poitiers about 1566. The château came into the possession of the mistress of Henry II. after it had become a royal domain under Francis I., consequent on the usual fate of Royal financiers. On Henry's death in 1559 Catherine de Medici ousted Diane. Evelyn visited the castle in 1644, and wrongly ascribed the whole building to Catherine, who only added or completed the stories over De l'Orme's bridge spanning the Cher. This bridge gallery was intended to form the connecting link

between Bohier's house and another block of similar mass proposed to be erected on the eastern bank of the Cher, but, like so many ambitious schemes, it remained incomplete. The main block of the château shows the usual hybrid details of its time, and in so far as its qualities approximate to the mediæval is successful, but rather in spite of than by the aid of its Renaissance detail. The plan is of the simplest, and its charm seems due solely to the manner in which the structure is thrust forward into the very bed of the river, utilising the foundations of the old mill. A curiously vaulted corridor cuts the building in two, two rooms to the right and two to the left filling out the rectangle of the plan, which has the usual circular tourelles at the angles. The left-hand rooms communicate with two octagonal ended projections, one of which contains the chapel, with some good contemporary glass. The long gallery of Philibert de l'Orme, about 200 ft. by 20 ft., is a characteristic example of that master's ingenious detail and technical knowledge of construction. North-west of the château are fine sunk gardens, looking somewhat parched in the severe drought. After spending about three hours at Chenonceaux, the party proceeded by road to Amboise, the long drive through undulating country being very pleasant.

Of the once splendid Castle of Amboise only the outer walls, with two round towers, the small chapel of St. Hubert, and two proportionately insignificant, though still considerable, blocks of buildings are now standing, the greater part having been destroyed shortly after the Revolution. For knowledge of its perfect condition we are compelled to rely on Du Cerceau's drawing, which shows a strange medley of Gothic and Renaissance elements. Charles VIII. planted here, in 1495, the first colony of Italian artists and craftsmen, from whose fusion with the native school, reinforced by the subsequent introduction at Fontainebleau of a fresh hand by Francis I., the characteristic French early Renaissance sprang into being. In the centre of the castle inclosure stood the mediæval collegiate church of Notre Dame, in which Leonardo da Vinci is said to have been buried, but this, in common with other buildings, has vanished. Louis XII. and Francis I. continued the works commenced by Charles, but later kings added little, and in the condition in which it was left by them it remained until the Revolution. Since the destruction which it then underwent the portions remaining have been restored at intervals, the chapel of St. Hubert having been first repaired under Louis Philippe. The buildings have lost interest in the process, but their historic associations (mostly of a sanguinary nature), and one or two beautiful and unspoiled details, still render them attractive. Perhaps the most beautiful thing remaining is the inclined vaulting supporting the sloping way in the Tour des Minimes, which, as Evelyn remarked, "is large enough and sufficiently commodious to receive a coach and land it on the very towers, as they told us had been done." The gallery overlooking the river, from which Francis II. and his bride, Mary Queen of Scots, watched the massacre of some 1,200 Huguenot conspirators in 1560, is shown, but the whole of the river front has been almost rebuilt, and is very different in appearance either from Du Cerceau's drawing or the fine plate in Petit's "Châteaux de la Loire Valley." Beside the castle there are in Amboise a XVIth-century Hôtel de Ville, the two churches of St. Florentin and St. Denis, and an old city gate (La Porte de l'Horloge), but time permitted no more than a hurried inspection in passing.

[To be concluded next week.]

GENERAL NEWS.

Notable Houses in London.

A tablet will be affixed upon the front of No. 12, Seymour-street, Portman-square, W., to commemorate the residence there of Michael Balfe.

Departmental Committee: Royal College of Art.

The Committee, to whose report we adverted in our last week's number (pp. 160-1), consisted of Mr. E. K. Chambers (Chairman), Principal Assistant Secretary, Technological Branch of the Board of Education; Sir George J. Frampton, R.A.; Mr. Halsey Ricardo, F.R.I.B.A.; Sir Charles Holroyd, Director of the National Gallery;

Sir Kenneth S. Anderson; Professor Fredk. Brown; Mr. W. Burton, F.C.S.; Mr. Douglas Cockerell, and Mr. Frank Warner.

King Edward VII. Memorials, Marienbad and Homburg.

The memorial which the British visitors have erected in the British Church at Marienbad consists of a tablet of giallo antico marble bearing a wreath of the rose, thistle, and shamrock, in high relief, over which is a bronze medallion of the late Sovereign sculptured by Mr. Stirling Lee. The design of the memorial is by Professor Lechaby; the carving was executed by Messrs. Farmer & Brindley. The marble tablet and bronze relief portrait that have just been placed in the British Church at Homburg were sculptured by Professor Gerth.

Scheme for East London College and People's Palace, Mile End.

The Charity Commissioners have framed a scheme for the future regulation of the People's Palace, an outcome of the original Beaumont Trust, of 1840. The Commissioners set up a body of fifteen governors for administering the charity and endowments of the East London College; they ordain that the Drapers' Company, who are represented upon the Council, shall pay 7,000l. per annum to the governing body, with the option of commuting that subsidy for a capital sum of 30,000l. to be applied—if University education is then being carried on there—to the future maintenance of the College as the Board of Education may by scheme direct.

Sir Redvers Buller Memorial, Winchester Cathedral.

The memorial erected to Sir Redvers Buller by the King's Royal Rifle Corps, his comrades of both services, and other friends, will be unveiled in the north transept, Winchester Cathedral, on October 28. The recumbent effigy, in bronze, upon a bed of green and black marble, is by Mr. Bertram McKennal, A.R.A.

Whiteley Homes Trust.

The trustees under the will of the late Mr. William Whiteley have decided to purchase from Lord Iveagh about 220 acres of land near Walton and St. George's Hill, Surrey, for the establishment of the Homes, with church, sanatorium, and administrative buildings. The land includes a portion of the Burgh Hill estate, is well wooded, and has a soil of deep sand and gravel.

Dyserth Castle, Flintshire.

In their second report, which has just been issued, the Royal Commissioners upon the ancient and historical monuments and constructions in Wales direct attention to the injury which is being inflicted, through quarrying operations, upon the remains of Dyserth Castle. The ruins stand upon a steep rock, which the owner has leased to the Castle Limestone Quarry Company, of Mostyn. Dyserth Castle, near Rhyl, an ancient British stronghold, was refortified by Henry III. in 1241, and dismantled afterwards by Llewellyn.

Antiquities of Asia Minor.

In view of the present condition of affairs in regard to the antiquities of Asia Minor, referred to in our issue of August 11 (p. 165), we are gratified to receive the information that a memorial to the Ottoman Government will shortly be despatched requesting that steps shall be taken for the protection of these monuments of past ages.

The text of the memorial is as follows:—

"To His Highness the Grand Vizier and Council of Ministers, Sublime Porte Your Highness and Your Excellencies. Without in any way presuming to interfere with the prerogative of Government, we very earnestly beg to appeal to your Highness and the Council of Ministers for the issue, by His Imperial Majesty the Sultan, of an Irade, commanding that measures shall be taken throughout the Ottoman Empire for the protection and preservation of the ancient walls, buildings, temples, fortresses, and other archaeological remains, which are universally recognised as being of the greatest possible value and interest to the artist and architect no less than to the scholar and the historian."

We feel sure that the Government of the Sultan cordially desires to take all possible steps for the adequate safeguarding of these precious monuments of antiquity, and that the Government will not misunderstand our motive in making this appeal. It is because we know the irre-

parable injury done by carelessness to the priceless memorials of the earlier decades of the last eight centuries that we hasten to petition for the effective protection of the works of past ages which, if destroyed, can never be replaced."

Those desiring to support this memorial should send their names to Mr. Arthur Phillips, 9, Northumberland-avenue, Putney, S.W.

Barnard Castle Sewerage.

The Barnard Castle Urban District Council have instructed Mr. Harry W. Taylor, A.M.Inst.C.E. (of Messrs. Taylor & Wallin), of Newcastle-upon-Tyne and Birmingham, to report upon the proposed improvement and extension of the existing sewers in the town, including various road improvements, etc.

BUNGALOW AT RADIPOLE, NEAR WEYMOUTH.

This bungalow, for Mr. Charles Raxworthy, R.N., is to be erected on the top of the hill at Radipole, on the west side of the Dorchester-road, and the site commands one of the finest views in the South of England, looking over Weymouth to Portland and the roadstead. The materials will be tiles for the roof, and red brick and rough-cast for the walls.

The architect is Mr. Vernon Hodge.

COMPETITION NEWS.

Stockport Police Courts.

Professor Reilly, the assessor appointed in the recent limited competition for police-station and courts at Stockport has now made his award, which is as follows:—

Selected design, No. 17.—Messrs. J. Theo. Halliday & Claude Paterson, of Manchester and Stockport.

First Premium (100*l.*), No. 11.—Messrs. Appleyard & Quiggin, of Liverpool.

Second Premium (50*l.*)—Messrs. Stoll & Sons, of Manchester and Stockport.

The following are the terms of the assessor's award:

"I have carefully considered the eighteen designs submitted by selected architects in answer to your invitation to compete for a scheme of police-courts and other police accommodation on a site in Wellington-street.

I have pleasure in congratulating you on the excellent results of your invitation. A large number of very capable designs have been sent in which, together with the complexity of the problem, has made the task of assessing no easy matter. I have, however, no hesitation in placing first the design numbered 17. I am of the opinion that, with due care, this design can be erected for the money available. I award the first premium of 100*l.* to the design numbered 11, and the second premium of 50*l.* to the design numbered 12."

The cost of the proposed buildings is 25,000*l.* The designs have been on view in the town hall during the present week.

Technical Institute, Cardiff.

Questions relating to this competition must be sent to the Director of Education, City Hall, Cardiff, before September 15, and the last day for receiving designs is November 30. Mr. J. S. Gibson, F.R.I.B.A., is the assessor. The cost of the buildings, including heating and ventilation, electric light wiring, gas and water supplies, is not to exceed 36,000*l.* Fittings or equipment and boundary walls or railings are not to be included in the estimates. The author of the design placed first will be employed as architect to carry out the work unless in the opinion of the Committee, after consultation with the assessor, there is some valid objection to his employment. The author of the design placed second will be paid a premium of 125*l.*, and there will be third and fourth premiums of 75*l.* and 50*l.* respectively.

East Sussex Hospital, Hastings.

The assessor in this competition, open to all architects in the United Kingdom, will be Mr. Edwin T. Hall, F.R.I.B.A. The maximum cost of the building is placed at 35,000*l.*, and designs must be sent in by November 30. Any questions should be submitted by September 15. The author of the design placed first will receive 125*l.*, and sums of 75*l.* and 50*l.* will be awarded to the architects of the two next best schemes.

Designs for Government Palace and for Town Improvements, Uruguay.

With reference to the notice on pp. 612-3 of the *Board of Trade Journal* of June 22 relative to a scheme for town improvements and a new Government palace at Montevideo, H.M. Minister at that place now

reports that competitive designs are invited by the "Ministerio de Obras Públicas," Montevideo, up to January 30 and 29, 1912, respectively, for the Government Palace and town improvements. Prizes of 10,000 and 4,000 pesos (about 2,125*l.* and 850*l.*) are offered for the best plans for the Government Palace and prizes of 5,000, 3,000, and 2,000 pesos (about 1,060*l.*, 640*l.*, and 425*l.*) in respect of the town improvement plans. A statement of the conditions of the competition (in Spanish) may be seen by British firms at the Commercial Intelligence Branch of the Board of Trade, 75, Basinghall-street, London, E.C.

BOOKS.

The Corrosion of Iron and Steel. By J. NEWTON FRENCH, Ph.D., D.Sc., F.C.S. (London: Longmans, Green, & Co. 1911. Pp. 300. 6s. net.)

WITHIN recent years much attention has been directed to the effect of the numerous factors connected with the corrosion of iron and steel, and since wrought-iron has been almost entirely superseded by mild steel, the smaller resistance of that material to corrosive influences has been made the subject of careful investigation. The object of the author in writing this work was the collection and presentation in convenient form of all reliable material bearing on the corrosion of iron and steel in order that makers and users alike may have a record of what is already known of the subject, and the directions in which further research is desirable. The task of collecting data scattered through some hundreds of papers and articles has obviously involved much labour, and the result is one which we are sure will be widely appreciated.

Of the five theories of corrosion advanced from time to time, only two, the acid and electrolytic theories, are considered, as the others have already been proved inadequate. The author shows that the most recent experimental results are entirely in favour of the acid theory, and while rejecting the electrolytic theory he points out that the electrolytic theory of ionisation—or the ionic theory as he prefers to call it—is not to be excluded. The effects of various substances and agencies in promoting and retarding corrosion are fully discussed, and the work concludes with a chapter on the relative rate of corrosion of iron and steel. Perhaps some of our



readers may be interested to know that the author is contemplating the issue of a companion volume dealing with the protection of the same metals, this being a subject of great practical interest to architects and engineers alike. The present volume, however, is one of which we cannot speak too highly.

Calculation of Columns. By THEODORE NIELSEN. (London: E. & F. N. Spon, Ltd. 1911. Pp. 36.)

This treatise appears to have been written chiefly with the object of expounding the results of the investigations made by Professor Ostenfeld, of Copenhagen, and to show how these may be applied to the calculation of steel and other columns. As our readers are aware, there are already numerous column theories and formulae, most architects and engineers having their own favourite variety in general use. The methods given in this book are certainly simple; they can be readily used for columns under various working conditions, and, so far as we have examined them, they appear to be safe and reliable. Some interesting diagrams at the end show the relative agreement of the author's and other formulae with groups of test results, the last of the series furnishing a comparison of generally-used formulae. While of decided interest as a study of column design, the practical convenience of the book is somewhat diminished by the adoption of metric units throughout.

A Glossary of Building Construction. By CHAS. H. GREGORY. (London: J. Haslam & Co. 3s. 6d. net. Pp. 136; 22 illustrations.)

This is a short glossary of terms used in building work arranged on a somewhat novel principle, the trades being considered independently, and the more important terms arranged alphabetically under each heading and briefly explained.

The author describes the book as a short introduction to the science of building construction, but it will probably be found more useful as a commentary on the existing textbooks than as a self-contained primer of construction. The information given appears to have been carefully considered, and is set out in a clear and straightforward way, many of the definitions being explained by drawings, which, by the way, might have been greatly reduced in size to permit the inclusion of a larger number of terms. In the sections on calculations and the design of small buildings we are inclined to think that the author has trespassed beyond his sphere; these are subjects of a much more advanced character than the rest of the book, while the information given on design is too meagre to be of any really practical value.

Building Superintendence. By EDWARD NICHOLS. (Chicago: American School of Correspondence. London Agents: Crosby Lockwood & Son. 6s. net. Pp. 200; 260 illustrations.)

The building methods of the United States differ in so many respects from our own that we question whether this new book on supervision, although containing many useful hints, will be found of any great value to the British architect or clerk of works, and some of the points made, might prove misleading to students. Nevertheless, the book is vigorous in tone, and suggests a degree of method in supervision which would prevent many oversights and delays.

Modern Brickmaking. By ALFRED B. SEARLE. (London: Scott, Greenwood, & Son. 12s. 6d. net. Pp. 430; 260 illustrations.)

It frequently happens that able writers on technical subjects cannot speak with the authority of long practical experience, while those who have the practical knowledge have not the power of expressing it in books. We are grateful to Mr. Searle for giving us the benefit of his wide experience in this brick industry in a well-written and interesting volume. *Modern Brickmaking* will be of great service to those directly interested in the trade, and the engineer and architect will gain much by a perusal of its pages. Although no one book on so large a subject could be called exhaustive, the author has contrived to give a great deal of valuable information on each branch of the industry;

the descriptions of the many types of machines used in each process, accompanied by hints as to their relative merits for differing conditions, will save manufacturers from many a mistake in laying down new plants, and the chapters on kilns and firing will prove not less valuable. The book is admirably illustrated by drawings and photographs.

Sewerage Systems: Their Design and Construction. By HENRY S. WATSON. (London: Crosby Lockwood & Son. 10s. 6d. net. Pp. 300; 148 illustrations and diagrams.)

The simultaneous publication of two works on the town sewerage problem which do not materially overlap in subject matter is an indication of the great amount of attention which is being paid to this vitally-important question. Mr. Kershaw's book noticed above deals principally with the disposal of the sewage after it has reached the works; *Sewerage Systems* reviews the methods of conveyance, and, without presuming to be a complete treatise, is fairly comprehensive in its sphere, intelligible to lay readers or students, and well arranged. The subject is treated in five sections—the general design, the preparation of a scheme, the process of construction, maintenance, and legal considerations, with an outline specification, draft regulations, and various forms of notice in appendix form.

Modern Methods of Sewage Purification. By G. BERRILL KERSHAW. (London: Charles Griffin & Co. Ltd. 21s. net. Pp. 356; 36 plates, 12 text illustrations.)

This is a welcome addition to the already large library of books dealing with a problem which is every year demanding more attention and presenting greater difficulties. Mr. Kershaw brings to the work an exceptionally wide experience, and has consolidated a large stock of information in a very readable form. There are chapters on all the more important aspects of a very wide subject, and the various systems of treatment and their adaptability to particular conditions are discussed in considerable detail. The disposal of sludge, the land treatment of sewage, the construction of contact beds, the many considerations affecting the success of percolating filters, and so on, are all dealt with from an eminently practical standpoint, and to all who are interested in the management of sewage works the chapters on these and other subjects should be of great interest and assistance.

How to Manage a Suction Gas Producer. By W. A. FOCKEY. (London: Percival Marshall & Co. Pp. 90. 1s. net.)

WRITTEN as a practical handbook for engineers and attendants, this little book gives very explicit directions for the management of suction gas-producing plant. Every part of the apparatus is described and illustrated by sectional drawings. The matter is arranged under convenient headings and sub-headings to facilitate reference, and we have confidence in recommending the guide to those who have the care of suction gas plant, or who wish to make themselves familiar with its construction and arrangement.

A Treatise upon the Law of Light, including an Exposition of the Law Relating to the Nature, Acquisition, Preservation, and Extinction of the Easement or Right to Light and the Remedies Afforded for the Protection of Window Lights. By R. G. NICHOLSON COOMBE, M.A., LL.M., Barrister-at-Law. (London: Butterworth & Co. 1911.)

The author of this new work on the law of light in his Preface almost apologises for dealing with a subject relating to an easement, seeing the excellence of the existing text-books dealing with easements in general, but he explains that the law of light has always stood, as it were, apart, and that the application of the Prescription Act, 1832, has added to its isolation. As far as we can see, no apology is required for the text-book that he has produced on this branch of the law, which seems written with care and very lucidly expressed. As the author observes, the effects of the decision of the House of Lords in *Colls v. Home and Colonial Stores*, although that case was decided some seven years ago, are so far-reaching that it is possible that even yet they are not fully

appreciated, and for this reason, if for no other, it appears that the opportunity is very favourable for the production of an exhaustive text-book like that now before us.

The author throughout his treatise has adopted two expressions which we agree in thinking both accurate and convenient. The accessory right to light he terms "light easement," and an obstruction which amounts to an actionable interference with the light he terms "light nuisance," the latter term no doubt being suggested by the findings in *Colls's* case.

The volume is presented to the reader in a very attractive form; the type is clear and so varied as to readily mark the sub-division of the paragraphs and to attract the attention, and there are side-notes and footnotes, the titles of the cases referred to in the text being printed in the latter. There are tables of statutes and cases, the table of cases containing also references to the reports in which the cases are to be found. There is also a copious index, but in one instance we have found it defective, as it is difficult to find the reference to an extraordinary or special user of light, although this subject is dealt with fully in the text in Chapter II., sect. 4. The whole work appears to us to be an unusually clear, interesting, and exhaustive exposition of a very complicated branch of the law.

Public Health Law: Being a Manual for Municipal and County Engineers and Surveyors, Town Clerks, Clerks to District Councils, and other Officers and Members of Local Authorities. By SIDNEY G. TURNER, Barrister-at-Law, Associate Member of the Institution of Civil Engineers, Graduate of the Institution of Municipal and County Engineers, etc. (London: St. Bride's Press, Ltd. 1911. Pp. 216. 10s. 6d. net.)

ON his title page the author has particularised the class of readers which he desires to reach, but as the title of the book itself is somewhat general we may say that it is divided into twenty chapters, each dealing with a special subject, such as drains and sewers, sewers and sewage disposal, rivers' pollution, nuisances, new streets, housing, etc. There is also a chapter on highways, although the author points out that this, amongst one or two other subjects, is not strictly included under public health. The volume does not deal with the law peculiar to the Metropolis, except in so far as cases decided under Metropolitan Acts have any bearing on the subjects dealt with. There is a table of statutes, a table of cases, with full references to the reports, and an index. The text is clearly expressed and presented in an attractive form, and, so far as we have been able to see, the law is stated with accuracy. In so small a volume it is a pity that the addenda and corrigenda should have to run to nearly two pages, and in this table correction is made more irksome by a departure from the numerical order of the reference to the pages.

The Holidays: Where to Stay and What to See. (London: Walter Hill, Southampton-row, W.C. Price 1s.)

THIS is the sixteenth edition of a work which consists of a collection of lists of seaside, farmhouse, and country lodgings, hotels, and boarding-houses, etc., in the districts served by the Midland, London and North-Western, Great Northern, Great Eastern, Great Western, and Great Central Railway Companies, together with information for tourists, and holiday-makers. It is a useful work for all who may be considering the question of where to stay for the holidays, and it contains, besides much information of use to tourists and others, some good photographic illustrations and maps.

The London Citizen's Year-Book, 1911-12. (London: G. Allen & Co., Ltd. 6d. and 1s. net. Crown 6v.)

THIS is a handy and useful little work, containing particulars of London's local authorities, expenditure, and other information on London questions. The aim of the book is to describe the work of London government, its machinery, cost and problems of local administration and taxation, and all references to the pages of the year-book which we have made justify us in stating that the aim has been amply fulfilled.

EDITORIAL SUMMARY.

"Concerning Bruges" is the title of our leading article, which is illustrated.

Notes (p. 209) include: "Strikes and Electric Lighting"; "A Lesson of the Strike"; "New Method of 'Building'"; "Hygiene of the Eye."

The third illustrated article of our series on "The Story of the Bridge" is given on p. 210. Other illustrations in connexion with the article are given in one of our plates.

The annual excursion of the Architectural Association has been held this year in France, in the district of old Touraine. An illustrated description of the excursion is commenced this week, p. 212.

Book notices (p. 216) include: "Sewerage Systems"; "Sewage Purification"; "Brick-making"; "Building Construction"; "Building Superintendence"; "Corrosion of Iron and Steel"; "Calculation of Columns"; "The Law of Light"; "Public Health Law," etc.

Some notices of the August Magazines appear on this page.

The Monthly Review of Engineering (p. 219) contains: "The Pennsylvania Railway Station" (with illustrations); "Buildings for Explosives Works"; "Some Studies of Welds" (illustrated); and Notes.

The Building Trade Section (p. 224) includes: "Stucco"; "Legal Questions about Extras"; "Government Contracts"; "Projected New Buildings in the Provinces"; "General Building News," etc.

"Quantity Surveyors in South Africa" is the title of an article on p. 227.

Some notes on a new metal filament lamp are given on p. 229.

In Law Reports (p. 232) the case of "Contractors' Action against Building Owner" is continued.

MAGAZINES AND REVIEWS.

The *Art Journal*, with number of pages increased and with price reduced to 1s., seems to be giving more attention than before to non-pictorial subjects, a policy which should extend its influence. Part 2 of an article on Holkham, in a series on "Interiors of English Mansions," includes some well-selected details and a fine view of the Great Hall, remarkable for its lofty magnificence and its fluted columns enriched with variegated alabaster. William Kent's original design for the front of Holkham is an illustration of great interest. The statuary in this famous mansion is described; it forms an integral part of the scheme for decoration, the sculpture gallery particularly being planned for the reception of the works collected by Thomas Coke, first Earl of Leicester. The "Kent" furniture at Devonshire House is the subject of another article, and altogether this number is a tribute to the versatility of the architect, painter, decorator, garden designer, and general artistic referee who flourished under the wing of Lord Burlington. That Kent was too miscellaneous to be continually inspired must be the thought of all those who study his work. Of his talent, however, there can be no doubt. The lacquer screen, reproduced in colours, is a gorgeous piece of Oriental design, and among other illustrations may be mentioned pictures by Sir James Guthrie, P.R.S.A. An article by Sir Claude Phillips on "Rubens or Van Dyck?" refers to the stately "Portrait of a Genoa Nobleman" in the Dulwich Gallery.

The *Burlington Magazine*, in its editorial on the Edward VII. Memorial, criticises the decision of the Committee to place the monument at the Piccadilly end of the Broad Walk, and reminds us that "the only excuse for destroying the chief feature of the Green Park was that by so doing a vista was obtained of the Victoria Memorial from

Piccadilly. The proposal to place the King Edward Memorial in this walk destroys the vista and the excuse for the walk itself." The method of selecting the sculptor is very severely condemned. "We have already expressed our opinion that the arbitrary selection of an artist by a committee of gentlemen, who, however distinguished in other capacities, have no special qualifications for such a duty, will be an injurious blow to the interest and welfare of British art. We maintain that, in spite of the Royal Academy and other stumbling-blocks to progress, there exists in this country a sufficient number of artists who are fitted and entitled to show their mettle, and compete in the case of any national commission for a work of art. We have also stated that the choice of Mr. Bertram Mackennal, A.R.A., might prove justifiable, even in a national competition. We are compelled to modify this statement in view of the fact that in those commissions which have already been showered upon him by the Government—the new coinage, the Coronation medals, and the new postage-stamps—Mr. Mackennal has not shown any qualities as an artist which would justify him for exclusive selection as an exponent of XXth-century British art." An illustrated article on "Hispano-Arabic Art" at Medina Az-zahra refers to recent excavations. Comparisons are made between various forms of ornamentation, and the specimens are interesting in relation to early Mohammedan art.

The *Studio* gives first place in its pages to a well-illustrated article on the recent work of Mr. J. W. Waterhouse, R.A. The illustrations of Old Danish carved furniture of the XVIIth century and later periods show the earlier work to be akin to our Jacobean, while in later examples the more vernacular style reasserts itself. Some notes on the water-garden will interest the amateur, and the work, Jaromir Stretti-Zamponi, of which illustrations are given, displays a strong sympathy with the architectural subjects selected, mainly from the picturesque city of Prague. The remarkable ability displayed in the work of Mr. E. L. Laurensen is also worthy of careful attention. Altogether this issue reaches a very high standard.

The *Connoisseur* contains a very interesting article, with numerous illustrations, on German faience stoves, some of those given being of striking merit as architectural compositions. We regret that we cannot congratulate this magazine on the numerous coloured plates it publishes, one in particular, black medallions on a red background, being particularly glaring and unsatisfactory.

Books on Gothic and Renaissance Architecture published during the last few years are dealt with in the *Quarterly Review*. Mr. W. G. Waters, in his article, does not note any special facts to be disproved, though he thinks Professor Blomfield is mistaken in his view that when Wren went to Paris in 1653 the Louvre was being built by Bernini—"the plan accepted was that of Charles Perrault." The concluding paragraph is pessimistic:—

"In old times, when the triumphs of the builders' art were raised, men desired beautiful houses for habitation and stately banes for prayer; but in this age of rush and luxury they yearn chiefly after hotels and restaurants of Sardanapalian splendour, and motors, still more elaborate, to whirl them from one scene of revelry to another. It is upon work of this sort that the ingenuity of the constructor of to-day is chiefly engaged, and if the results of his labour fail to rival those of the master builders of the XIVth century in artistic merit, it will not be because he has spent less money upon them."

The *Century* includes part of an illustrated article on "Motoring in Algeria and Tunis." Biskra impressed the author, and so did the ruins of Timgad, a city which, in his mind, "stands to-day as the most interesting, the most touching and fascinating place in North Africa. Founded in the year 100 in the reign of the Emperor Trajan, Timgad lies now a ruined dream city. The theatre is set against a small hill, and over 3,000 people could be seated at the play. At the extreme end of two intersecting avenues stands Trajan's Arch."

In the *Revue Générale*, M. Arnold Goffin deals with the influences now governing the direction of decorative art. M. Goffin's wide knowledge of the history of decorative

painting renders his views on the more modern developments worthy of especial attention, and he deals with his subject in a broad and sympathetic spirit.

ILLUSTRATIONS.

Pennsylvania Railway Station, New York.

THESE illustrations of an important work by Messrs. McKim, Newell, & White are given in connexion with the first article in our Monthly Engineering Review this week (see next page).

"The Story of the Bridge."

THESE illustrations of Medieval bridges are given in connexion with our third article on "The Story of the Bridge," p. 212.

FIFTY YEARS AGO.

From the *Builder* of August 24, 1861.

The First Trades Union Directory.

CERTAIN short documents, bearing upon the present disputes between the building operatives and their employers, have recently appeared in some of the journals as emanating from the Trades Council. And now, what is this London Trades Council? It is a body that had its germination from those meetings of the various trades delegates of the metropolis which took place at Shaftesbury Hall during the greater part of the builders' strike of 1859. The parties who had there for so long assembled merged themselves, at the time when the strife was ended, into a provisional council or committee, on whom the joint duty was to devolve of furnishing a code of rules whereby any such council was to be guided in future; and also to prepare and have printed as correct and full a list of such trades as were united among themselves—their places of meeting and the names of their secretaries—as was possible; and which at length has been accomplished under the title of "The United Kingdom's First Annual Trades Union Directory." Its publisher is Mr. Thomas Jones, of Great Chapel-street, Soho; and whose name also appears among the seven attached to an address on the 104th page, these parties making their statement at this concluding part of the work, in lieu of the usual preface matter to be found at the commencement of books. It is the "first" thing of the sort which has been consigned to the long-living operations of the printer's skill. From the index we gather that there are 405 cities and towns in which are to be found those now widely-spread and thickly-clustered confederacies of workmen with workmen, of which we have lately heard so much and are likely to hear more.

CORRESPONDENCE.

Parks and Public Conveniences.

SIR,—When a town park is made (as that proposed at Shadwell, for instance) it usually happens that some small part of it is reserved for a building for tools, stables, or public sanitary convenience. As every square foot withdrawn from verdure is to be deprecated, I suggest that the constructive people among your readers could easily design and construct an erection of ordinary brick arches (or iron and cement perhaps) which would supply the needed business space, covered, lighted, and ventilated, but of such a nature that outwardly it might form a picturesque little hill or "cockery," covered with shrubs, evergreens, and creepers. Inwardly useful and outwardly a beautiful feature of the park. It might even have an elevated walk or terrace, where seats give a view over the park. Where the land is flat this feature is specially desirable.

When I see the many clever things done by builders a matter of this kind does not seem to offer any difficulty. But I have never seen it tried. Why not? Many public conveniences might be better thus, less below ground and more attractive above. Surely this method is not more costly?

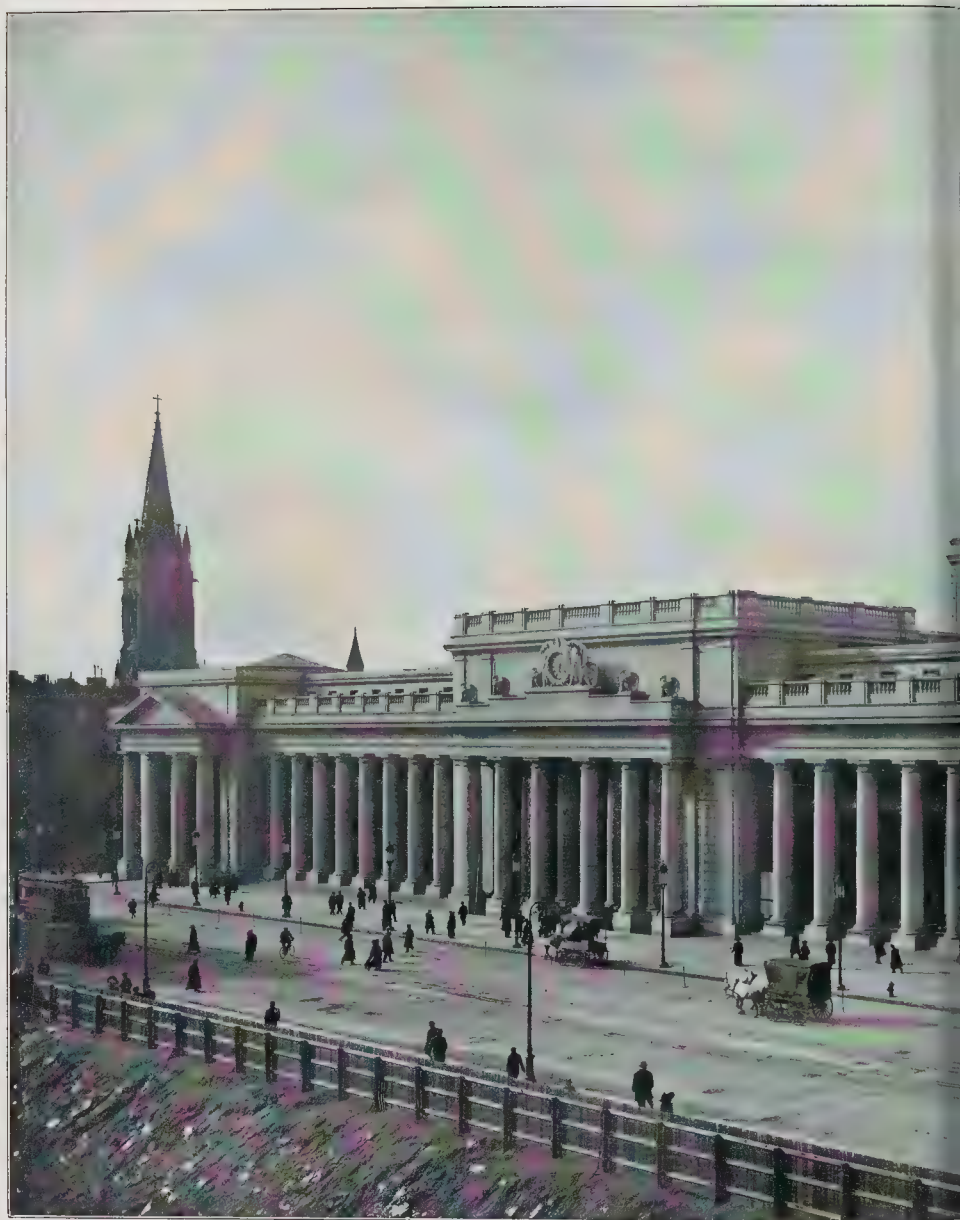
AN ORDINARY CITIZEN.

THE BUILDER, AUGUST 25, 1911.



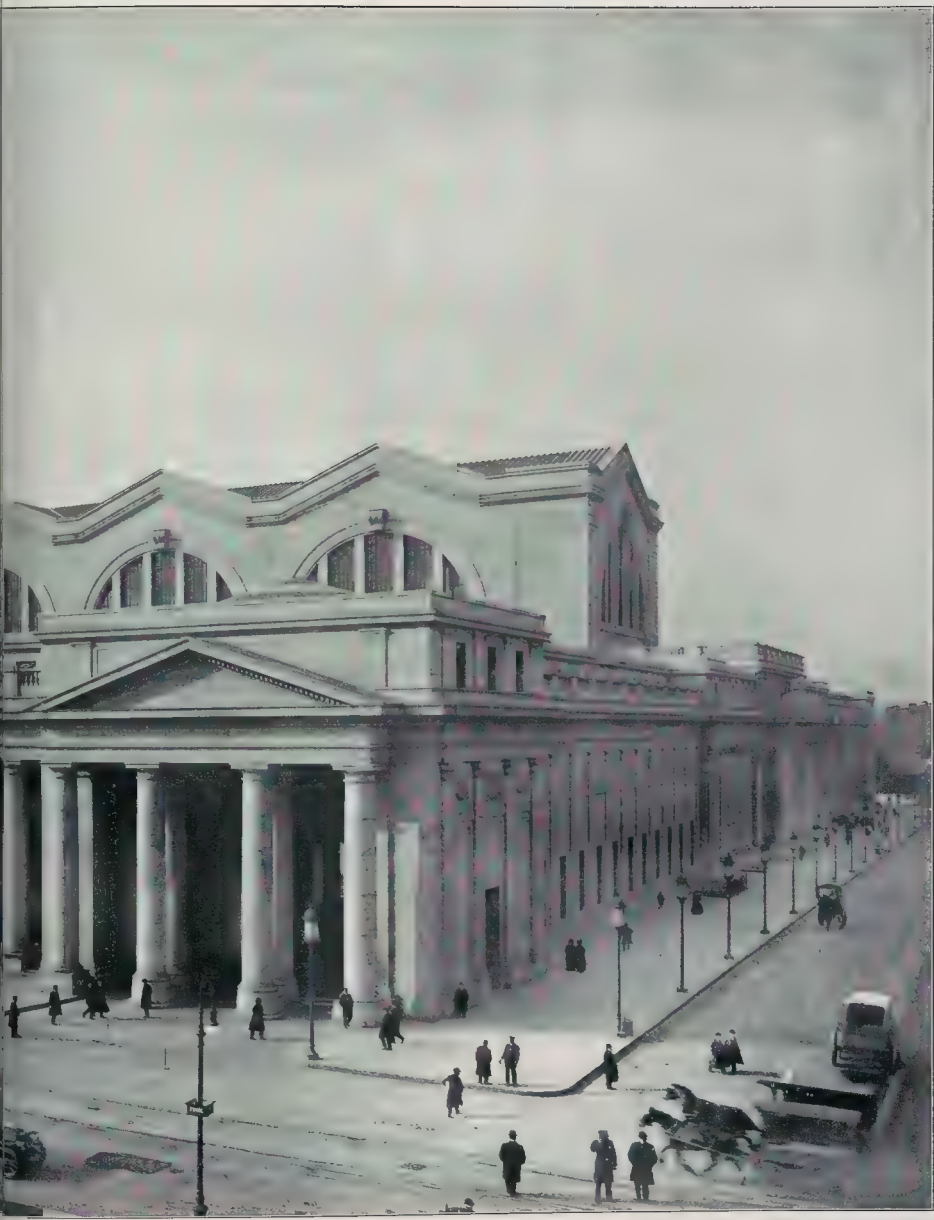
Photo by Lacoste, Madrid.

PUENTE DE SAN JUAN DE LAS ABADESAS, GERONA.



PENNSYLVANIA RAILWAY STATION, NEW YORK

1911.



Sprague & Co., Ltd., Printers, 4 & 5 West Harding St., E.C.

SSRS. McKIM, MEAD & WHITE, ARCHITECTS, NEW YORK.

THE BUILDER, AUGUST 25, 1911.





PENNSYLVANIA RAILWAY STATION, NEW YORK.—MESSRS. McKIM, MEAD & WHITE, ARCHITECTS, NEW YORK
Sprague & Co., Ltd., Printers, 4 & 6 West Harding St., B.C.



Photo by Neudein Frères, Paris.

PONT DES CONSULS OVER THE TARN, MONTAUBAN (XIVth CENTURY).

"THE STORY OF THE BRIDGE."— III.

MONTHLY REVIEW · of · ENGINEERING.



Pennsylvania Railway Station, New York: Main Waiting-Room.

Messrs. McKim, Mead, & White, Architects, New York.

THE PENNSYLVANIA RAILWAY STATION, NEW YORK.

FOR many years past the only railway system directly connected with New York City has been the New York Central Railroad and allied lines.

The Pennsylvania Railroad Company have lately completed a comprehensive project, including the construction of tunnels under the Hudson River and the city of New York, a gigantic underground station in the middle of the city, and tunnels under the East River. A view of the station building shown in one of our plates.

By the execution of these and auxiliary works a direct route has been opened up between the New England States and the West by way of New York City, the new railway station being not only an immense convenience, but also a notable architectural addition to the mercantile capital of the United States.

The most impressive feature of the scheme

is the station in New York, situated between Thirty-First and Thirty-Third streets, and extending lengthwise from Seventh to Tenth avenue, as shown in Fig. 2; the railway lines, about 40 ft. below street level, comprise twenty-one tracks serving eleven platforms. The area devoted to traffic requirements covers some 28 acres, and includes storage space for nearly 400 passenger carriages.

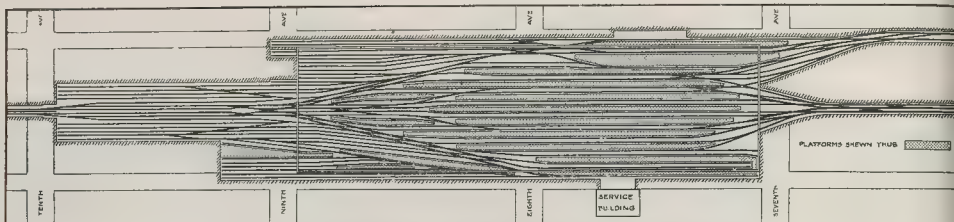
The site of the works was formerly occupied by five large blocks of buildings, its clearance involving the demolition of 500 houses. The work of excavation to the average depth of 50 ft. below street level involved the blasting of about 3,000,000 cubic yds. of rock. Afterwards it was necessary to build retaining walls to the collective length of 7,800 ft., to divert sewers, gas and water mains, and other conduits, and to execute numerous incidental but important works

inseparable from the excavation of so huge a pit in the heart of a great city. As the level of the rails is from 7 ft. to 10 ft. below high-water mark in New York Harbour an elaborate drainage system had to be established over the entire area of the station.

Reference to the plan (see next page) will show that two important streets—Eighth and Ninth avenues—pass over the underground station, these and parts of other streets and avenues being carried on bridges, the total length of which is 4,400 ft., and the corresponding street area 8 acres.

In order to ensure suitable architectural treatment Mr. William R. Mead, of the firm of Messrs. McKim, Mead, & White, was associated with the Board of Engineers appointed by the railway company.

Considered from the structural standpoint, the station building above street level is virtually a monumental bridge over the



Pennsylvania Railway Station, New York: Block Plan of Sub-station.

underground lines with entrances from the streets on all four sides. In the latter respect the building is far more accessible than any structure of the same class in the world.

In dealing with the exterior, the architects aimed at the realisation of two main features—to impart to the building the character of a monumental entrance and gateway to a great metropolis and to make the exterior suggestive of the purpose which the building was intended to serve.

The reader may judge for himself the happy way in which these ideas have been embodied by reference to the exterior view (see plate), which was taken near the intersection of Seventh-avenue and Thirty-Third-street.

The main dimensions of the building are—Length, 784 ft.; width, 430 ft.; average height above street level, 69 ft.; maximum height above street level, 153 ft.

The structural design is that of a steel skeleton building with masonry curtain walls supported by a series of 650 columns extending down to solid rock, the maximum load on any one column being 1,658 tons. The façades, however, are fine examples of classic architecture, bringing to mind the temples of ancient Rome, and yet conveying a distinct impression of the modern purpose served by the building. The exterior is finished in pink Milford granite, an effective structural stone with soft shades which are particularly pleasing to the eye.

An entrance in the middle of the Seventh-avenue façade leads to the main waiting-room by way of an arcade 225 ft. long by 45 ft. wide, with shops on either side and refreshment-rooms near the end.

The main waiting-room, situated on the first floor below street level, is a hall of magnificent dimension, as may be gathered from the photographic view on page 219. The hall measures 227 ft. long by 103 ft. wide by 150 ft. high above floor level. Its proportions may be realised from the statement that the New York City Hall could be placed between its walls, leaving 10 ft. clear space above the flagstaff of that building. The design and general treatment of the interior was suggested by the great halls and basilicas of Rome, where some of the finest examples of large covered areas are to be found. In this hall are situated the ticket offices, parcels-rooms, telegraph and telephone offices, all conveniently arranged to facilitate operations and to save the time of passengers.

At first it was intended to use Italian marble for the columns and wall surfaces, but, owing to the heavy cost of imported stone, a variety of artificial stone, known as "Travertine," was finally adopted for the bulk of the work, the remainder consisting of natural marble. Travertine is composed of white Portland cement with crushed feldspar as aggregate, and is cast in plaster moulds.

It is stated that the cost of the waiting hall was about 250,000*l.*, including all details of the decoration. Adjoining the main hall are waiting-rooms, 100 ft. long by 58 ft. wide for men and women, and at the same floor level is the luggage-room, occupying an area corresponding to that covered by the arcade and refreshment-rooms above. Luggage is received and despatched through a special subway and

conveyed to and from the underground station by motor trucks and lifts. Spacious carriage courts and cab-stands are provided on this floor of the building.

Another large hall, described as the "Concourse," 340 ft. long by 210 ft. wide, is connected with the main waiting-hall by a spacious passage, and provides space for the circulation of passengers bound for the departure platforms. In addition to the entrance mentioned the concourse is accessible from the streets by stairways. This hall is covered by arched roofs of steel and glass, as illustrated in our plate, and from it lead numerous stairways to the platforms. The design of the roof is somewhat similar to that of the new railway-stations at Frankfurt and Dresden.

On the floor below is a second concourse intended for passengers arriving by trains, and connected with the platforms by two stairways and one lift for each platform, while ample provision is made for egress to the streets by means of stairways and sloping passages.

Independent accommodation is provided for the traffic of the Long Island Railroad, the side of the station along Thirty-Third-street being devoted to this purpose, with ample spaces for the circulation of passengers, and separate entrances and exits from and to the street.

The steel framework of the building represents the total weight of 27,000 tons, the quantity of granite used for structural and ornamental purposes is 550,000 cubic ft., in addition to nearly 1,000,000 cubic ft. of concrete and 15 million bricks.

In an article such as the present it would be impossible to enter into structural details of this great building, which, in addition to its admirable design from the standpoint of public convenience and efficient railway management, is an architectural monument of which New York may well be proud. We are indebted to Messrs. McKim, Mead, & White for the photographs reproduced as illustrations.

BUILDINGS FOR EXPLOSIVES WORKS.

THE arrangement of the manufacture and storage buildings in works for explosives calls for the services of those who have had special experience in the preventing of accidents therein, and who also are aware of the nature

of the various present-day explosive substances. The late Oscar Guttmann, F.I.C., possessed such qualifications, and one of the last things he did, before his lamented death in August last, was to place on record the results of many years' observation of the requirements in question. Resident for many years in England, his experience was very extensive, at home and on the Continent, and it was whilst he was acting as a juror at the Brussels Exhibition that he met with sudden death in a motor-car collision.

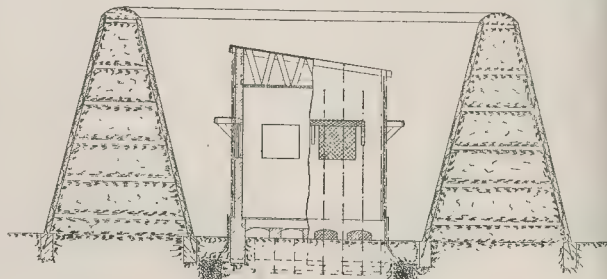
His views were primarily embodied in a paper read before the Society of Chemical Industry in July, 1908, and in a patent, No. 4,094, of February 19, 1909. The gist of his proposals was that the roof of the building was to be constructed with sheets or plates of expanded metal, coiled wirework, etc., arranged above or below it, or both, such covering being capable of resisting the impact of falling bodies or projectiles. The metallic covering to be connected with the earth at intervals so as to protect the building against lightning. As to the mode of transmission of the effect of the explosion, by the air and by the earth, and other important considerations discussed by Mr. Guttmann and other experts regarding explosives, this paper may be consulted with advantage.

The results of his most recent experience were set forth in the *Journal of the Society of Chemical Industry* for August 15, 1910, concluding with the following noteworthy announcement. "In order to establish beyond question my priority as regards this idea, I considered it desirable to take out a patent for it in this country. As already stated in 1908, I deem it, however, to be my duty not only to publish proposals of this kind, which are of the greatest importance for the safety of explosive factories, but also to permit everybody to make use of them, free of all licence fees, which permission I formally give herewith."

In the history of the construction of buildings for the manufacture of explosives, two distinct periods are known. The first, during which gunpowder was made in dwelling-houses or outhouses, and the other, during which it was considered advisable to house explosive workshops in very light wooden structures, so that no heavy blocks of masonry could fly about and endanger houses and persons in the vicinity.

This latter principle is expressed in the Explosives Act of 1875, which was due to the efforts of the late Sir Vivian Majendie, and it was thereupon adopted by many other countries.

To attain this object, in France buildings are made with strong walls on three sides,



Section of Protected Building.

tilt the fourth consists of glass. In Great Britain and Austria and Hungary wooden buildings, originally with light, felt-covered roofs, and later on, chiefly in the case of gazettes, with corrugated iron sides and roofs, were preferred. In Germany the buildings were still of light wooden construction, but the roof is sometimes put on quite loosely, being held by two or four wooden pins only, that in case of an explosion the roof is simply lifted off, and the sides are supposed to remain intact, which never happened, except in black powder houses containing very small charges. In this country mounds need only exist on those sides which are within a specified distance from a building not so protected, and then they need only reach to the eaves of the building. In most other countries, the mounds must be at least 1 yd. higher than the highest point of the roof, and must surround the building on all sides, even the eaves to the building being formed by means of a tunnel.

It is the rule to maintain a definite distance between each building in order to minimise damage. This distance is regulated by the quantity of explosive contained in the building, but for practical purposes varies very little, 50 yds. to 52 yds. being the average for mounded buildings of high explosive works (except cartridge huts).

Mr. O. Guttman's method is to construct the buildings of reinforced concrete made with aggregate of fine river gravel. In order to prevent the roof being penetrated by flying debris, it consists of two layers of armoured concrete with a layer of sand between them. Similarly, armoured concrete is used for the surrounding mounds and for the passages leading through them to the buildings.

In a German powder-factory a trial building in accordance with these particulars was constructed, in order to prevent the transmission of fire from one portion of a packing-room to another, and the experiments made this building were a complete success. This proved that for buildings exposed merely to the risks the above outline of construction was sufficient; but, where there is risk of explosion, Mr. Guttman finally adopted a modified form of roof.

The considerations leading to this modification were that the cohesion of armoured concrete might be so great that pieces of appreciable weight might be thrown about, and that the possibility of sand becoming admixed with explosive material in the event of an explosion is not desirable. Accordingly, in planning 1908 and 1909 new buildings for a German factory, Mr. Guttman discussed the subject with Privy Councillor Mente, of the Prussian Ministry of Commerce.

The walls only of the buildings were to be ordinary concrete with river gravel aggregate, this being sufficient to protect them from flying pieces of debris and from the shock due to an explosion some distance away. The roof, on the other hand, in place of armoured concrete, was to be made of light, strong, wooden principals covered over with expanded metal, wire netting, or similar

material. This network was to be provided both on the outer and inner sides of the main rafters, and since protection against lightning was thereby afforded at the same time, the network was connected at intervals to a metal conductor going all round the building and earthed in the usual way.

To test its efficacy as a protection against flying debris, two wooden rafters were covered over on both sides with expanded metal. The meshes were 20 mm. = 0.8 in by 50 mm. = 2 in., while the section of the metal was 3 mm. wide by 5 mm. high. A block of lead weighing 80 lb. was then dropped on to the centre of the expanded metal covering from a height of nearly 70 ft.

The rafters fully withstood the blow and only one mesh of the expanded metal was broken, the effect of the blow having been equally distributed over the whole surface, which had acted like a spring mattress.

A roof of this kind requires to be rendered rainproof by means of a galvanised or tarred sheet-iron cover and electrical connexion made between all metal parts and the wire netting. In the case of buildings where there are no heavy pieces of machinery or long lengths of shafting, the outer covering of netting was deemed sufficient as a security against lightning. The cost of a double layer is, however, of small moment if its provision offers security against inductive effects.

A building thus results which partakes of the nature of a Faraday cage, and which, while very cheap in the first cost, is proof both against lightning and against flying debris and at the same time machinery, shafting, etc., may be firmly fixed therein.

The floor of such buildings has been built by Mr. Guttman over a pit in the ground, and Mr. S. Soddy has observed that earth shocks may be minimised by a similar method.

In the accompanying illustration, which represents Mr. Guttman's design, the floor is carried above the ground a sufficient height to provide openings in the wall bases, thereby allowing air to pass freely.

In this way the layer of air no longer acts to transmit earth tremors to the building (generated by an explosion in the vicinity), but allows the concussion to be dissipated to the outer air. These openings may be spaced so as to facilitate the laying of pipes or other ducts underneath, rather than through the building. They should be provided with detachable wire screens to keep out rubbish, and to give easy access for cleaning, etc.

The roof principals are simply made of boarding, and not rigidly held as to outward movement. The earthen plates and their electrical connexions to the roof network are shown, and also the metallic reinforcement in the surrounding concrete mounds.

SOME STUDIES OF WELDS.

UNDER this title, Messrs. E. F. Law, W. H. Merrett, and W. Pollard Digby read an interesting paper to the Iron and Steel Institute. The meaning of the term weld adopted by the authors is one covering an

actual fusion together of similar or allied metals in addition to mere intimacy of contact. They urge that without such fusion there can be no weld in the real sense, and also insist that in addition to the customary tensile tests of welded joints other comparisons are necessary, such as the nature of the fracture and alterations in the character and composition of the metals due to the drastic thermal treatment, which, though not itself, may cause increased liability to corrosion. The varieties of welds discussed in the paper include electric resistance welds, hot-flame welds with acetylene and water-gas, thermit welds, and steam-pipe flange welds by coke fire and the electric arc. The experiments described are illustrated by seventeen plates reproducing photomicrographic figures, making clear the characteristics of numerous welds examined, each having its own distinctive hall-mark. The paper shows that in every method of welding there is always a more or less clearly defined area of altered molecular construction. Just as quenching and annealing alter steel, so the local heating required for a satisfactory weld leaves its impress on the metal. Electric resistance and acetylene welds seem to be the least prone to oxidation, but good working while the metal is still plastic is of supreme importance where these types are adopted. Electric arc welds are described as most prone to oxidation, and should be employed only for positions where corrosion is not likely to occur; on the other hand, the excellent fusion obtained is a commendable feature of these welds. Flame welds, apart from work such as patching up castings, should receive adequate working while the metal is hot, and of the two methods investigated by the authors it should be noted that water-gas welds may be abnormal through the use of oxidising flames, while acetylene welds certainly require annealing to break down the crystalline structure in the vicinity of the weld. The main difficulties to be overcome in welding are too low a temperature to secure true fusion, and oxidation at the point of welding. Of these, the former is more readily detected than the latter, which is distinctly insidious in its effects, but can be obviated in all methods of welding save that conducted by the electric arc.

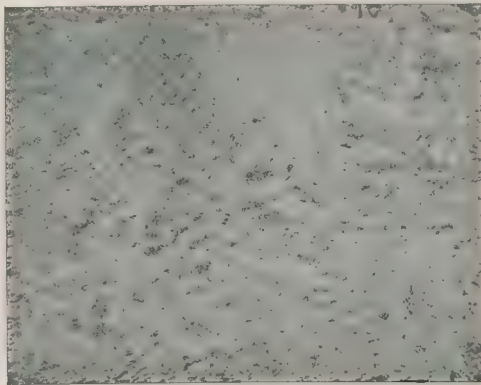
ENGINEERING NOTES.

WE have heard a good deal about paper bags lately in connection with culinary practice, but a more recent novelty

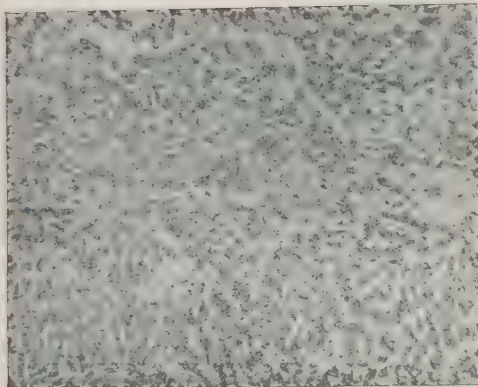
is the use of paper-lined bags by a leading firm of cement manufacturers in Sydney, New South Wales. The expedient was due to the objection of dock labourers in the port to handle cement packed in ordinary bags on the ground that the dust emitted causes injury to health, the consequence being that cement in bags cannot be shipped in large quantities. As thousands of bags of cement



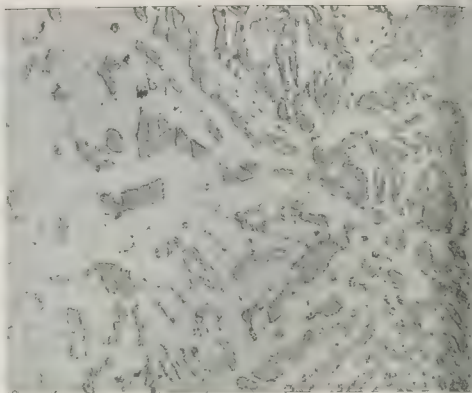
Resistance Weld. Etched.
Magnified 100 Diameters.



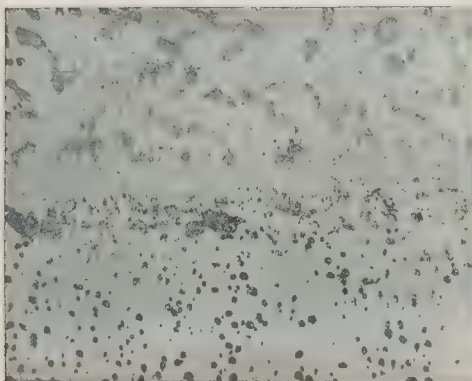
Acetylene Weld. Actual Weld.
Magnified 100 Diameters.



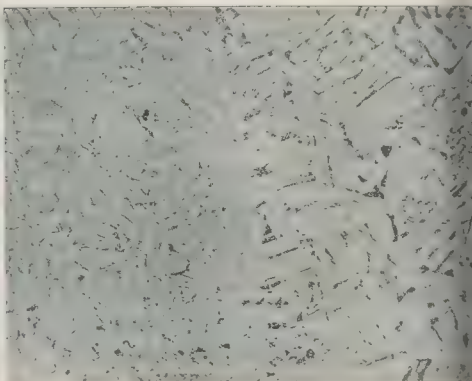
Water-gas Weld.
Magnified 100 Diameters.



Thermit Weld.
Magnified 100 Diameters.



Hand-welded Tube and Flange. Etched.
Magnified 100 Diameters.



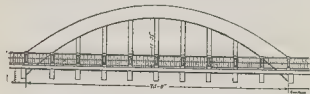
Arc Weld, showing Junction of Flange and Tube.
Magnified 100 Diameters.

("Studies of Welds," see preceding page.)

are exported monthly to Australian States by the largest manufacturers in Sydney, and the employment of barrels would be inconvenient and costly, the firm have introduced paper-lined bags experimentally. The cost of these is almost prohibitive at present, but it is believed that they can be made very cheaply in large quantities by the aid of machinery.

A Bowstring Concrete Bridge.

The accompanying illustration represents a reinforced concrete bridge of 73 ft. span, recently built in Ohio. The design is one largely adopted in structural steel practice, but is unusual although not unknown in reinforced concrete work. Two reinforced concrete arch ribs carry

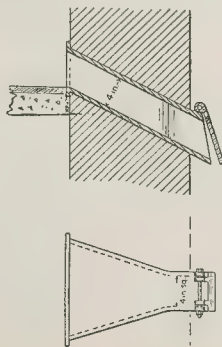


Bowstring Concrete Bridge.

the bridge decking by means of suspension members of the same material, and the arch thrust is taken by steel bars passing through the deck slab, leaving only the vertical load to be supported by the abutments. The roadway is 31 ft. wide and a 2 ft. 9½ in. footwalk projects in cantilever on each side. The cost of the work is stated at 1,720L., as compared with 2,200L., the lowest price submitted for a steel bridge of the same type.

Water Outlets for Fire-resisting Buildings.

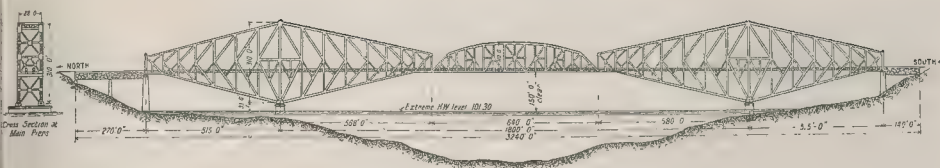
much injury is caused by the flow of water into floors below that where an outbreak has taken place, lift wells and other openings forming ready means of communication between



Water Outlets for Fire-resisting Buildings.

all the stories. In other cases damage caused by the retention of water on fire-resisting floors where perishable goods stored. There is no difficulty in guarding against both of these contributory causes. All floor openings can be protected by watertight curbs a few inches high, and outlets can be inserted in the exterior walls for the escape of water. We give on this page two drawings of the water outlets provided in a New York silk warehouse for draining away water which will be used in the event of fire. It will be seen that the outer end is closed by an automatically operating door, preventing the ingress of cold air in winter, but which could easily be opened for ventilation purposes in summer if required. The idea is one that will doubtless be welcomed by many architects.

AFTER much discussion of the reconstruction of Quebec Bridge, the preparation of numerous designs by the Board of Engineers and competing firms the contract for the reconstruction of Quebec Bridge has been awarded to the St. Lawrence Bridge Company of Montreal. This company has submitted seven different plans with tenders, also tendered upon six alternative sets of drawings prepared by the Board. Three of the firms submitted sixteen tenders between them making a total of twenty-nine tenders, of which one only could be successful. The large amount of money sunk in the gratuitous preparation of schemes brings into relief an obvious disadvantage of the existing basis of engineering competitions, the aggregate outlay representing no inconsiderable proportion of the cost



Quebec Bridge.
(From the Engineer.)

which is nearly $1\frac{1}{2}$ millions sterling. We reduce a general elevation of the accepted plan, which provides for two railway tracks a footpath 7 ft. wide. The length of the span will be 1,800 ft., the same as that of original span, and the clear headway of ft. will be provided above high-water level. Work is to be completed by December 31, 1911.

A twin tunnel with the length of about 1,400 ft., and comprising two tubes of 20 ft. diameter, is at present nearing completion under the River Elbe, at Hamburg. The works were commenced in 1906, and the total cost will exceed a million sterling. One end of the tunnel is in the suburb of St. Pauli and the other in the city. The highway route between the two places will be reduced by about two and a half miles after the subway has been opened to traffic. Each entrance is approached by way of an imposing building covered with green copper-sheathed dome, and containing lifts for vehicles and pedestrians. Attendance is reduced to a minimum by the application of automatic devices for starting, accelerating, retarding speed, and stopping the lifts.

For some time past makers of sheet steel in the United States have been devoting serious attention to the production of steel less liable to corrosion than the material commonly obtainable, and which experience has shown to be far less durable than good wrought iron. One of the firms producing corrosion-resisting steel is the Inland Steel Company, Chicago, by whom "non-corrosive" sheets are supplied suitable for constructing roofs, tanks, culverts, and for all purposes which ordinary iron and steel sheets are used. The metal is stated to be of very high quality and free from the constituents usually responsible for the ready corrosion of ordinary mild steel. The sheets are supplied in annealed, annealed and galvanized, and in plain or corrugated. Architects and engineers in Great Britain would welcome a material of similar quality.

An ingenious method of constructing a reinforced concrete pumping well at Haddonfield, New Jersey, consisted in sinking a cylindrical wall by excavating the earth and lining up the wall as the work progressed until required depth had been reached, when the bottom of the cylinder was closed by a concave floor.

Fig. 1 is a vertical section, and Fig. 2 a half plan of the well, reproduced from an article by W. D. Vowbury in the *Engineering News-Record*. The well is 42 ft. deep, and has the internal diameter of 20 ft., the thickness of the shell varying from 14 in. at the top to 18 in. at the bottom. The concave floor is 16 in. thick, it is being that best calculated to withstand hard pressure.

The shell is reinforced by a network of vertical and horizontal bars; the vertical bars are arranged in two circles, composed of 1-in. and $\frac{1}{2}$ -in. twisted steel, spaced 48 in. apart in the outer circle and 42 in. apart in the inner circle; and the horizontal bars are arranged in form of concentric hoops, spaced apart at radial distances of from 24 in. to 36 in. The bottom of the well is connected with the shell by a form of tenon joint, and reinforced by a double network of $\frac{1}{2}$ -in. bars forming meshes in square.

The shoe at the bottom was built of $\frac{1}{2}$ -in. plates, and to it were anchored the bars of the outer circle of the shell reinforcement. The moulding of the concrete shell moulds were divided consisting of an outer and inner ring,

divided into six segments and connected by bolts, the height of each ring being 5 ft. 6 in.

Before commencing construction a deposit of soft mud was cleared away from the site of the well. The shoe was then assembled and put in place, and over it were suspended the moulds, the reinforcing bars being temporarily fixed in position. Each 5-ft. course of concrete was continuously deposited, and excavation was carried on while the concrete set. By releasing the moulds the ring of concrete sank down to

the bottom of the excavation, when another ring was moulded on the top, and excavation carried down for a further distance. By continuing these alternate processes the shell was finally completed to the required depth. One day and two nights were usually allowed for the concrete to set and, although no waterproofing material was employed, the well proved to be perfectly dry on completion.

The cost of the well is stated at 1,040l., including roof, ladder, and other auxiliaries.

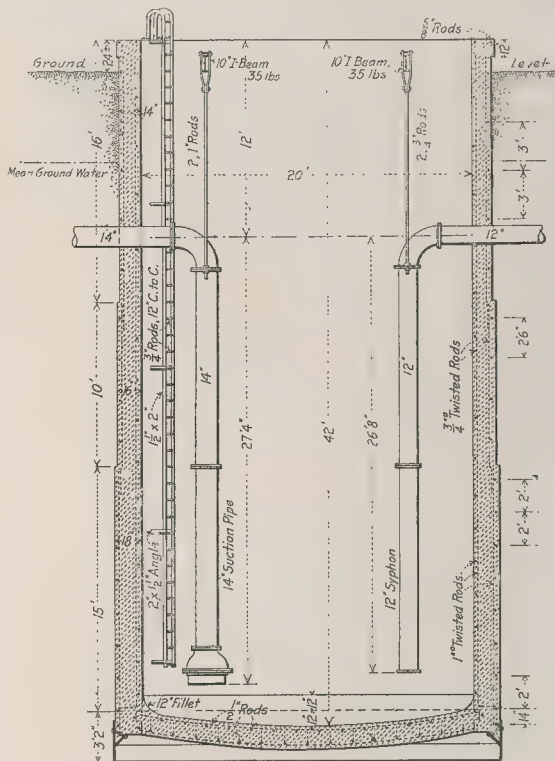


Fig. 1. Vertical Section

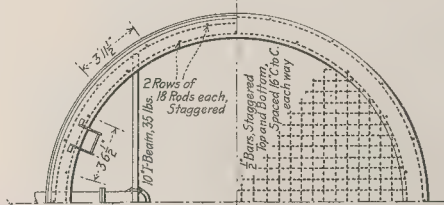


Fig. 2. Half Plan of Reinforcement
Sinking a Reinforced Concrete Pumping Well.
(From *Engineering News*.)

THE BUILDING TRADE.

STUCCO.

THE most durable stucco is obtained when cement is employed, but the trouble lies in the fact that cement sets quickly, much more quickly than lime, and cracks are liable to appear. If, however, just—with the accent on the word just—sufficient of each ingredient is used, and neither too little nor yet too much water is added, a stucco can be produced that is far superior to any other in weathering powers. If an excess of water is employed the plaster will not cling properly to the wall; yet, on the other hand, if too little be used, the cement plaster will dry so quickly that cracks are certain to result. Again, if too much cement is used cracks are liable to appear. Dryness in any form results in cracks, which in some cases are so fine as not to be discernible except by close inspection. These cracks will in time admit moisture, rain tearing sulphur and ammonia, which will in time break down the protective covering, and the stucco will fall away, either by disintegration or peeling.

One essential, therefore, to good work is that the plaster must not lose its dampness too rapidly, and this can be done by keeping the surface wetted or by way of damp cloths hung in front of the wall. It is also necessary to prevent the water in the cement being absorbed by the brickwork on which it rests, and this can be done by previously well wetting the brickwork.

To make a good weather resistant, the stucco must be dense. This can be obtained by mixing the concrete stiff, and yet contain the necessary water to prevent rapid drying, which will allow the plaster to work rapidly. A very thorough mixing will accomplish this. Trowelling the surface should not be done too much for although by this means density is accomplished, the result will only be the trouble of cracks when dry, which is to be avoided. Trowelling brings the water to the surface, and the work is liable to dry too rapidly.

The proportions of the various materials used is debatable. Whether the first or last coat should contain the most cement has to be considered from two points. The first coat, it is argued by some, should be the one containing the greatest percentage of cement, as it has to bind to the wall and support the outer coats. On the other hand, the last coat is the one attacked by the weather, therefore it should have the greater amount of cement is argued by others. Unfortunately, the greater the percentage of cement there is all the more tendency to crack, and unless great care is exercised a high percentage of cement is likely to produce this undesirable result. A medium percentage is therefore the best in the long run. Thus the coats—three are recommended, as two coat work is little more than $\frac{1}{2}$ in. thick—may be composed of one Portland cement to two of clean, sharp sand. This for the first two coats. The finishing coat may be composed of Portland cement, sand, and clean, sharp shingle. As the cement is liable to expand during wetting and contract, whilst drying the precautions previously mentioned should be taken. Lime stucco is preferred by some, because it is not liable to this trouble.

The sand and shingle must be sharp. Many a failure is due to the non-observance of this. Earthy matter or organic substances not only chemically combine with the cement and break down the stucco, but they prevent the cement from mechanically joining with the sand and shingle.

The first coat should be well scored to form a proper juncture with the second. The wall, too, should be properly prepared, well washed, and joints raked out if necessary. If the wall is old and has been exposed to the weather it should be washed down with a weak acid, as, for instance, muriatic acid. This should be done several days before the stucco is applied.

Uneven thicknesses of plastering should be

avoided or cracks will result through uneven drying. Joints should therefore be filled in before the general coat is applied.

Where firing strips are used for the purpose of affixing metal mesh precautions must be taken to prevent danger from them. This arises from the fact that they are liable to split under the influence of wetting and drying at those places where staples have been driven in to fix the metal mesh, and the mesh becoming loose, the stucco and mesh fall down. By attaching the mesh to the wood strips by galvanised-iron wire tied around both this danger is avoided.

A good lap should be given to the mesh joints, or at these places cracks in the stucco will appear. There is a danger in using metal lath where some patent plasters are used, as some of them contain acid, which attacks the metal. It is desirable, therefore, where such are used to give the mesh a coat of limewash or some similar protective coating.

Where lime is used with cement the limit should be 10 lb. of hydrated lime to one bag of cement, and this should only be used for the second coat. The first and last coats should not contain more than 5 lb. per bag of cement; in fact, it were better to use none at all in the finishing coat. Only hydrated lime should be used, and no plasterer's putty. Hydrated lime is lime scientifically prepared, being properly cleansed and screened, and is free from all impurities. A good substitute for sand used by the Americans is asbestos rock and fibre. The fibre performs the binding function of ox-hair in plastering, the stucco being less liable to crack. The use of asbestos fibre along with cement and sand can be recommended. Other aggregates, such as crushed marble, finely-crushed granite, and similar rocks are used where some special finish is desired.

To obtain a rough-cast finish, mix one part hydrated lime with two of Portland cement, mixed dry, and add water until a thick paste is obtained. Put this into a pail, and, keeping it well mixed, take out by means of a paddle or trowel, which, dashed against a stick held in the other hand, splashes the mixture on to the wall, giving the rough-cast finish.

Pebble dashing is composed of clean-washed pebbles mixed with a thick paste of the composition above. This gives a pebbly surface to the work. To obliterate any streaks showing after the finishing coat has been put on, a lime-cement wash can be used, which at the same time will fill in any cracks. To obtain a float finish, the surface is treated with a hand float in the ordinary way for plastering.

"Depefer" is a rough-cast into which pebbles or broken stones are pressed after the last coat has been floated and whilst it is still wet.

If tinting is to be done the colouring matter can be added to the cement-wash just mentioned, but the result is not so lasting as pigments mixed along with the stucco. Free lime in the concrete when moist chemically combines with many of the ordinary colour pigments, and also attacks any organic matter in the plaster. The use of paint, therefore, containing linseed oil should be avoided. The percentage of colouring matter to be added to the plaster depends upon the tint required. This may be a source of danger, because a high percentage of some pigments weakens the plaster. Yellow ochre can be added up to 8 per cent., and gives a bright tan colour. Yellowish brown or buff can be obtained from 5 per cent. yellow ochre and $\frac{2}{3}$ per cent. of permanganate brown. Black shades are obtained by using a small percentage of lampblack or carbon. For red, red oxide or iron are the only colours that can be safely employed. A strong, highly-priced oxide, whereby a small percentage only is necessary, is better than a weaker, cheaper grade. Black iron oxide will give a bluish shade of black. Brown is a colour not readily obtainable except at the expense of the plaster's strength.

Iron oxide can be used; the lime in concrete acts on ferric chloride or ferrous sulphate, giving a reddish-brown colour deposit of ferric hydroxide; but to obtain this 20 to 30 per cent. by weight of colouring matter is required. Green is not colour difficult to obtain. The only green pigment that will stand the lime action is chromium oxide, which is an expensive mineral pigment. The colouring values of the cheaper grades are very low. By mix blue and yellow green can be produced, the trouble is to obtain a good strong tint that will withstand the lime. A good tint is ultramarine blue, but it has a very poor colouring power when mixed with other pigments. It will, however, stand the action of the lime.

The alternative is to use a light-colour plaster, but this means a more expensive stucco. Olive green can be obtained by using yellow ochre and a pigment of bluish tensity, as some of the blacks, but the brown sandy shade of the concrete has yet to overcome before a good green can be obtained. The alternative is painting the surface.

SOME LEGAL QUESTIONS ABOUT EXTRAS:

THE ARCHITECT AS ARBITRATOR

We have received the following communication from a well-known builder:—

"I am thoroughly in agreement with the remarks of Mr. J. E. Yerbury in your issue as to the necessity for a revised form contract. But whatever care may be taken in framing a revised form, I imagine that the legal profession will, until the end of time, persist in acting on the principle that law and justice are not necessarily synonymous. Lifelong experience in the building trade has brought this hard fact home to me on many occasions. More than once the R.I.B. form has been submitted, in my presence, a barrister who had had no previous knowledge of the document, and after perusing he has asked me, with an air of questioning surprise, "And have you really signed this? Why you are entirely in the hands of the architect." Of course, some will say that speaks volumes for the general integrity of the profession that there are comparatively few cases figuring in the courts. On the other hand, it must not be forgotten that, in bygone days, the number of cases where builders consider they have a real grievance, considerations of expense or other equally cogent reasons may determine them to submit what they deem injustice with what gain they may.

I am inclined to agree that the arbitrator should, by preference, be a lawyer, although the idea seemed a startling one at first. It is no slander to say that the architect, arbitrator in his own case, is in an impossible position if an unbiased, impartial decision is the desideratum. It is against human nature.

I have in my mind an architect for whom I have worked for at least a score of years and with whom I have settled up as many jobs, always in a friendly manner, yet me it is only too obvious when he has client difficult to satisfy, or when his plans or specifications chance to be a little faulty—as must happen sometimes to the nearest painstaking architect. In such circumstances he appears a different man altogether and falls back upon his powers under contract in a manner that, although entirely unconscious to himself, is patent to a student of human nature like myself. I very much doubt whether the strong and just architect alluded to by Mr. Yerbury really exists. Certainly, some of the architects of high reputation in the profession fail to reach ideal in these respects. Quite possibly he is I show my own bias. I am quite certain, however, that men at the top of the profession are not disinclined to shield their own reputation behind the broad back of the building. The maintenance clauses, sometimes enforce the remedying of defects over a period of one or, as in one case I know of, two years and the withholding of the retention mon-

a powerful weapons when the architect has mind to do this. Twelve months bring to light many defects, not all of them due to material or faulty workmanship. I have had to replaster ceilings whose cracks were doubtfully owing to ignoring the formulae laid down as to the proportion the depths of joists and beams should bear to their span; make good settlements undoubtedly caused by skipping the foundations in unsatisfactory manner; to renew casements badly designed for the purpose of keeping out wet; and so on. I have unacknowledged but fully-understood myself for neglecting to do so being the loss the architect's favour and opportunities of ordering for his work. My advice was asked short time ago with reference to a case in which the architect deliberately rejected the plans submitted by the builder, and ordered him to obtain tiles from a certain yard. These went wrong, and after two years, the attention money having been withheld, the builder was ordered to strip the roof and tile with other tiles. To my mind, this architect's notion of fairness is embryonic, his idea of justice elemental. Yet he and the others are all of them, like Brutus, "honourable men." One can only echo Burns's cry, "O wad the Powers the gittie gie us, to see ourselves as others see us." There would be rejection, of course, to the substitution of a lawyer for an architect as arbitrator on a ground of lack of technical knowledge, but I imagine, if lawyers were appointed as regular thing, some of them would soon specialise in this particular direction. I do not understand Mr. Yerbury's assertion in relation to extras, that the builder charges as much as he can. How can this be when the contract specially provides that these are to be measured and valued at contract rates? On the contrary, the standing relevance is that it is impossible to carry out the bulk of the extra works without incurring serious loss. An additional door or window ordered, and, notwithstanding the wall is cut from 25 per cent. to 50 per cent. more than the same articles when made in quantities, the surveyor usually insists upon pricing the contract rate for the larger quantities, and prates about the law of average. Times without number I have had to accept 1s. 6d. for an odd window which the shop-books show to have cost 2s., and so with other things: a little bit of garden wall, or a little bit of a pipe, ordered after the bricklayer or the plasterer have left the job, is supposed to be ordered at the same price as the bulk of the work, although men and tackle have to be brought back to the job on purpose to do these little jobs. Extras of this kind are a curse, and ruin many an otherwise profitable job. The ideal contract under the present system is undoubtedly that in which the plans and details, in a complete state, are handed to the contractor upon signing, and no deviations or extras occur. Architects never give consideration to the fact that variations almost inevitably mean delay, delay means disorganisation, disorganisation means loss. Six months in a builder's office as correspondence clerk would bring this home to them as nothing else could."

GOVERNMENT CONTRACTS.

The following tenders have been accepted during the past month by the Government departments named:—*Admiralty, Works Department:* Granite piers—Messrs. A. & F. Ansell, 57, Gracechurch-street, E.C.; heating of detention quarters, Devonport—Messrs. J. & Beale, Ltd., 1, Arthur-street, East. *Admiralty, Contract Department:* Firelocks—Messrs. Bonnybridge, Silica, & Fireclay Company, Ltd., Bonnybridge, Stirlingshire; Messrs. Candy & Co., Ltd., Heathfield Station, near Newton Abbot; Messrs. Martin Brothers, Ltd., 22, Lockyer-street, Plymouth; Messrs. Westman Collieries, Ltd., Milburn-house, Newcastle-on-Tyne; Messrs. Westlake & Co., Ltd., Cornwall. *War Office:* Works repairs, erection of married soldiers' quarters, Royal Military College, Sandhurst—Messrs. T. R. and G. Kersley, Frogmore, Blackstar, Hants; erection of barrack blocks, Dover—Messrs. G. Lewis & Sons, Widdred-road, Dover; erection of forage barn, etc., Barry, Glam.—Mr. J. Raitt, 9, George-street, Montserrat, N.B.; excavation work at Woolwich dockyard—Messrs. F. & T. Thorne, Isle of Dogs, E.; periodical services, Fermoyn and London (Wellington Barracks)—Mr. F. Holdsworth, 32, Saltair-road, Shipley, Yorks;

Tipperary—Mr. T. Kellcher, 4, Millard-street, Cork; Woolwich—Mr. F. Holdsworth, 32, Saltair-road, Shipley, Yorks; renewing flooring, Aldershot—Mr. Jas. Crockerell, Stanhope Lines, Aldershot; structural steel and iron for coal bunkers, Woolwich—Willes Foundry Company, Ltd., Widnes. *Crown Agents for the Colonies:* Cement—Messrs. Peters Bros., 72, Victoria-street, S.W.; Messrs. Martin Earle & Co., 159, Queen Victoria-street, E.C. *Office of Works:* Builders' work, Blackburn, alterations and additions to County Court—Messrs. W. J. Woolf Cronshaw & Sons, Pump-street, Blackburn; British Museum, reconstruction of roof—Messrs. W. E. Blake, Ltd., Plymouth; Carnforth, new post office—Messrs. R. Thompson & Morris, 12, Dalton-square, Manchester; Crydon, enlargement of telephone exchange—Messrs. J. & M. Patrick, Wandsworth, S.W.; Devonport, extension of post office—Mr. A. N. Coles, Old Town-street, Plymouth; Edinburgh, new workshops at Brighton-street—Messrs. J. Scott & Brown, 3, Barclay-place, Edinburgh; Eltham, new post office—Messrs. Thomas & Edge, Woolwich, S.E.; Glasgow, temporary accommodation at head post office—Messrs. William McCall & Sons, 5, Balmano-street, Glasgow; Hull, adaptation of labour exchange—Mr. P. T. Kettlewell, 60, Trinity-street, Hull; Kidderminster, enlargement of post office—Mr. E. Crowdon, Farm-street, Birmingham; Maybole, new post office—Messrs. D. & J. Milligan, 46, Kyle-street, Ayr; Newcastle-on-Tyne, new branch post office at Heaton—Mr. J. Milne, Coatsworth-road, Gateshead; Romford, new post office—Mr. F. Wilmott, 36, High-road, Ilford; western telephone exchange erection—Messrs. Howell J. Williams, Ltd., 11-17, Bernonville-street, S.E.; Woking, alterations to post office—Mr. McCarthy E. Fitt, 118, Oxford-road, Reading; pavement and vertical lights, British Museum extension—Messrs. Thaddeus Hyatt & Co., 9, Farringdon-road, E.C. *Commissioners of Woods:* Pair of stone cottages at Ford, Inverleiver, Co. Argyll—Mr. J. Carmichael, Kil-michael, Glassary, Lockgilthead, N.B. *Commissioners of Public Works, Ireland:* Erecting and furnishing Malinmore National School—Mr. R. Colhoun, 22, Strand-road, Londonderry.

GENERAL BUILDING NEWS.

NEW FREE CHURCH, FRINTON-ON-SEA.
The plans of this church have been prepared by Mr. W. Hayne, J.P., architect, of Frinton-on-Sea, and the builders are Messrs. Potter & Sons, of Chelmsford. The contract price is 3,332.
NEW SCHOOL, EDINBURGH.
A new higher grade school is to be erected on a site at Viewforth, at a cost of 54,000l., to provide accommodation for 1,200 pupils. The architect for the work is Mr. John A. Cairns, of Queen-street, Edinburgh.
REMODELLED SCHOOL, MACDOFF.
The alterations to this school have been carried out under the direction of Messrs. Sutherland & George, architects, of Aberdeen. The various contractors were:—Mason work—Mr. J. G. Corbett, Fraserburgh; carpenter work—Mr. J. Watt, jun., Inverurie; slater work—Mr. Forbes Morrison, jun., Aberdeen; plaster work—Messrs. Roger & Baxter, Aberdeen; plumber work Mr. J. Connell, Macdoff; painter work—Messrs. Gordon & Watt, Aberdeen; heating—Messrs. J. Blaikie & Sons, Aberdeen; block flooring—The Acme Block Flooring Company, London.

NEW BANK, ASHTON-UNDER-LYNE.
The new buildings of the Ashton Savings Bank have been erected from designs selected in competition—prepared by Messrs. W. H. George & Sons, architects, of Ashton. The cost of the erection was 3,800l., and the builders were Messrs. Saxon Bros., of Stalybridge.
NEW WORKHOUSE INFIRMARY, READING.
These buildings, which were opened last Saturday by Mr. John Burns, have been erected at a cost of 15,732l., from the designs of Mr. W. Roland Howell, F.R.I.B.A., architect, of London and Reading, and the various contractors were:—Messrs. H. W. Godwin & Co., Church-street, Reading; additions to nurses' homes—Mr. McCarthy E. Fitt, Oxford-road, Reading; the committee-room block, the aged and infirm block, and the mortuary, Mr. Francis Newberry, King's-road, Reading; the additions to the porter's lodge and the building of the operating department, The sub-contractors included the Klein Patent Fire-Resisting Syndicate, Ltd., of 135, High Holborn, W.C., who laid the floors and roof of the aged and infirm block and the roof of the operating department; Messrs. Val de Travers, of Bishopsgate-street, E.C., who laid the asphalt on roofs; Messrs. Vulcanite, Ltd.,

of 115, Cannon-street, E.C., who executed portions of the roofs of the nurses' home, committee-room block and porter's lodge; Messrs. Despecker, Ltd., of Holborn Viaduct, E.C., who laid all the Terrazzo flooring; Messrs. Bain & Co., of 22, Cannon-street, E.C., who erected the outside iron staircase; Messrs. A. Brown & Co., of 81, Smallbrook-street, Birmingham, who supplied the door and window fittings; Messrs. Baughan, of London-street, Reading, who installed the electric light in the operating-room block and the bells and telephones in the block for the aged and infirm; Messrs. Dennison, Kett, & Co., of 11, Queen Victoria-street, E.C., who supplied the lift in the same block.

BANK, NEWCASTLE-ON-TYNE.
Considerable extensions and alterations have been made to the Lambton branch, Grey-street, of Lloyds Bank, Ltd. Adjoining premises were obtained, which were rebuilt, the basement and ground floor added to the bank, and the upper floors are offices. The bank is fitted up in mahogany, the floor of public space is vitreous and ceramic mosaic, the behind counter in oak. The floor of managers' and consulting rooms is finished with parquetry. The general contractors were S. F. Davidson & Miller; mosaic by Emley & Sons, Ltd.; fireplaces by Henry Walker & Son, Ltd., and Emley; plastering by Davidson & Miller and John Chapman; electric installation by S. Gillitt; locks and hardware by N. F. Ramsey & Co.; painting and decoration by John G. Cole and Davidson & Miller; heating by The R. J. Ward Company (all of Newcastle); stanchions, columns, and girders by Dorman, Long, & Co., Ltd., Middlesbrough; fireproof floors by The Fawcett Construction Company, Ltd., Greenwich; wood block floors and parquetry by The Art Pavements and Decorations, Ltd., London; sanitary fittings by Doulton & Co., Ltd., London; electric passenger lifts by Weygood & Co., Ltd., London, and Pickering, Ltd., Stockton-on-Tees, and a specially built basement lift by Pickering; electric fittings by Best & Lloyd, Birmingham, and Verity, Ltd., Manchester; entrance doors by The Van Kamel Revolving Door Company, Ltd., London. New fittings, counters, desks, etc., which are in mahogany, were made by Robson & Sons, Ltd., Newcastle. The whole of the work was designed by and carried out under the personal direction of Mr. John W. Dyson, architect, Newcastle, and Mr. C. H. Davies was clerk of works.

DRURY-LANE THEATRE.
Considerable alterations and decorative works are in progress at Drury-Lane Theatre, which reaches its centenary next year. The vestibule is being entirely remodelled in connexion with the reconstruction work. The ceiling has been panelled, and enriched beams added with a modillion cornice to the walls. The walls have been treated with a high dado in polished mahogany, running all round the vestibule, and in place of the old solid doors leading to the rotunda and staircases French doors in mahogany have been put with bevelled plate-glass panels. The existing lobby doors have also been brought into harmony with the new scheme of decoration. The large saloon over the vestibule is also in the hands of the decorators, and considerable additions are being made to it. The main staircase ceilings needing reconstruction, an opportunity has been taken to put in a modelled ceiling with new lantern lights over each staircase. The architects are Messrs. Pilditch.

NEW BUILDINGS IN LONDON.
Rebuilding premises, Poppin's court, E.C.; Messrs. Dove Bros., builders, Islington. Shops, etc., Great Portland-street and Great Castle-street, W.; Mr. W. E. Blake, builder, Montague-place, W.C. Shops, showrooms, etc., Princess-street, W.; Messrs. F. H. Kingler & Sons, builders, Oxford. Rebuilding premises, Oxford-circus, W., for Madame Louise, draper, etc.

HER MAJESTY'S OPERA HOUSE, WINTER GARDENS, BLACKPOOL.
The Opera House and Grand Foyer, Blackpool, has just been opened. No additional land was taken in for the new building, but the available space has been so utilised as to provide seating accommodation for 2,300 people, as compared with 1,500 in the old building. The style adopted is Louis XIV., and the facade is of Marmo, relieved with ornamental railings along the balcony. The main entrance in Church-street may be described as a marble hall, for there is a white marble staircase leading up to the royal circle and foyer; the floor is of black and white marble laid in chess-board fashion, and round the walls there is a dado of Brèche de la Vierge marble. The fibrous plaster work in front of the private boxes and royal circle is taken from a model of an ancient chateau in France. The orchestra stalls consist of inlaid mahogany

SYLVESTER HOUSE,
HACKNEY, N.E.

His town housing scheme has just been completed at Hackney in the centre of a district that has long been deplorably neglected. Improvements were also entered into with the Local Council for widening Eglewell-path throughout its length, whereby a fine new street has been created, and an undesirable removed.

The buildings are planned so that every flat has the sun some time of the day, either the rooms or on the balcony. The main entrance is from Sylvester-road, which is on the centre axis of the scheme; and the buildings consist of four blocks, with a central garden for the use of the tenants. A drying-ground is adjoining, and plenty of space for the children to play in is provided. The balcony system has been selected for the flats on the lines so successfully adopted by the London County Council, whose municipal dwellings are probably the finest in the world.

The flats contain two, three, and four rooms, besides a scullery with rentals from £10 to £12s. a week, according to size and position. Every flat has a good living-room of 13 ft. square, and the scullery is fitted with all the modern conveniences that tenants require. The problem is one of greatest economy of space combined with decency, and this has been obtained wherever possible.

It is seldom that an improvement of this kind is initiated and carried through by the owners, but the experiment has been made by Sir Richard Stapley and his partners, who have always been keenly interested in social matters, and particularly in housing. The architects are Messrs. Warwick & Hall, 15-square, Gray's-inn, W.C., and the surveyors Messrs. F. & H. F. Higgs, of Loughborough Junction, S.E.

QUANTITY SURVEYORS IN
SOUTH AFRICA.

By H. BELL JOHN, F.S.I., A.M.S.E.

DURING the nine years that have elapsed since the completion of the South African War this country has seen many changes in the quantity surveying profession. All or most of these changes have tended not only to the improvement of methods in general, but also to the bringing about of a uniformity that might, in other circumstances, have taken many years longer to effect.

My object in these notes is to trace the rise of quantity surveying in South Africa since the Vereeniging Pact, and to show as clearly as possible its growth to its present, I think I may say, satisfactory position. It can be fairly claimed that the Public Works Department of the Transvaal has influenced this growth to a considerable degree. The work done in any country depends more or less on its needs and on what it is prepared to put up with. It is said that every country boasts a representative form of Government gets the government it deserves. In the same way it gets the architecture, the law, and, in due time, everything else. The tendency in new countries is to put up with things that in older would not be tolerated, and it is natural this should be so in a country like South Africa. The poorly-trained or unapt man is much in evidence. I do not mean by this that most professional men in South Africa are of the poor quality, but that the poor quality man is more likely to get work here than in England—work of responsible nature. The result is not of any benefit to the profession concerned as a whole or to the good men individually.

In such a country as ours there is the "make-a-pile-quickly" ambition pervading all ranks and all callings, and this does not encourage too much conscientiousness in work. If 2½ per cent. can be charged for a bill of quantities for a 2,000l. building, and it can be put on two pages of one's office notepaper, why should a man go to the foolish extreme of using a system and fifteen pages of properly-ruled and written foolscap? The

fact of the two-page bill, including such items as "measure painter from joiner," only helps to leave room for the "allow for 2½ per cent. on above total for bills of quantities." When all is said, the house gets built, and the quantity surveyor (who, in so many cases, is the architect) gets his fees.

It is gratifying to be able to say that that sort of thing has had its day, and decent quantities are now a recognised part of a decent building contract. It is far preferable that no pretence should be made, and that works should be put to tender without quantities than that such makeshifts should be used. Many quite large buildings, public and private, have gone to tender without quantities, but as far as public buildings are concerned the time for such things has passed. The Public Works Department of the Union of South Africa issues quantities for practically all works costing over 500l., and quantities that could be put beside most London bills without suffering from the comparison. The Johannesburg Municipality is busy preparing quantities for its large municipal buildings.

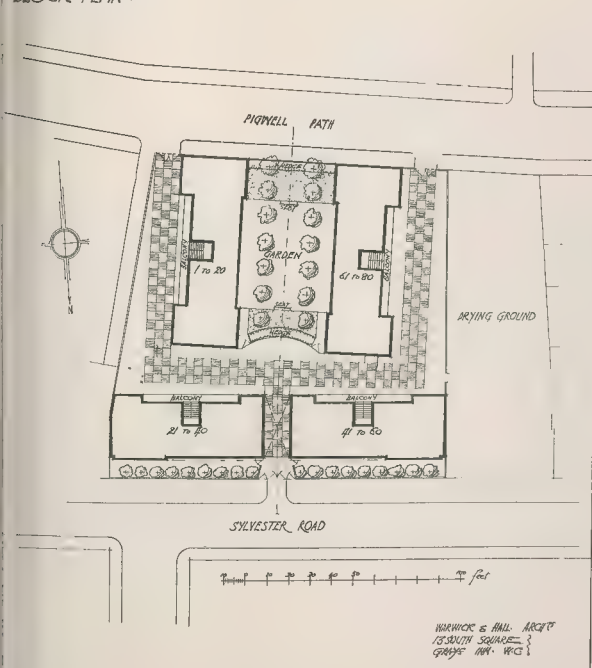
Before the union of the South African Colonies the Transvaal was the only colony with anything approaching an organised branch of quantity surveying in its Public Works Department. During the years since the war several reorganisations of the public service have taken place, but the quantity surveying branch of the Public Works Department has remained either as a distinct branch of the architectural branch, or as distinct from it under the Chief Engineer. Both systems have worked well, and at present with the quantity surveyor as also chief assistant to the architect, with the two branches under his administrative control, the arrangement is as good as it could be. The three assistant architects are, for design, responsible to the architect. There is no mixing up of draughtsmen's work with quantity assistants' work.

In 1902 the Public Works Department of the Transvaal engaged in London two quantity surveyors, an assistant quantity surveyor, and four "workers up." These were added to locally, and the eleven then put into the dough has leavened the whole loaf. To-day quantity surveyors in South Africa have a good and definite standing. Times and men have changed during the past eight years, and men from all over the sub-continent are now employed at Pretoria in the Public Works Department. Outside work has been scarce; departmental work has fortunately been plentiful, at least in the Transvaal, and the fact of all these outside men being temporarily employed under the Government quantity surveyor can bring nothing but good to them and to the profession.

In writing thus of the work done by the Civil Service quantity surveyors I have no intention of slighting the work done by surveyors in private practice—some of them in practice before the Service branch was in existence, and some in practice to day in Cape Town, Johannesburg, Pretoria, and elsewhere.

The two factors that have counted most in the development of the profession, in addition to the importation of trained surveyors by the Transvaal Government, are the Transvaal Society of Quantity Surveyors, founded in 1905, and in 1908 becoming the South African Institute of Quantity Surveyors, and the Federated Master Builders' Associations. The former now has over thirty members, and has consistently urged that quantities should be supplied for all large works. The latter has frequently refused to tender where quantities have not been supplied. The former has done a service by issuing in pamphlet form a guide to a standard system, not, it must be admitted, the final word in systems, but helpful as a starting-point to further developments.

The practice of architecture is, in the Transvaal, a close profession, and it is intended to try to extend the privilege to the Union. In the Bill to effect this it is hoped to obtain some recognition of the quantity surveyor. The only text-book on quantities as practised in South Africa is that by Mr. Cowin, who was at one time in practice at Cape Town. Now that the colonies are merged, it will probably require to be brought up to date subsequent to a standard

HOUSING SCHEME AT HACKNEY:
BLOCK PLAN.



WARWICK & HALL
ARCHITECTS
13 SOUTH SQ. GRAYS INN. W.C.1

TOWN HOUSING SCHEME
FOR AT HACKNEY
• SIR RICHARD STAPLEY •
• WILLIAM SMITH ESQ. • AND
• HENRY SMITH ESQ. •



(See preceding page)

stem being agreed on between the Institute and the master builders. In conclusion, it is necessary to remind readers that the white population of the Union of South Africa is only about one million and a half, that its territory is over six times the area of Great Britain, and that the undertakers of England cannot apply in quantity, though they may in quality, to this country. The profession is in a promising position. Much has been done, though much remains to do. Forces are at work which cannot be withstood, and it may be reliably opined for the profession here, that it is before it a future of great usefulness, such prosperity, and honour.

A NEW METAL FILAMENT LAMP.

On the 16th inst. the British Thomson-Houston Company, entertaining a company of representatives of the technical and lay Press at Rugby, were their general factory is situated, in order to bring to their attention a new filament which they have discovered and are now offering on the market. Their guests were shown the works and the large factory, particularly in detail, and the process of manufacture, with its organisation into innumerable divisions of labour, was made plain. As is well known, the firm is American in origin, and is still mainly under American control, and the various departments are, for the most part, under gentlemen of that nationality. The site was chosen, and the works begun, by a German firm, displaying a German logic in the choice of a place at once so central and so well served by several railway systems as is Rugby. As now in being, the Company was formed in May, 1896, and when its Rugby factory is completed in 1901 the number of people employed by the undertaking was only 800. In 1906 this number had increased to 2,000, and at the present date the number of hands regularly employed at the works, offices, &c., is over 3,000. The works are now carried on upon some 100 acres of land, whilst the floor space occupied is about 1,000,000 square feet, being at the present time upwards of 500,000 square feet. The Company cover in their operations practically the whole field of electrical engineering and manufacture. They turn out a complete assortment of electric lamps, including the Edison Carbon and Gem types, and Mazda (metal filament type). They design and equip rail and tram lines, build electric locomotives and all types of electric power plant. They are proprietors of the patent rights for the United Kingdom of the General Electric Company of America (the largest electric manufacturing Company in the world), of the Allgemeine Elektricitäts Gesellschaft of Germany, and the French Thomson-Houston Company. The Company have been engaged in the manufacture of electric lamps since 1902, and are among the first to manufacture metal filament lamps in this country. They have been among the foremost in all improvements and developments of electric lamp manufacture, from carbon to metal filament, and have now added a new electric incandescent lamp upon a British market. It is a new development of the well-known "Mazda" lamp and denotes a momentous advance in the making of electric lamps. The lamp is of the metal filament class employing tungsten filaments. But it differs from all the others in the circumstance that it is constructed with a solid-drawn wire of tungsten, instead of the brittle strands of "used" or "squeezed" tungsten employed in other lamps of the metallic filament class. After three years of laboratory work, the Company and their associates have succeeded in rendering tungsten into a ductile form and drawing it into a wire. The better to appreciate the importance of this development it is necessary to understand the conditions which have governed the manufacture of metallic filament lamps hitherto. It is generally known, the filaments are made by pressing through a die a mixture of powdered tungsten and a binder, the latter subsequently removed. The resulting structure, consisting of particles of tungsten fused together, are obviously of an extremely brittle nature, and consequently the tungsten filament lamp has not been able to withstand ordinary rough usage. The risk of breakage is substantially reduced by the introduction of the rigid connections which have hitherto been a feature of tungsten filament lamps. Instead of short lengths, tied to the supports at four or five different points, the filament is formed in one continuous length, wound upon spider supports held clamped flexible connections to the

leading-in wires. The drawn filament is, besides, continuous, and is not subject to the variations noticeable in the ordinary metal filament lamps, where, as is often the case, one section of the filament will burn at higher temperature than the rest, thus reducing the life of the lamp. The enormous advance represented by the production of a drawn wire tungsten filament of accurate uniformity and continuous length is obvious.

A Note on Tungsten.

Tungsten has heretofore been known chiefly as a steel-hardening metal. In recent years, however, it has become an important material for filaments of incandescent lamps, and is to-day the most efficient metal for this purpose, owing to its high melting point (3,000° C.), which is higher than that of any other metal, and its low vapour tension. The metal has ordinarily been obtainable in commerce in the form of a dark grey powder, usually made by the reduction of the yellow oxide by hydrogen or by carbon. Even in ordinary commercial lamps the filaments are of a degree of purity so high that no impurities can be discovered by the most searching methods of chemical analysis known. Not only is this true, but these filaments, during the course of commercial production, are exposed to temperatures high enough to drive out by mere vaporisation almost any impurity. Nevertheless, these filaments show no traces whatever of ductility, or even pliability, but, on the contrary, though strong enough for mounting in commercial lamps, they are exceedingly brittle and incapable of taking a permanent set. Attempts have hitherto been made—but always without success—to produce ductile tungsten by various purification processes, varying the ore from which the tungsten is obtained by trying first wolframite (an iron-manganese tungstate) and then scheelite (the calcium tungstate). Announcement has recently been made, however, of the production of tungsten in a form in which it is ductile. This ductile tungsten would seem to be a new substance from the point of view of the physical chemist. Ductile tungsten is bright, tough, steel-coloured metal, which can be drawn into the finest wire, much below one thousandth of an inch. The tensile strength of the wire increases as the drawing proceeds; or, in other words, the more the metal is mechanically worked the tougher and stronger it gets.

LONDON COUNCILS.

Croydon.—The relation of diphtheria to sanitary defects in houses is examined by Dr. H. M. Richards, the Medical Officer of Health, in his annual report. He says that the proportion of houses infected with diphtheria that were found to have serious defects in their drains was 7.3, a figure which is rather less than those found in the two preceding years. The figure confirms the view that sanitary defects are not an important factor in the causation of diphtheria. Dr. Richards, in another portion of his report, says that the number of systems of combined drainage dealt with as single private drains during the year was fifty. This work was carried out under the provisions of the Croydon Corporation Act, 1905. The cost of carrying out the necessary works amounted to 556l., and was borne by the owners instead of, as elsewhere, by the inhabitants at large. 905 back yards were paved during the twelve months. This was a considerable increase over the number dealt with in the previous year, and is a record of work of considerable sanitary value. Friern Barnet.—The Local Government Board has sanctioned a loan of 2,500l. for improvement works at Friary Park. Application is to be made to the Local Government Board for sanction to borrow 3,600l. to be expended, in addition to 2,000l. received from the Middlesex County Council, in widening the bridge over the Great Northern Railway. The Local Government Board is also to be applied to for sanction to borrow 440l. for a new road from Sydney-road to Alexandra-road. The following plans have been passed:—Six houses, Ashurst-road, for Mr. G. S. Scott; eight houses, Chandos-avenue, for Mr. J. Farrer; four houses, Friern-lane, for Mr. E. K. Wilton; depot for horses and house, for Messrs. Carter, Paterson, & Co. Marylebone.—The Medical Officer of Health, in his annual report, says that the total number of inspections made by the drainage inspectors was 8,325, as against 6,850 in the previous year. The number of plans relating to drainage of new buildings was fifty-two. In the case of old buildings the number of plans received was 570. The total number of plans deposited was 622, as against 521 in the previous twelve months. The number of orders under seal as to combined drainage granted by

the Council was twenty-seven, as against twenty-three the previous year. In fourteen cases the liability of the Council for the reconstruction of the combined portions of existing drains was admitted, and the work carried out by the Works Committee at the request of the Public Health Committee.

Surbiton.—The Council has accepted the tender of Messrs. Dick, Kerr, & Co., at 33,468l. 15s. for the installation of the northern sewers, plant, etc., in connexion with the new sewerage scheme. Twelve tenders were received. Messrs. Forryth & Mauls, the Architects to the Board, have been instructed to report upon the best way of extending the Council's offices.

FOREIGN AND COLONIAL.

The Alabaster Industry, Italy.

Owing to the competition of Germany and France, the marble and alabaster commercial statuary, which constituted until lately one of the most flourishing industries in Florence, is (writes the British Consul) passing through a very serious crisis. Most of the sculpture seen in the Florence shops is not marble, but alabaster, which, while very transparent in its natural state, becomes opaque and slightly granulous, similar in appearance to the Carrara and Serravezza marble, through the process of baking. Not being, however, so hard, it has the advantage of being more easily worked, with an economy of 50 per cent in labour. White alabaster is only to be found in the province of Pisa, and, we are informed, that a group of Tuscan financiers is negotiating with the quarry owners to secure a monopoly in this for the purpose of combating foreign competition.

American Cement Production in 1910.

Statistics collected by the United States Geological Survey show that the total quantity of Portland, natural, and pozzolanic cement manufactured in that country during 1910 amounted to 76,934,675 barrels, valued at 13,610,554l. Compared with the previous year, this represents an increase of more than ten million barrels, or 15.3 per cent. in quantity and 26.9 per cent. in value. The total output of Portland cement for the same year was 75,699,435 barrels, equal to nearly thirteen million tons, valued at 21s. per ton. The output of pig iron in the United States for 1910 was 27,288,545 tons, valued at 61s. 6d. per ton. Hence the production of Portland cement was approximately 47 per cent. that of pig iron in quantity and 16 per cent. in value.

The foregoing figures suffice to make clear that the term "cement age" has not been applied without reason to the present epoch.

Building Work, Spain.

The *Gaceta* of August 1 notifies that tenders will be opened on September 5, at the "Dirección General de Obras Públicas, Ministerio de Fomento" Madrid, for carrying out the first section of the harbour works at Adra, in the province of Almería. The price is put at 1,357,000 pesetas (about 72,000l.). The *Gaceta* of August 2 notifies that tenders will be opened on August 31 at the "Ministerio de Instrucción Pública y Bellas Artes," Madrid, for completing the building in course of erection for the General and Technical Institute of Granada. The upset price is put at 401,000 pesetas (about 15,000l.).

Although the two foregoing contracts will in all probability be awarded to Spanish firms, nevertheless the carrying out of the works may involve the purchase of some materials out of Spain.

Railway Works, etc., Netherlands East Indies.

According to the *Nederlandsche Staats-courant* of August 1, the Netherlands East Indies Budget for 1911 contains provisions for:—(1) An increase of 350,000 gulden (29,000l.) for building the railway from Bandjar to Parigi; (2) an increase which will now bring the total amount set aside for the erection of the Colonial building at Amsterdam up to 278,800 gulden; (3) an increase of 383,500 gulden (32,375l.) for the construction of steam tramways from Tjikamp to Lemahabang and from Rambipodjo to Poeger.

Abyssinia.

The following information is from the report by H.M. Consul at Adis Ababa (Major C. H. M. Douglas-Wylie, C.M.G.) on the trade of Abyssinia in 1910, which will shortly be issued:— There is an import of ready-made window and doors, etc., by the railway. This import will doubtless increase with the arrival of the rails in Adis Ababa. Wood is scarce, bad, and very expensive in Shoa. The same increase will probably take place in iron girders and building materials generally.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvi.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 4. — **Newcastle-on-Tyne.** — The Education Committee invite from architects practising in Newcastle designs for a senior mixed school and a junior mixed school, each to accommodate 365 children. Assessor nominated by R.I.B.A.

SEPTEMBER 5. — **Stegness, Cottage Hospital.** — Mr. E. R. Sutton, F.R.I.B.A., Assessor. Premium 154, 16s.

SEPTEMBER 9. — **Pontefract.** — SWIMMING-BATHS. — Open to architects of the West Riding of Yorkshire. Particulars from the Borough Surveyor.

SEPTEMBER 12-25. — **Athens.** — COURT OF JUSTICE. — An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 100,000. The Official Gazette may be seen at the Library of the R.I.B.A.

SEPTEMBER 16. — **Manchester.** — LIBRARY AND ART GALLERIES. — Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

OCTOBER 4. — **Haslington R.D.C.** — 100 model houses for Merton Colliery, Durham. 2s per cent, on net cost to successful architect.

OCTOBER 7. — **Barnesley.** — EXTENSION OF BATHS. — The Barnesley T.C. invite drawings for proposed extension of Public Baths. Three premiums are offered. See advertisement in issue of August 11 for further particulars.

OCTOBER 12. — **Coseley.** — Plans are invited for a school to accommodate about 200 children. Particulars from the Education Officers, Coseley, near Bilston.

OCTOBER 14. — **Bristol.** — ALTERATIONS IN THE GRAND HOTEL. — Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.

OCTOBER 30. — **Holland.** — STAINED GLASS WINDOW. — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — **Marlyebone.** — NEW MUNICIPAL BUILDINGS. — Premiums of £1, 75s., 50s. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1. — **City of St. Petersburg.** — MONUMENT TO ALEXANDER II. — Particulars in our issue of August 13, 1910.

NOVEMBER 30. — **Cardiff.** — TECHNICAL INSTITUTE. — The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to other competitors. Mr. J. S. Gibson, assessor.

DE NOVEMBER 30. — **Hastings.** — EAST SUSSEX HOSPITAL. — The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in this issue for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

DECEMBER 29. — **Glasgow.** — DESIGN FOR A BRIDGE. — Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 31, 1912. — **Australia.** — DESIGNS FOR FEDERAL CAPITAL CITY. — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of July 7 for further particulars.

JULY 1, 1912. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf.

NO DATE. — **Nottingham.** — BAPTIST CHURCH AND PREMISES. — Limited to Nottingham architects. Particulars from Messrs. Rorke & Jackson, solicitors, King-street, Nottingham.

NO DATE. — **Rodele Infirmary.** — EXTENSIONS. — Assessor, Mr. Alex. Graham, F.R.I.B.A.

NO DATE. — **Salford.** — Extension of office accommodation on warehouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford. Limited to architects practising in Salford and district only.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 25. — **Southsea.** — SHOP, ETC. — For altering existing premises and building shop, show-

rooms, and stores, for Messrs. S. Sperber & Sons. Plans and specifications seen and quantities from the architects, Messrs. Rake & Cogswell, Prudential-buildings, Portsmouth.

AUGUST 26. — **Ecceles.** — HOUSES. — Erection of three houses. Mr. Luke Barlow, Hancover-chambers, 8, King-street, Manchester.

AUGUST 26. — **Frindsbury.** — ALTERATIONS. — Execution of alterations to the teachers' dwelling-house. Specifications and plans by the Committee's Architect, Mr. Wilfrid H. Robinson, of Carlton House, Westminster, seen with Mr. R. A. Arnold, The Priory, Rochester, Kent.

AUGUST 26. — **Mallaig.** — ADDITIONS. — For additions to public school at Mallaig. Plans seen, and quantities from Mr. J. G. Falconer, architect, Fort William, Scotland.

AUGUST 26. — **New Tredegar.** — URINAL. — Erection of a four-stall public urinal at the Workmen's Hall. Plans and specification with the Council's Surveyor, Mr. J. H. Lewis, A.M.Inst.C.E., Blackwood, Mon.

AUGUST 28. — **Exeter.** — CASING. — Construction of iron caging at the police-station. Specifications from Mr. E. J. A. Christie, Market-place, Exeter, Devon.

AUGUST 28. — **Altofts.** — CORN CHAMBER. — Erection of a corn chamber. Plan and specification at the D.C. Office, Altofts.

AUGUST 28. — **Exeter.** — SEWER. — Construction of a tank sewer in Hennebeige's system of ferro-concrete at Chaplin-road, Exeter. Drawing seen, and specifications and quantities, on deposit of 2l. from Mr. Theo. Henry Yabbicom, M.Inst.C.E., City Engineer, 63, Queen-square, Bristol.

AUGUST 28. — **Cardiff.** — VESTRY, ETC. — Erection of a vestry and heating chamber. Plans and specifications from the Rev. D. T. Evans, 5, Eton-place, Cardiff.

AUGUST 28. — **Kinross.** — MANSE. — Erection of a manse at Alvie. Plans and specifications with Mr. A. Cattnach, architect, Kinross, Scotland.

AUGUST 28. — **Agnes.** — SHOP. — Erection of a shop. Plans and specifications from Messrs. R. H. and E. W. Tonkin, architects and surveyors, Tregony.

AUGUST 28. — **Souththorpe.** — ADDITIONS, ETC. — Alterations and additions to the latrine buildings at the Church of England schools. Plans and specifications on deposit of 10s. from Messrs. W. S. Walker, S.R.I.B.A., town, architects and surveyors, 77, Lowgate, Hull.

AUGUST 29. — **Cambridge.** — ALTERATIONS. — Repairs and alterations to Nos. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

AUGUST 29. — **Cambridge.** — ALTERATIONS. — Repairs and alterations to Nos. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756,

BUILDING—continued.
The data given at the commencement of each paragraph is the latest date when the tender, or names of those willing to submit tenders, may be sent in.
SEPTEMBER 21. — **Borough Surveyor, Town Hall, Hammer-**
SEPTEMBER 21. — **Ellesmere Port.** — **SCHOOL.** —
rection of a new elementary school. Plans and
specifications seen, and quantities, on deposit of
1s. from Messrs. Deacon & Horsburgh, archi-
tects, 12, St. George's-crescent, Liverpool.
SEPTEMBER 21. — **Maldon.** — **POLICE-STATION.** —
rection of a police-station. Drawings, specifica-
tions, and form of contract seen, and quantities,
deposit of 5s., from the County Architect,
Mr. F. Whitmore, Duke-street, Chelmsford.
SEPTEMBER 21. — **Neston.** — **ADDITIONS, ETC.** — For
new handicraft and cookery centres, and altera-
tions to the Council school. Plans and specifica-
tions seen, and quantities, on deposit of
1s. from Messrs. Deacon & Horsburgh, archi-
tects, 12, St. George's-crescent, Liverpool.
SEPTEMBER 21. — **Langfield, Driffield Hall.** — **Erection**
new drill hall premises. Drawings, specifica-
tions, and conditions with Messrs. Jarvis &
Chadwick, architects to the Association, 10, Queen
no-s-gate, Farnborough, S. Plans and quantities
seen, and tender from Messrs. Robinson & Rood,
quantity surveyors, 8, New-cour, Carey-street,
London E.C.4, on deposit of 1s. 1s.
SEPTEMBER 21. — **Bedford.** — **AMBULANCE.** — For the
erection of lavatories, water-closets, etc., at
Basford Union Workhouse. Architect, Mr. A. G.
Barnes, 630, Radford-road, Old Basford.
SEPTEMBER 21. — **Blyth.** — **HOUSES.** — Large number of
all houses required to be built. Estate Office,
11, Northumberland-street, Newcastle-on-Tyne.
SEPTEMBER 21. — **Grangah.** — **HOUSES.** — Erection of
two houses. Quantities from Mr. J. W. Wm.
and specifications from Mr. J. E. Gros-
venor, Newcastle-on-Tyne.
SEPTEMBER 21. — **Ferryhill.** — **CHURCH.** — Erection of
Independent Methodist church at Dean Bank.
Plans and specifications from Mr. J. E. Gros-
venor, architect, Durham-road, Finsden-hill,
Ferryhill.
SEPTEMBER 21. — **Grays.** — **COTTAGES.** — The Stepney
adrians invite tenders for two cottages at
Hornes, near Grays, Essex. See advertisement
in this issue for further particulars.
SEPTEMBER 21. — **Haslemere.** — **DEMOLITION.** — For the
demolition of the old toll bar house and two ad-
joining cottages. Particulars from the Borough
Surveyor, 1, Salisbury-street, Haslemere.
SEPTEMBER 21. — **South Kirby.** — **HOUSES.** — For build-
ing twenty houses. Plans with Mr. C. H.
Barnes, Market-hill, Barnsley.
SEPTEMBER 21. — **Wedgar.** — **ALTERATIONS.** — For
alterations to Wesley Chapel. Quantities and
particulars from Messrs. La Trobe & Weston,
I.L.B.A. architects, 44, Corn-street, Bristol.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 21. — **Great Yarmouth.** — **HEATING**
heating the Free Library and Museum.
Plans and specifications from Mr. J. J. Cook,
Borough Surveyor, Town Hall, Great Yar-
mouth.
SEPTEMBER 21. — **London.** — **ECONOMISER.** — Erec-
tion of an economiser for Public Baths, Latch-
ford-road, Battersea. Plans and specification at
Town Hall, Lavender-hill, S.W. Mr. W. R.
Wilkins, Town Clerk.
SEPTEMBER 21. — **Leeds.** — **CHIMNEY.** — Construction
of chimney and flue at the Destructor Works.
Specifications and drawings seen, and quantities
on deposit of 1s. from Messrs. M. Inst.C.E., City
Engineer, Municipal Buildings, Leeds.
SEPTEMBER 21. — **Bradford.** — **TANK WORKS.** — For
erection of a new sludge disposal works, of a
unit of cast-iron tank work. Particulars
on deposit of 1s. from Mr. Joseph Garfield, A.M.Inst.C.E.,
City Engineer, Bradford.
SEPTEMBER 21. — **Wicklow.** — **BRIDGES.** — The
Wick and South-Eastern Railway Company
tenders for the reconstruction of three
sees carrying the railway over the Ovoca
Anglim Rivers, near Woodenbridge, Co.
Wick. Plans and specification seen, and
quantities from the Chief Engineer, No. 52,
St. Andrew's Dublin.
SEPTEMBER 21. — **Woodenbridge.** — **BRIDGES.** — Re-
construction of three bridges over the Ovoca
and Anglim rivers, near Woodenbridge, Co. Wick.
Plans and specification seen, and quantities
from the Chief Engineer, No. 52, West-
moreland, Dublin.
SEPTEMBER 21. — **Bedford.** — **RESERVOIR.** — Con-
struction of filters and service reservoir. Quan-
tities from the engineer, Major Hector Tulloch,
R.E., at his office, No. 28, Victoria-street,
London, S.W., on deposit of 1s.
SEPTEMBER 21. — **Last Cowes.** — **RESERVOIR.** —
rection of a ferro-concrete reservoir (Kahn
type). Plans and specifications with Mr.
E. B. Barton, Surveyor, Town Hall, East
Cowes, I.W. Deposit of 2s.
SEPTEMBER 21. — **Llandudno.** — **WATER MAIN, ETC.**
Construction of a surface water main, drains, and
outfall. Drawings and specification seen,
quantities, on deposit of 10s. 6d., from Mr.
T. Ward, Deputy-Engineer, Town Hall,
Llandudno.

* SEPTEMBER 12. — **Basingstoke.** — **HEATING.** —
The Hants C.C. invite tenders for low-pressure
hot-water apparatus at High School for Girls.
See advertisement in this issue for further
particulars.
SEPTEMBER 25. — **Aberdeen.** — **DESTRUCTOR.** — Con-
struction of a refuse destructor. Mr. W. Dyack,
M.Inst.C.E., Burgh Surveyor, Town House,
Aberdeen.
NO DATE. — **Chersterfield.** — **HEATING.** — For new
heating apparatus for the Roman Catholic
schools. Plan and specification from Mr. W.
O'Callaghan, M.S.A., architect, 29, Knifesmith
gate, Chersterfield.
NO DATE. — **Salford.** — **TANKS.** — Supply of two
cast-iron tanks. Specification from the Superin-
tendent, Blackburn-road Balta, Salford.

FURNITURE, PAINTING, MATERIALS,
etc.
AUGUST 28. — **Barrow-in-Furness.** — **PAINTING.**
For painting the verandah and ironwork at the
electricity works. Specification from the Borough
Electricity Engineer, Electricity Works.
AUGUST 28. — **Manlyville.** — **PAINTING, ETC.** —
For painting and repairs of the Salom Chapel
and minister's house. Specification at the
Council school house. Mr. G. Llewellyn Griffith,
106, High-street, Manlyville, Wales.
AUGUST 28. — **London.** — **FENCING.** — Erection at
Grovelands Park, Winchmore Hill, of Jarrah
railing fence and unclimbable wrought-iron
railing. Specification and particulars from the
Council's Surveyor, Mr. C. G. Lawson, C.E.,
Council Offices, Palmer's Green, N. Deposit
of 2s.
AUGUST 29. — **Beverly.** — **PAINTING.** — For paint-
ing portions of the East Riding Lunatic Asylum.
Specification at the Asylum. Mr. C. W. Hobson,
Clerk, New-leigh, Beverley.
AUGUST 30. — **Acrefield.** — **PAINTING, ETC.** — For
cleaning and painting the chapel. Specification
at the Chapel House. Mr. R. H. Gabriel,
Church-street, Roshynedra, Raebon.
AUGUST 30. — **Arclid.** — **PAINTING.** — For painting
outside of Workhouse premises and Infirmary,
for the Guardians. Specification with the
Master of the Workhouse.
SEPTEMBER 2. — **Berwick-upon-Tweed.** — **PAINTING.**
For painting farm buildings on the Cor-
poration estate. Mr. W. J. Boleyn, 42, Hide-hill,
Berwick-upon-Tweed.
SEPTEMBER 2. — **Maldon.** — **PAINTING, ETC.** — For
repainting and repairing the outside of the
Union Workhouse. Specification at the Work-
house Master's Office.
SEPTEMBER 2. — **Nottingham.** — **PAINTING, ETC.** —
For internal cleaning and painting at various
sub-police-stations and at the Central Station,
Gulldhall. Specifications, quantities, and form
of tender from the City Architect, Mr. F. B.
Lewis, Gulldhall, on deposit of 1s. 1s.
SEPTEMBER 4. — **Lancaster.** — **PAINTING.** — For ex-
ternal painting of the main block of the Institu-
tion buildings, for the Committee of the Royal
Albert Institution, Lancaster. Mr. S. Keir,
Secretary.
SEPTEMBER 9. — **Jarrow.** — **PAINTING.** — For paint-
ing at the Primrose-hill Hospital. Specification
from Mr. S. W. A. M. Inst.C.E., Borough
Surveyor, Town Hall, Jarrow.
* SEPTEMBER 18. — **London.** — **E. REPAIRS AND**
PAINTING. — The Poplar Board of Guardians in-
vite tenders for repairs and painting works at
casual wards, St. Leonard's-street, Bromley-by-
Bow, E. See advertisement in this issue for
further particulars.

ROADS, SANITARY AND WATER WORKS.

AUGUST 29. — **Aylesbury.** — **STREETS.** — For
private street works. Plans and specification
seen, and quantities from Mr. Wm. Harold
Taylor, Engineer, Surveyor, Town Hall,
Aylesbury, on deposit of 1s. 1s.
AUGUST 29. — **Blackpool.** — **PIPES.** — The Flyde
Water Board invite tenders for the supply of
cast-iron pipes. Specification and quantities
from Mr. J. Cook, Engineer, Sefton-street,
Blackpool.
AUGUST 29. — **Chelmsford.** — **PATIS.** — Repairing
of footpaths in the borough. Specification and
forms of tender from the Borough Surveyor's
Office, 16, London-road, Chelmsford.
AUGUST 29. — **Cowes.** — **MATERIAL.** — Supply of
granite and road material. Specification from
Mr. John W. Webster, Engineer and Surveyor
to the Council, High-street, Cowes.
AUGUST 29. — **Gateshead.** — **STREETS.** — For
paying various streets. Plans and specifications
seen, and quantities from Mr. N. P. Patinson,
Borough Engineer, Town Hall, Gateshead.
AUGUST 29. — **London.** — **STREETS.** — For private
street works at Wimbledon. Plans and specifi-
cations from the Borough Surveyor, Town Hall,
London.
AUGUST 29. — **Shoreham-by-Sea.** — **SEWERS, ETC.** —
Construction of sewers, etc. Plans seen, and
specifications and quantities, on deposit of 1s.
from Mr. A. W. Nye, Town Surveyor,
Town Hall, Shoreham.
AUGUST 29. — **Thornton Hough.** — **SEWAGE.**
Construction of sewers and sewage disposal
works. Drawings and specification and quan-
tities with the engineers, Messrs. Priest & Ellis,
M.M.Inst.C.E. 13, Harrison-street, Liverpool.
Quantities on deposit of 2s. 2s.

AUGUST 30. — **Aylesbury.** — **CLINKER.** — Supply of
washed and graded clinker. Particulars from
Mr. Wm. Harold Taylor, Engineer and Surveyor,
Town Hall, Aylesbury.
AUGUST 30. — **Carshalton.** — **GRANITE.** — For
supply of granite, etc. Particulars from the
Surveyor, Mr. W. Willis Gale, A.M.Inst.C.E.,
The Square, Carshalton.
AUGUST 30. — **Dundee.** — **KERR, ETC.** — Supply of
granite steps, kerb for waste, cope, etc., for
Linthaven Reservoir. Specification and form of
tender from Mr. George Baxter, Engineer and
Manager, 99, Commercial-street, Dundee.
AUGUST 30. — **Eggington.** — **SEWAGE.** — Laying of
socket pipe sewer. Specifications from Sur-
veyor, Mr. F. W. Bullock, Eggington, Derby.
AUGUST 30. — **London.** — **STREETS.** — For private
street improvements at Palmer's Green and
Southgate. Plans and specification, on deposit
of 2s., from the Council's Surveyor, Mr. C. G.
Lawson, C.E., Council Offices, Palmer's
Green, N.
AUGUST 30. — **Ramsgate.** — **CEMENT.** — Supply of
portland cement. Schedule and form of tender
from Mr. T. G. Taylor, Borough Engineer and
Surveyor, Municipal Offices, Ramsgate.
AUGUST 30. — **Swansea.** — **SEWAGE.** — Construction
of sewers. Plans and specifications from
Mr. T. T. Williams, Engineer, Alexander-road,
Swansea.
AUGUST 31. — **London.** — **GRANITE.** — Supply of
granite steps, kerb for waste, cope, etc., for
the Workhouse, Union-road, Leytonstone, N.E. Mr.
T. Smith, Clerk, Board-room, Union-road,
Leytonstone, N.E.
AUGUST 31. — **Tynemouth.** — **SEWER.** — Construction
of pipe sewer near Seaton Delaval. Plans
and specifications with Mr. A. S. Dinning, 21,
Ellison-place, Newcastle-on-Tyne.
SEPTEMBER 2. — **Faversham.** — **GRANITE.** — Supply
of granite. Apply to Mr. G. Tassell, Town
Clerk, 20, West-street, Faversham.
SEPTEMBER 2. — **Kirkcaldy.** — **ROADS.** — For
making roads, etc. Plan seen, and specification
and quantities from the Borough Surveyor.
SEPTEMBER 2. — **Saffron Walden.** — **SEWAGE.** —
For private street works. Plans and specifi-
cations from the Borough Surveyor, Mr. A. H.
Forbes, Hill-street, Saffron Walden.
SEPTEMBER 2. — **Yorkshire.** — **DRAINAGE.** — For
surface drainage works at Steelton and Cowling.
Plans seen, and specification and quantities, on
deposit of 1s., from Mr. F. G. Carpenter, West
Riding Surveyor, County Hall, Wakefield.
SEPTEMBER 4. — **Bromley.** — **MATERIAL.** — For
supply of road materials. Mr. E. Haslehurst,
Clerk, Council Offices, Park House, Bromley,
Kent.
SEPTEMBER 4. — **Finchley.** — **SLABS.** — Supply of
paving slabs. Drawings and specification with
the Surveyor to the Council, Mr. C. J. Jenkin,
M.Inst.C.E., Council Offices, Church End,
Finchley, N. Deposit of 2s.
SEPTEMBER 4. — **Plumby.** — **SEWER.** — For con-
struction of a sewer. Particulars from Mr. J. B.
Wilson, A.M.Inst.C.E., Grecian Villa, Cocker-
mouth.
SEPTEMBER 4. — **Mansfield.** — **STREETS.** — For
making-up streets. Specification and drawings
seen, and quantities from Mr. T. F. Collinge,
A.M.Inst.C.E., Borough Engineer and Surveyor,
Exchange-row, Mansfield.
SEPTEMBER 4. — **Portsmouth.** — **ROADS.** — For
making-up roads. Specifications from the Sur-
veyor, Mr. A. Taylor Allen, 46, St. Andrew's-
road, Portsmouth-by-Sea. Deposit of 1s. 1s.
SEPTEMBER 5. — **Fenbrooke.** — **SEWAGE.** — Construc-
tion of brick or pipe sewers. Plans and specifi-
cation from Mr. J. C. Manly, Clerk, Town Hall,
Ball's Bridge, Fenbrooke, Co. Dublin, Ireland.
SEPTEMBER 6. — **Morley.** — **PAVING.** — For paving
of the carriageway and crossings. Specification
and quantities from Mr. W. E. Putman,
A.M.Inst.C.E., Borough Engineer and Surveyor,
Town Hall, Morley.
SEPTEMBER 7. — **Hendon-in-Arden.** — **SEWAGE.** —
Construction of a cast-iron tank sewer and other
works. Drawings and specification may be seen,
and quantities, on deposit of 3s. 3s., from the
engineers, Messrs. Willcox, Raikes, & Reed, 63,
Temple-row, Birmingham.
SEPTEMBER 7. — **Stratford-on-Avon.** — **SEWAGE.** —
Construction of stoneware pipe sewers. Draw-
ings and specification seen, and quantities, on
deposit of 3s. 3s., from the engineers, Messrs.
Willcox, Raikes, & Reed, 63, Temple-row, Bir-
mingham.
SEPTEMBER 9. — **Walden.** — **SEWAGE.** — For sewer-
ing a portion of the East Ward. Specifications
and quantities from the Engineer and Surveyor,
Mr. J. Howard, Town Hall, Walden, on de-
posit of 2s.
SEPTEMBER 9. — **Dagenham.** — **SEWAGE.** — Construc-
tion of stoneware pipe branch sewers.
Plans, specification, and particulars from Mr.
W. J. Grant, Surveyor to the Council, Victoria-
chambers, Romford.
SEPTEMBER 11. — **Stanley.** — **STREETS.** — Formation
of private streets. Plans and specifications seen,
and quantities from Mr. J. Routledge, Surveyor,
Stanley, Durham.
SEPTEMBER 21. — **Morocco.** — **ROAD.** — For the con-
struction of a road from the lighthouse at Tan-
gier to the Custom House. Specification with
the Commercial Intelligence Bureau of the Board
of Trade, 78, Basinghall-street, London, E.C.
A deposit of 40s.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
CTOR OF GOVERNMENT BUILDING WORKS.....	Govt. of New South Wales ...	1,000l. per annum	Aug. 28

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDERS' STOCK, PLANT, AND MACHINERY, ELTHAM.—On the Premises	H. W. Smith	Aug. 23
*DEALS, BATTENS, BOARDS, TIMBER, ETC.—Great Hall, Winchester House, E.C.	Churchill & Sims	Aug. 30
*STK. OF IRONMGR & MCHT.—Al. Laurie Lead, etc., Co.'s Prems, Laurie Hall, Rounford Mkt.	H. W. Smith	Sept. 1
*STOCK OF GAS AND WATER APPLIANCES.—On the Premises	Fryett, White, & Co.	Sept. 1

LAW REPORTS.

BEFORE THE OFFICIAL REFEREE
(MR. MUIR MACKENZIE).

Contractor's Action against Building Owner:
Minter v. Waldstein.

The hearing of this case was continued last week, it being an action brought by Mr. F. G. Minter, a builder and contractor, against Mr. Charles Waldstein, Professor of Art at Cambridge, from whom he claimed £2,750, the amount payable in respect of a certificate of Mr. Frederick Wm. Foster, an architect, and in respect of a contract made between the plaintiff and the defendant for the carrying out of alterations and additions at Newton Hall, Harston, near Cambridge. Defendant alleged that the work was defective, and counterclaimed against the plaintiff for 10,000 damages.

Mr. Lewis Thomas, K.C., and Mr. G. R. Blanco White (instructed by Mr. V. Bianco White) appeared for the plaintiff; and Mr. Clavel Salter, K.C., and Mr. F. St. John Morrow (instructed by Messrs. Withers & Co.) represented the defendant.

At the conclusion of Mr. Salter's address on behalf of the defendant Mr. Lewis Thomas replied upon the whole case on behalf of the plaintiff, and in the result the learned Official Referee reserved his judgment.

Case under the London Building Act:
Failure to Give Notice.

On July 4 Mr. E. G. Rayson was summoned at the Greenwich Police Court by Mr. Baxter Greig, District Surveyor for Deptford, for failing to give notice for sundry works carried out on the premises of a florist in the Lewisham High-road. The work consisted of removing the decayed wood sill and vertical bars to the side and end of conservatory.

The defence was that the work was only necessary repair, and as such, under sect. 209 of the London Building Act, no notice was required to be given. The magistrate adjourned the case, and has now given a decision in favour of the builder, instructed by Messrs. Marchant, Newington, & Tipper, and Mr. Louis Jacob, F.S.I., A.R.I.B.A., was in court to give evidence in support of the builder, but was not required after the cross-examination of the District Surveyor. Mr. Garland Wall appeared on behalf of the District Surveyor.

PATENTS.
APPLICATIONS PUBLISHED.*

- 10,230 of 1910.—Abson Ercolani: Apparatus for moulding or waving wood or other material.
- 15,274 of 1910.—Charles Fairbank: Tenoning tool and workholder for use therewith.
- 17,412 of 1910.—William T. B. Masters: System of treating the exterior walls of old or new buildings to imitate stone.
- 18,649 of 1910.—Cecil Walton and John Beaumont, Walton: Reciprocating conveyors, screens, or the like.
- 19,635 of 1910.—Charles McRae Grey: Rolling of flanged metal sections.
- 20,149 of 1910.—John Wulstan Twynberrow: Method of and apparatus for mixing the ingredients of concrete and other substances.
- 20,164 of 1910.—Frank Iliff: Heating and ventilating apparatus.
- 20,541 of 1910.—John Jesse James: Stair-rail eyes and rod brackets.
- 22,552 of 1910.—Thomas Benjamin Colman: Revolving doors.
- 25,834 of 1910.—Hermann Cohn: Processes of and devices for manufacturing concrete boards or plates as a substitute for wooden boards or planks.
- 27,855 of 1910.—Hermann Kaye: Hand-rammers for paving purposes.
- 1,732 of 1911.—Ferdinand Burchartz: Apparatus for making hollow building blocks.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

4,569 of 1911.—Heinrich Christophery: Manufacture of handles for doors, windows, and the like.

10,058 of 1911.—Arthur Henry Ehrlert: Sliding window-blinds.

11,308 of 1911.—Gebr. Korting Aktiengesellschaft: Apparatus for creating artificial draught in smoke stacks or chimneys.

11,716 of 1911.—John Daniel Wilcox: Door latches.

SOME RECENT SALES OF PROPERTY:
ESTATE EXCHANGE REPORT.

August 2. By SIMMONDS & SONS.
Watlington, Oxon.—Watcombe Manor Estate, 383 a. 3 r. 8 p., f. 47,270

August 10.—By R. GRAY & SONS.
Whitby, Yorks.—Broadings Farm, 71 a. 3 r. 23 p., f. 1,010
2 and 3, Arundel Houses, f., y. r. 531. 900
1 to 5, Arundel-place, f. 1,580

August 12.—By ALFRED MANSELL & Co.
Hadnall, Salop.—Bradway Farm, 32 a. 2 p., f. 2,555

August 11. By FARBERROTHER, ELLIS, & Co.
Wroughton, Wilts. Hackpen Farm, 302 a. 1 r. 39 p., f. 3,600
Enclosure of meadow land, 26 a. 2 r. 32 p., f. 950
Two accommodation enclosures, 29 a. 3 r. 1 p., f. 1,200

August 15.—By JAMES ELEY.
Butterwick, Lincs.—Butcher's Arms h.b. and 18 a. 3 r. 20 p., f. 1,690
Freiston, Lincs. Freehold arable land, 5 a. 3 r. 1 p., f. 470

August 16.—By WYATT & SON.
Eastergate, Sussex.—Myrtle cottage, 3 a. 3 r. 1 p., f. 340
Yapton, Sussex. Freehold shop and house and two cottages 300

August 17.—By STIMSON & SONS.
Pimlico, 12, Rochester-row, ul. 481 yds., g.r. 221. 10s., yr. 951 700
Stepney, 2 to 8 (even), Garden-st., and 1 to 6, Smith's-pl., f., w.r. 1661. 8s. 275
Kingsland 14 and 16, Essex-st., ul. 571 yds., g.r. 141. 8s., w. and c.r. 1351. 4s. 320
New Malden.—Poplar-gr., freehold plot. 100

By VENTON, BULL, & COOPER.
Kensish Town.—Alfred-rd., f.g. rents 1261. 1s., reversion in 33 and 54 yrs. 4,270
Peckham.—Albert-rd., f.g. rents 241., reversion in 34 and 53 yrs. 515
Gordon-rd., f.g. rents 721., reversion in 57 yrs. 1,610
Norwood. Birkbeck-rd., f.g. rents 101., reversion in 53 yrs. 225
Norwood-rd., f.g. rents 301., reversion in 56 yrs. 255
St. Mary's rd., f.g. rents 221. 10s., reversion in 53 yrs. 455
Barnouley.—Gallewall-rd., f.g. rents 241., reversion in 33 yrs. 620
Sutton, Surrey.—Holly villas, f.g. rents 201., reversion in 53 yrs. 400
Plaieston. Plaieston rd., f.g.r. 301., reversion in 54 yrs. 1,430
Canterwell. Wyndham-rd., f.g. rents 801. 1s., reversion in 52 yrs. 1,360
Acton.—Churchfield-rd., f.g. rents 601., reversion in 55 and 57 yrs. 620
Apley-ter., f.g. rents 601., reversion in 37 yrs. 1,592
Penge. Woodbine-gr., f.g. rents 601., reversion in 56 yrs. 1,270
Heme hill. Railway-rd., f.g. rents 971. 10s., reversion in 56 yrs. 2,580
Holloway.—Davenant-rd., f.g. rents 2241. 10s., reversion in 44 yrs. 5,330
Hammersmith. Richmond-st., f.g. rents 781. 10s., reversion in 58 yrs. 1,630
Putney. Dismell rd., f.g. rents 261., reversion in 50 yrs. 620
Harrow. Roxborough-rd., f.g. rents 201., reversion in 50 yrs. 110
Totterton. High-lk., f.g. rents 351., reversion in 57 yrs. 819
Battersea.—Battersea Park-rd., f.g. 71, reversion in 39 yrs. 1-5
Stoke Newington.—Brighton rd., f.g. rents 251. 8s., reversion in 53 yrs. 620
Or ydon. Cherry Orchard rd., Surrey Arms rd., f.g. 1201. 2,590

Contractors used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.r. for unexpired term; p.a. for per annum; yrs. for years; h. for hms; st. for street; rd. for road; sq. for av. for avenue; gns. for gardens; yd. for yard; gr. for grove; h.b. for beerhouse; p. for public-house; o. for offices; s. for shops; ct. for court.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); the relating to advertisements and other exclusive business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications, and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at his office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay or inconvenience may result from inattention to this.

Any communication to a contributor to write an article or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, which, if unsatisfactory, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of proof of an article in type does not necessarily imply acceptance.

N.B. Illustrations of the First Premiated Design for any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

*Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.		
Best Stocks	Per 1000 Alongside, in River.	2 s.
Picked Stocks	.....	2 7
Per 1000, Delivered at Railway Depot.		
Flattons	.....	16 s.
Best Farnham	.....	13 7
Red	.....	17 7
Best Red Pressed	.....	18 7
Random Facing	.....	15 17
Best Blue Pressed	.....	15 17
Staffordshire	.....	10 17
Do. Bullnose	.....	10 17
Best Staffordshire	.....	13 7
Fire Bricks	.....	14 7
GLAZED BRICKS.	.....	14 7
Best White and	.....	17 7
Ivory Glazed	.....	17 7
Stretchers	.....	17 7
Headers	.....	17 7
Quoins and	.....	17 7
nose, and Flats	.....	18 7
D'ble Stretchers	.....	15 17
Second Quality White and Dipped Salt Glazed	.....	41
Per 1000 less than best.		
Thames and Pit Sand	.....	9 p. per yard, delivered
Thames Ballast	.....	5 s. 3 p. per ton, ..
Best Portland Cement	.....	29 0 p. per ton, ..
Best Ground Blue Lias Lime	.....	19 0 ..

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime 12s. 6d. per yard delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dep.

STONE.		
Per Ft. Cube.		
BATH STONE—delivered on road waggon, at		
Paddington Depot	.....	1
Do. do. delivered on road waggon, Nine Elms		
Depot	.....	1
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggon, at		
Paddington Depot, Nine Elms Depot, or		
Pimlico Wharf	.....	2
White Basebed, delivered on road waggon, at		
Paddington Depot, Nine Elms Depot, or		
Pimlico Wharf	.....	2
Per Ft. Cube, delivered at Railway Depot.		
Ancestor in blocks	.....	8 d.
Beer in blocks	.....	1 6
Greenhill in blocks	.....	1 10
Derby Dalm. stone	.....	2 4
Red Corsehill in blocks	.....	2 3

YORK STONE.—Best Quality.
Per Ft. Cube, Delivered at Railway Depot, .. 21
Scrapped random blocks 2
Per Ft. Super., Delivered at Railway Depot, .. 2
6 in. sawn two sides landings to sizes (under 40 ft. super.) 2
6 in. rubbed two sides ditto, ditto 2
0 in. ditto, ditto, ditto (two sides) 2
2 in. to 2 1/2 in. sawn one side slabs (random sizes) 0
1 1/2 in. to 2 in. ditto, ditto 0

VARNISHES, &c.

[illegible]

CONWAY.—For erection of a house. Messrs. R. Davies & Son, L.R.L.B., architects, Bangor.
W. Hughes £911 15 0
D. Roberts 816 3 6
R. Roberts & Son 762 8 0
Evans & Trilchard 721 0 0

DURHAM.—For alterations and additions to High Springwell House. Mr. H. T. Gradon, architect, Market-place, Durham.—
Beavers & Clark. £670 3 6
T. Coates, jun. 592 17 6

GILLINGHAM.—For addition of bathroom, etc., to 85, Duncan-road, Gillingham, for the Misses Waite.
Mr. Ernest J. Hammond, C.E., M.S.A., of Gillingham, architect.—
H. E. Phillips £115
T. Cornelius & Sons 112

GILLINGHAM.—For erection of a chapel. Mr. Ernest J. Hammond, architect, 21, Balmoral-road, Gillingham.—
Snyder £5,637
Foster 5,880
Hallard 5,466
Tonx 5,343
May 5,310
Lewis & Son 5,290
Ington & Son 5,275
Moss & Sons 5,260
Skinner 5,250

GILLINGHAM.—For the making of roads and laying of sewer and surface-water drains to building estate, Mill-road, Gillingham, for Messrs. Stover, Stedman, and others. Mr. Ernest J. Hammond, C.E., M.S.A., architect and surveyor, Gillingham.—
Ington & Son £1,745 0 1
T. Adams 1,429 10 0
J. C. Treumann 1,415 0 0

GILLINGHAM.—For erection of a villa at corner of Rock-avenue and St. John's road, Gillingham, Kent, for Miss G. Mackay. Mr. Ernest J. Hammond, C.E., M.S.A., of Gillingham, architect.—
H. E. Phillips £284
T. Cornelius & Sons 733

HITCHIN.—For Hitchin Brand-street Wesleyan Church. Messrs George Buines & Son, architects, 5, Clement's Inn, Strand, W.C.
J. Willmott & Sons £487 10 0
F. Newton 410 0

LEICESTER.—For new cardroom building for Mr. T. Fielding Johnson. Messrs. Fair & Herbert, architects, Leicester and Coventry.—
Wellerman Bros. £2,622
A. & W. Chambers 2,388
Hardington & Elliott 2,268

LLANFAIR (Glam.).—For the erection of a small new Council school at Llanfair, near Cowbridge, for the Glamorgan Education Committee. Mr. D. Fugh-Jones, F.S.I., County Architect, Cardiff.—
W. A. Jones, Barry* £1,400

LLANGAN (Glam.).—For the erection of a new Council school at Llangan, near Bridgend, for the Glamorgan Education Committee. Mr. D. Fugh-Jones, F.S.I., County Architect, Cardiff.—
Vickery Bros., Barry Dock* £2,544 15 2

MARKYATE.—For sewage works. Messrs. Elliott & Brown, A.M.M.Inst.C.E., Burton-buildings, Parliament-street, Nottingham.—
Exors. of J. Arundel £4,711 19 0
J. Dickson 4,339 15 2
T. W. Pedrette 4,341 10 0
W. Muirhead & Co., Ltd. 4,190 0 0
D. T. Jackson 4,104 17 0
R. C. Drever 3,816 0 0
R. C. Crawford & Co. 3,809 7 6
G. Bell & Sons 3,766 0 0
A. H. Price & Co. 3,746 0 0

OSWESTRY.—For erection of ten almshouses. Mr. G. W. Lacey, Borough Engineer and Surveyor, Oswestry.—
W. Felton £1,398 0 0
T. Huxley 1,350 0 0
J. Higgins 1,500 0 0
W. H. Thomas & Sons, Ltd. 1,475 0 0
W. Rose 1,448 10 6

PORTSMOUTH.—For erection of a public convenience. Mr. P. Murch, Borough Engineer and Surveyor.—
F. V. Lenton £460 0 0
E. THI 421 8 0
J. Crockerell 421 0 0

POSSILPARK.—For erection of a library, for the Corporation of the City of Glasgow. Mr. G. Simpson, architect, 239, St. Vincent street, Glasgow. Quantities by Messrs. Shearer & Murr, 219, St. Vincent street, Glasgow.—
Mason: F. Rodger, Maxwell road* £1,853 9 1
Wrights: J. Baxter & Sons, 20, Catherine-street* 1,857 17 0
Plumber: J. L. Arnot, 204, Bath street* 147 18 0

Plasterers: G. & R. Wenys, 39, Victoria-road* 206 7 11
Steel: Fleming Bros., 65, Bath-street* 459 4 7
Concrete: Hamilton & Co., 7, Surrey-street* 534 4 8
Slaters: Hamilton & Co., 7, Surrey-street* 52 0 0
Glaziers: G. & J. Rae, 21, Ingram-street* 282 15 1
Fitters: Keen & Wardrop, 167, Bath-street* 320 13 3
[All of Glasgow. Since plans were adopted a basement has been allowed for.]

WALTHAMSTOW.—For painting, etc., at the Technical Institute, for Essex Education Committee. Mr. F. Whitmore, County Architect, Chelmsford.—
E. Fuller & Son £310 0 0
D. W. Lucas 385 0 0
E. C. Rogers 284 17 0
A. G. Barton 262 0 0

WELLS.—For additions and alterations at the boys' school. Mr. A. J. Pictor, architect, Bruton, Somerset.—
Broad & Sons £2,830
Sheppard 2,518
W. Webb 2,298
F. S. Webb 2,263
Chancellor & Sons 2,120
J. E. Fursland 2,100
D. R. Dunthorn 2,098

WHITEHAVEN.—For erection of a ferro-concrete bridge over the River Ehen, for the Whitehaven R. District Council. Mr. George Boyd, Engineer, Queen-street, Whitehaven.—
C. Walton, Moresby, Whitehaven* £350

*WITHYCOMBE (Devon).—For erection of houses at Withycombe, for Mr. W. Sage, of Withycombe. Mr. G. Beavis, architect, 4, Johnson's-pl. Exmouth.—
H. J. Gay Lang £799 0 0
R. B. Ponsford 788 10 0
F. Greenaway & Son 730 0 0
[All of Exmouth.]

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Limit
(Incorporating the Ham Hill Stone Co. and O. Trank & Son The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic L. Asphalte Company (Mr. H. Glenn), Office, 4 Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and mill rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

LITHOGRAPHERS AND PRINTERS.
Estate Plans and Particulars of Sale promptly executed.

4 & 5, East Harding-st., Fetter-lane, E.C.

JOINERY,

of every description and in any kind of Wood.

CHAS. E. ORFEUR, LTD.

ESTIMATES
ON APPLICATION.
COLNE BANK WORKS,
COLCHESTER

Telephone: 6186. Telegrams: "Orfeur, Colchester."

PILKINGTON & CO.

(ESTABLISHED 1838).

DEPTFORD WHARF,

190 & 192, CREEK ROAD, DEPTFORD, S.E.

Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.

Polonceanu Asphalte.

PATENT ASPHALTE AND FELT ROOFING.

ACID-RESISTING ASPHALTE,

WHITE SILICA PAVING

SEYSEL ASPHALTE (Direct from the Mines).

JOHN WILLIAMS & CO.

FOR ...

SLATING, TILING.

Dinorwic Bangor, Portmadoc, Cornish
"Excelsior" Green Slates, etc.

HAND-MADE, SAND-FACED TILES,
ETC.

Slatework of every Description.

DINORWIC WORKS, ROTHERHITHE, S.E.

ALSO AT DEPTFORD,
LIVERPOOL, BRISTOL,



Chief Offices: 352 to 364, EUSTON ROAD, LONDON, W.W.

GLASGOW, FALKIRK,
BELFAST, & DUBLIN.

THE BUILDER

VOL. CL—No. 3573.

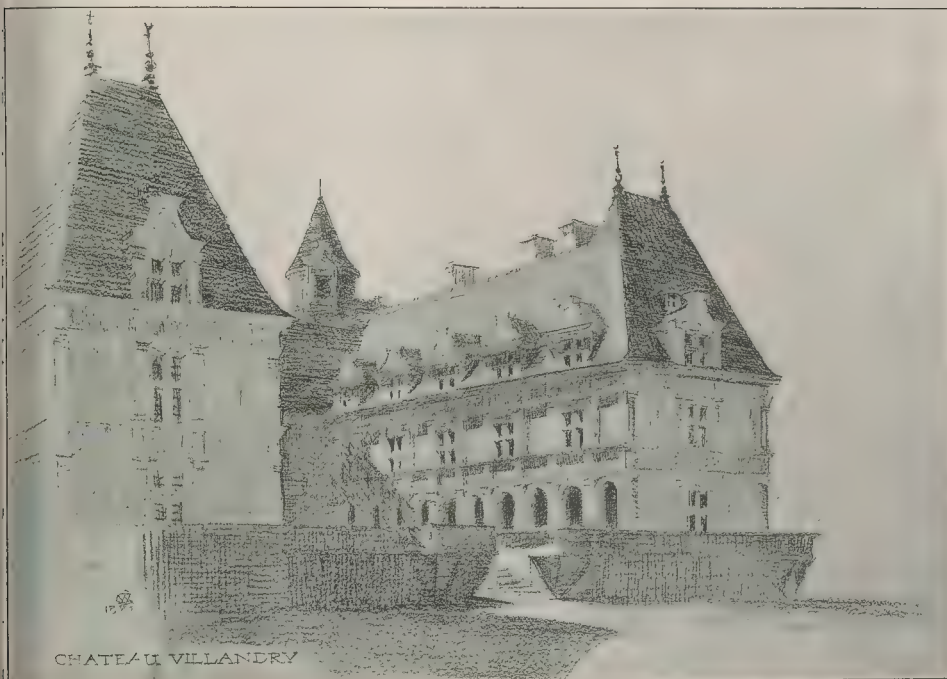
SEPTEMBER 1, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
DERN SHIPS AND THE ARCHITECT	235	MONTHLY REVIEW OF CIVIC DESIGN (continued):—		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	258
THE STORY OF THE BRIDGE. IV. IN THE MIDDLE	237	THE GROWTH OF A TOWN	249	PATENTS	259
GES (WITH ILLUSTRATIONS).....	237	THE MODEL PLANNING OF A SEASIDE SUBURB		SOME RECENT SALES	260
ARCHITECTURAL ASSOCIATION. FORTY-SECOND		(WITH PLAN)	251	PRICES CURRENT.....	260
ANNUAL EXCURSION (WITH ILLUSTRATIONS)	239	NOTES (WITH PLAN)	251	TENDERS	261
IV SECONDARY SCHOOL (WITH ILLUSTRATIONS)	242	THE BUILDING TRADE:—			
GENERAL NEWS	242	BUILDING PLANT IN PRETORIA (WITH ILLUSTRATIONS)	252		
COMPETITION NEWS (WITH ILLUSTRATIONS)	243	GENERAL BUILDING NEWS.....	253		
EDITORIAL SUMMARY.....	246	PROJECTED NEW BUILDINGS IN THE PROVINCES	254		
STING	246	HUTCHESON'S GIRLS' GRAMMAR SCHOOL (WITH ILLUSTRATIONS)	255		
RESPONSE	246	THE ROAD BOARD FUNDS	256		
ES TO ILLUSTRATIONS	246	LEGAL COLUMNS	256		
FT YEARS AGO	246	LONDON COUNCILS	257		
MONTHLY REVIEW OF CIVIC DESIGN:—		TRADE CATALOGUES	257		
THE LATEST "CIVIC ART" (WITH ILLUSTRATIONS)	247	FOREIGN AND COLONIAL	257		

Illustrations.

SKETCHES WITH THE ARCHITECTURAL ASSOCIATION.
BY MR. W. CURTIS GREEN, F.R.I.B.A.:—
CHATEAU AZAY-LE-RIDEAU.
CHATEAU BLOIS.
CHATEAU BOTAL, LOCHES.
CHATEAU DU MOULIN.
CHATEAU DU CHAUMONT.
"THE STORY OF THE BRIDGE" IV.—
THE VALENTRE BRIDGE, CAHORS.
BRIDGE OVER THE THOUET, ST. GÉNÉROUX.



The Chateau Villandry. (A.A. Excursion. See page 239.)

MODERN SHIPS AND THE ARCHITECT.

MR. BURTON T. BEACH, writing recently in the *New York Herald*, presents to our consideration a variety of seemingly old but, one must admit, immutably probable pictures of the mammoth "leviathan" ocean greyhound or "floating hotel," as it willvelop during the next few years. The conception of a vessel twice the size of the *Mauretania* is, if possible at all, quite easy of achievement, since

structures of the kind have long ago outstripped the human scale. They may increase in size now, and no one be really astonished, until lack of adequate harbourage puts a period to their growth.

They are the material embodiment of an age whose god is the god of Transit, whose temple is naturally the hotel. In the liner, as it pursues its inhuman way, combining the satisfaction of his desire for luxury with that of the necessity

for speed, the modern finds his true Ark of our later Covenant, which gives man sovereignty in all material things on the condition that his soul shall be ruled thereby in its turn. It is not unlike the contract which was made by Dr. Faustus. And in this agreement the architect in his capacity as ingenious designer of hotels, clubs, and the like has his place, his function.

In the Ark of Material Comfort, then, he is increasingly to have scope for

the exercise of his gayest ingenuity. Rivalry between the companies in the matter of luxury may easily surpass the possibility of further aggrandisement in bulk. The items which make the prospect bizarre would be what is called sensational were they not essentially so absurd. For if humour lies in the association of the incongruous, the idea of a swimming-bath on board a ship is surely ridiculous. The news that one company contemplates increasing from 4,000*l.* to 10,000*l.* its annual outlay for the wireless service to the papers published on board seems, and is, a much tamer proposal.

These vessels, structures, accretions—"things"—have already lost most resemblance to the world-old conception for which the word is "ship." As far as the reception-rooms, lounges, corridors are concerned, the cambert-batter which formerly kept things of necessity "ship-shape" has almost disappeared. A spacious staircase, with lifts on either hand, supplants the old companion-way. Dining-rooms and drawing-rooms, bars, smoke-rooms, *cafés*, lounges, libraries, and writing-rooms, hardly satisfy the requirements for which, but a decade ago, the simple saloon, drawing and smoking rooms sufficed. And to accommodate them all the *Aquitania* is to have seven decks. Somewhere within the walls of the new White Star liner *Olympic* there is to be a gymnasium fitted with the completeness which Americans demand and the swimming-bath we mentioned above big enough for a free dive.

For with increasing size comes immunity from the terrors of the sea, of which men as a consequence begin to find the value. A voyage which formerly passed in fasting or on a diet of gruel and tea, is now consumed in a close succession of prodigious meals, is more likely to end in the desolation engendered by surfeit than in the exhilaration of unwonted fitness and the incitement of a fresh beginning. Hence the need for exercise. All development tends to reproduce the conditions of dry land. There is the captain controlling his not inconsiderable polity by telephonic communication. There are the various state departments—the purser, for instance, with his clerks. There are the citizens, upper and middle classes, and away down unseen in the stokehold sweat the grimy submerged. The naval architect is a civic designer of a compact and complex city, and he is beginning to find in this city, as it grows in size, wealth, and security, that more than space, economy, and strength is demanded of him. Following the analogy of the cities of the land, he finds that an increasing measure of comfort and adornment is required. For this he must call in the architect on land, whose cities centuries ago attained the stage he is just reaching, although in another aspect, that of organisation, economy of means, and a sense of entity, his achievement is far from being equalled.

It may be objected that the adornment of ships is no new thing; that indeed ships have been beautified in a decreasing degree as the age of the Argosy receded. That at no time before this present have vessels so unmitigatedly utilitarian been

permitted to brave the seas. And this is undeniably true. In contact at times with the land on which, after all, they are built, ships have of necessity partaken of the spirits of their ages. At first they are as some mythic beast, and eyes are painted on them that they may see the way, though there is no path; they are hung about with charms against the reputed demons of the deep. They are built in traditional shapes, as are the static structures of their time. As these, they become fairer to the eye, are formed to the mind of man rather than in fear of the gods. At last almost every surface timber is shaped into some vain form faintly reminiscent of aboriginal myth, or merely in keeping with their fully-developed sex, for they have now acquired the sex with which the mariner, unwilling Benedict for longer and longer spells, would endow the thing he serves.

Suddenly a new barbarism sweeps away with iron utility the faint and moribund forms. Pale-metallic man sails, as the arbiter of civilisation, if you please, wherever he will. "Dirty British steamer" sinks the "stately Spanish galleon." "Quinquirame of Nineveh" has rotted long ago. *Esthetes* despair, as *esthetes* will.

Now it has been frequently remarked concerning architecture, that decadence sets in at just that point when decorative values outstrip structural significance, when the weight of adornment is more than its meaning can uphold. As on land so on the sea. When stem and taffrail curve like playful dolphins and berthings rise like cupola'd oriels over the waves, when hawse-holes yawn with lips and teeth replete, and carlings bend like ropes to the curve of the deck, on such a craft as Vanderdecken's cruising off the Cape, every bollard-head a *Hermes* and the quarter-rail a writhing bacchanal, the beauty of the wooden ship has reached the intolerable acme of decay—it is "baroque."

But note how, even at this point, each carved and painted piece is shaped and fitted to the integral structure. In no direction is an attempt made to reproduce the rectilinear conditions of horizontal earth and a constant gravity. The ship, a brigantine or barque, a galliot or chassemarrée, is one curve from end to end, and all is moulded in consonance with it. Contrast the aspiration of the modern monster. Ceiling and deck must be flat and square and the sides all perpendicular. And the luckless architect shall be called in to fit the given rooms with the frivolous trappings of his futile skill. So he panels and plasters it in the "Georgian" or "Louis Quinze"; gives an "Elizabethan" staircase and a lounge of tasteful trellis-work in the manner of a hotel or, what is really the same, the modern country house on a large scale. "Home from home" in fact—for those who like that sort of thing.

It is perhaps erroneous to assert that the tendency which renders possible afloat the architectural adornment adapted to dry land is entirely the fruit of conscious effort on the part of the designers of the larger vessels. Admittedly it is true in part; indeed, as far as saloon passenger quarters are concerned, this end is kept in view. But

it is rendered possible by the mod conditions of construction which ensue the vessel to be so monstrous that the curve from stem to stern, if pressed would be lost, and so steady that in but considerably inclement weather customary direction of the force of gravity is maintained. And therefore it may be argued, repugnant as it is to conceptions of the identification of structural achievement with aesthetic intent, that the present practice of applying adornment developed on land is logical and right.

But even supposing that the mere historical trappings are justifiable buildings (it is not our purpose here to discuss this immediately irrelevant point), surely on board ship they become insincerely frivolous in function and effect. Our ideas of aesthetic rectitude cry out against a procedure as careless intellectually in its inception, as it is bizarre in its result.

No. The ship is an entity compared to the city of our dreams. Like the city it is defined, of necessity, in its content. Straggling suburbs it has none, save negligible deck hamp comparable to the sheds and "lean-to's" outside a mediæval town, all easily abandoned. Within the disposition of its parts there still lie the husks of the seed of the aboriginal boat. Unbroken tradition has flowed through all the seeming change of different purposes at times—and even now in the "leviathan" is not quite lost. In the city afloat, through the city of our mind, there goes the spirit of forethought, certainty, and justice in the precise apportioning of space and position to the various divisions according to the importance and requirements of the functions they perform. From the crow's nest, justly holding the watchman against the chances of the world without, to the tunnel where revolves the shaft upon which the whole concern relies, each part will be found in its place, at once practical and symbolic, to a nicety for which no parallel is to be found in any association of functions so diverse upon dry land.

And it is in the peculiar aptitude of its conception that the true decorator of the vessels of the future will find the basis of his scheme, on the implicit symbolism of each part that he will depend for his motives, in the development of structural forms that he will find his means. It is useless at present to guess at the result and to imagine it is impossible. The companies will continue to pile the Pelion of obfuscating adornment upon the Ossa of prodigious size till the gods are assailed and, discomfited, retire. But in the meanwhile structural forms will be outstripping the mere necessities of their purposes, and in the moulding of brass and painted iron into shapes and curves and harmonies beyond the customary graceless minimum of utility the beautifier of ships will find at once his inspiration and his means.

PROPOSED L.C.C. TRAINING COLLEGE.

The London County Council propose to build a training college for teachers at St. Quintin's Park, in view of the fact that the present training accommodation is far below that required.

NOTES.

THE agenda for the forthcoming Trade Union Congress, which opens September 4, has now been issued, and besides the standard dishes, such as nationalisation of the railways, the eight hours' day, etc., there are resolutions relating to the Insurance Bill, and calling for a Commission to inquire into the working of the Workmen's Compensation Act, as well as an anti-military resolution suggested doubtless by the strikes, as it somewhat humorously describes the existence of a regular standing army as "a menace to popular liberty." Amongst the resolutions relating to the Insurance Bill is one which declares "that no scheme can be satisfactory which is not wholly—or at least mainly—non-contributory, and in which the bulk of the funds necessary are not provided by Parliament." We have always foreseen that such a contention was certain to be put forward, and in our article on this Bill (May 12) we said:—"One thing in connexion with the Bill should most certainly be made clear, and that is that if any attempt is made to whittle away the contribution on the part of those to be benefited by the scheme the Bill must forthwith be laid aside. Too many Bills have been introduced on social subjects based on contributory principles only to emerge from Parliament non-contributory and purely eleemosynary measures." We shall revert to the subject of the Congress at the conclusion of its sittings.

this kind to receive statutory protection? That is a question we should like to see raised and answered in the near future.

Unventilated Bedrooms.

DR. KING WARRY, the Medical Officer for Hackney, in submitting his annual report to the Council (see p. 257) draws especial attention to the fact that under the existing by-laws it is possible to build rooms, which are used as bedrooms, provided only with a ventilating opening in the wall, too frequently promptly blocked up by the occupant on the first cold or windy day, thus leaving the room without ventilation of any kind—a highly undesirable state of things. Dr. Warry advocates that it should be compulsory to have a fireplace in every habitable room. We cannot follow him as far as this, recognising that in most cases the small bedroom never sees a fire from year's end to year's end. At the same time, we quite admit the unsatisfactory character of the "hole in the wall," and think it would be reasonable to demand a ventilating flue carried to the top of the building and provided at the outlet with some means of inducing extraction. In the numerous industrial dwellings and small flats that are rising in and around London there is certainly an opportunity for a more systematic method of diffusing warmth; it must, of course, be inexpensive, but it would be very desirable that smaller rooms should be able to borrow a little heat from the principal room or rooms, considering how seldom they will be permitted a fire on their own account. Perhaps the simplest solution is the American one of abolishing the door—after all, the door is but a survival of barbarism—and we think Dr. Warry will agree with us in the view that a small and somewhat cramped flat is far more healthy if you take all the internal doors off their hinges and substitute curtains of a hygienically suitable material.

General Strikes.

In these days when general strikes are threatened on behalf of any discontent in any particular trade or industry a point arises both under the Conspiracy and Protection of Property Act, 1875, and the Trade Disputes Act, 1906, deserving serious attention. The general strike is a modern development since the passing of the last-named Act, and it may be doubted whether when the above Acts were passed the protection offered by the Acts to persons taking action "in contemplation or furtherance" of trade disputes was intended to extend to persons having no dispute amongst themselves, i.e., between employers and employed, but joining in disputes outside their own employment or business. The point is of the greatest importance, the House of Lords, as we have recently pointed out (*The Builder*, August 18), having held that for some sections of the Trade Disputes Act, 1906, to apply, a dispute must be either imminent or in progress. We submit that this must have been intended by the legislature to apply to disputes between employers and their workmen and not to extend where acts are performed by persons having no cause of dispute as regards their own employ. Where no cause of dispute exists in a particular trade, but the employees join in supporting a strike in other trades, this in itself appears to constitute an act of intimidation, and an act of intimidation not only levelled at their employers, but at the general public. Are acts of

Sanatoria and Dispensaries for the Tuberculous.

THE proposal to spend one and a half millions of public money on tuberculosis sanatoria in England has evoked criticism from Mrs. Amy M. Elkin, who writes to the *Times* to point out that it is of first importance to establish local dispensaries on the lines instituted in 1887 by Dr. Philip in Edinburgh, and since widely adopted in Germany. Mrs. Elkin takes the view that, though sanatoria may be looked on as the best possible means of education for the consumptive apart from any improvement derived from the treatment itself, it is of even greater importance to obtain the hold on the initiatory stages of the disease that can only be secured by means of properly staffed local dispensaries in touch with the districts in which consumption is fostered. We certainly think that some of the proposed expenditure should be allotted to dispensaries in lieu of sanatoria, having regard to the relative effect of each, in proportion to the expenditure, on checking of the disease, and the influence that dispensaries are able to exercise on the manner of life in our populous centres.

A Master of Arts and Crafts.

Does the position of Principal of the London County Council Central School of Arts and Crafts, giving the whole of his time to the work, demand a higher salary than that of Director of the National Gallery (1,000*l.*)? Apparently so, for the four-figure income advertised six months ago failed to attract the Head desired, and 1,200*l.* is now offered. The post is obviously one for an architect, and it might have been thought that among the large number of men with architectural training, with sound knowledge of design and craftsmanship, and, in addition, with some administrative ability, one could have been found to forego the uncertain fruits of general practice and to accept without regret the cheques, regular and not meagre, of the London County Council. Whether the best man will be tempted by the extra 200*l.* a year to come forward and be prepared to sacrifice all his professional ambitions and independence is doubtful. The whole-time clause was too rigorously enforced probably in dealing with the original applications; a certain elasticity is desirable. No one would suggest, for instance, that Sir Charles Holroyd performs his duties at the National Gallery less earnestly or efficiently because as a recreation he draws and etches; and the Principal of the Arts and Crafts School would be just as useful if to some extent he were allowed to exercise his artistic or literary powers outside the School. In fact, his position would be strengthened by being in touch with the outside world, and the right man could be trusted not to abuse his privileges. The solution of the problem probably would be found in the appointment of a Vice-Principal responsible for the detail work of the School.

THE STORY OF THE BRIDGE.

BY WALTER SHAW SPARROW.
IV.—IN THE MIDDLE AGES.

MEDIEVAL England was a forestal country, and in woods along many roads and byways footpads and bandits lay in wait, as ready to cut a throat as to broach a tun of wine. Rivers were feared then by pilgrims and horsemen, not only because fords were very common, but because thieves knew that an ambush near a ford was particularly unpleasant to anyone who had to make his way through it. Till the XIVth century, and even later, fords were in vogue at and near many towns of the lesser sort; and what their dangers were and how their guardians behaved to travellers are very well described in a picturesque old ballad written in the time of Henry V. "Another blisshed besines is brigges to make," its poet cries, thinking of the unfortunate travellers who were washed from their saddles into a flooded river:—
"And som oute of their sadels fletts [fall] to the ground,
Wente forth in the water wist no man where,
Eyre woken after or they were f founde,
Their kyn and their knowlege, [acquaintance] caught them up with care."
And the life and limb tax claimed by rivers was not the only trouble. The keepers of a ford knew no pity, but got their toll in relentless ways, taking bread from the beggar's wallet, and "a hood or a girdle" from "the pore penyles." Pretty often, again, great woods encircled little riverside towns and manors, so that outlaws after dark could steal up close to the houses and the bridge; it was



The Monnow Bridge, Monmouth.

[Photo. by G. S. Sargisson.]

then that pilgrims and wayfarers welcomed with the greatest relief the cresset-lights that glimmered from some friendly building on the bridge—a chapel, a defensive gateway, a small bickering windmill, or a good house buttressed up against a pier and rising above the parapet.

On all the many pilgrim roads the absence of a bridge here and there was a grievance and a danger that affected everybody, yet fords gave place to bridges very slowly, and the reasons are not really at all hard to find. For example, it was a long time before bridges won a good reputation among the people. Wood being abundant everywhere, they were often timber bridges, rudely built, we may believe, for many of them were carried away by floods, as Matthew Paris relates in his monastic journalism, which belongs to the XIIIth century. Country-folk had their hearts set on the safety of stone bridges, which, like other ideals, were not easy to make real. Money enough had to be collected, and leave from the King had to be angled for; hence the old custom of laying the first stone in this or that King's name. Remember also that rivers flowed through private lands, sometimes with rival owners on each bank, who put a veto on the whole project, either in a spirit of perverse antagonism or because a stone bridge might benefit one landowner more than another. It was always easy for the stronger man to say that the coffer dams used in founding piers diverted rivers from their natural channels and caused inundations, particularly after storms. I think this objection was raised pretty often, as piers were founded here and there in a very primitive fashion, just by throwing down stones and mortar till a bed of masonry rose above water-level. Old Bow Bridge was grounded in this way at Stratford-atte-Bow, XIIIth century; and the same method of construction was used in much later days.

And another point to be kept in mind is the fact that in those warlike times everything was looked at from the standpoints of attack and defence. Bridges as well as warriors needed armour, so gateways and towers were built in a military fashion, and sometimes one arch was a drawbridge. Take Old London Bridge as an example. One of its twenty arches—the thirteenth from the City end—served two purposes, being a toll-gate for merchant shipping and a draw-bridge to gap off enemies from the town. It served this purpose effectively in 1553, when Sir Thomas Wyatt and his insurgents wished to enter London. It was easy for strangers to know which was the movable arch, because this defence was connected in all popular talk with the tower that rose beside it, a terrible and gruesome tower, for

on its summit executioners displayed the heads of decapitated persons, who ranged from common bandits to the great Sir Thomas More.

Some defensive bridges in Old England had an important look as late as the reign of George III. Thus the Welsh Bridge at Shrewsbury has quite a noble air in engravings of that period. At the present time our gateway and towered bridges are plain specimens of this mediæval tradition. One at Warkworth, Northumberland, belongs to the XIVth century. It has a squat tower with plenty of stonework above the gateway, but the gateway itself is so low and narrow that a gipsy's caravan cannot pass through it. As to the bridge, its simple dogged architecture has points worth noting. There is the roadway, which has a pleasant line dipping towards the gateway, and having a triangular recess for the convenience of travellers in the great central pier. The gateway is at some distance from the abutment, and the wall that unites them has a curve that repeats in two places, but in a modified manner, the line of parapet formed by the recess. Although the pier midstream is triangular, an attempt has been made to mask the false principle involved in this type of cut water; that is to say, the mason tried to thrust into the oncoming river a larger bulk of masonry than was usual in sharp-beaked piers and buttresses. It is odd, but mediæval bridge-builders very often believed that a pier, however substantial in bulk, ought to

cut water like a knife, instead of presenting a bold surface to the swift current, a surface having weight and resistance, as in those occasional piers in French bridges of the Limousin, whose sectional form is similar in shape to a Gothic drop arch, or else to an arch which is formed on an equilateral triangle. It is clear that a section of this kind has a greater surface than that of a triangle, and consequently greater power and opposition.

Further, when you remember that Warkworth Bridge belongs to the XIVth century, do you not expect to find pointed arches, since these need less centring and have a lighter side thrust, necessitating less masonry and, therefore, less expense in the building of piers? Yet the ribbed arches are round. Northern England has ever been noted for two characteristics—a discontent that is said to be a Radical in politics, and a stubborn opposition to new knowledge and to young movements. All this may be read quite clearly in those humble stalwart bridges which in northern counties unite the Middle Ages of hard work with our days of infinite talk. It is to Lancashire that you must go, for instance, if you wish to study in old bridges the retention of Romanesque forms.

I do not know whether the great pier of Warkworth Bridge is solid all through from its foundation to its roadside recess. But let us remember that many mediæval piers, like a good many of those built by the Romans, were solid shells of stone filled up with beaten earth and gravel.

As a fair type of the defensive bridge in Great Britain, I have chosen for illustration the Monnow Bridge at Monmouth. The bluff old tower has rounded ends facing the river, and one arrow-hole can be seen in my photograph. There are machicolations above the gateway, flanked by arrow-slits, and just below the roof is another aperture through which stones could be hurled or molten lead poured. Horatius Coeles would have been glad of a tower like this on the Pons Sublicius. It was not till much later times that the Romans, by building triumphal arches on the roadways of important bridges, created a tradition that passed through the Middle Ages onward to our own time and to contemporary work.

The arches in the Monnow Bridge are round, and note that they are *arcs doubleaux*, as the French describe those vaults in which at certain intervals a concentric arch is superimposed, or the vault itself at certain places is of double or greater thickness than at others, so that bold ribs project from the belly of arches. *Arcs doubleaux* are common in old English bridges, and some of the most interesting are Elizabethan, notably in the beautiful Wilton Bridge across the Wye,



Chantry on Wakefield Bridge, Yorkshire.

[Photo. by G. S. Sargisson.]



Bridge Chapel, Bradford-on-Avon, Wilts.

Photo by C. S. Set of glass.

near Ross, in Herefordshire, built of reddish sandstone in 1599. In the Wilton Bridge the voussoirs are notched or joggled into each other in accord with that Norman fashion which left a history of itself in such work as the fireplaces at Fountains Abbey. Many students of the evolution of bridges give sufficient care to the ring of arch stones. In the Monnow Bridge at Monmouth a slight tentative effect has been made to give the arch stones some freedom from the oscillation sent through the spandrels when a great weight passes over an arch. A slight tentative effect, I repeat, because the voussoirs are not been made independent from the spandrels. To find arches of this type we must go to the noble Valentré Bridge at Cahors, dating from the XIIIth century. Five acute-angled piers rise from the water in a high parapet, forming crenelated recesses on each side of the roadway; and the voussoirs of the six principal arches, gracefully pointed, are, as Viollet-le-Duc says, extradosés, like the round arches in the best Roman bridges.* This makes the ring of each arch independent from the construction of the spandrels, so that they keep their elasticity, and cannot pass on through the rest of the bridge any tremor sent down from the roadway into the spandrels. On the other hand, when arch stones are unequal, tuck in their haunches than in their crown, oscillating movements go along the full length of a bridge, causing undue fatigue to the piers, and sometimes a very noticeable crumbling, as in the bridge by Irigo Jones at Llanrwst. Perronet, the greatest French engineer of the XVIIIth century, forgot this effect of repercussion when he designed and built Le Pont Louis XV. at Paris; and in the hope that he would remedy his mistake he jammed his arch stones together with iron bolts along the soffit, as if metal fastened into one could never in the course of time become a destructive agent.

The architect of Valentré Bridge was wiselier than Perronet, every arch in his work being an elastic bow that is able to move between two piers without conveying its oscillation beyond those supports. To our modern eyes, no doubt, there are too many arches across the River Lot at Cahors, but this was necessary in the Middle Ages, and for two reasons. It was a necessity of defence, because narrow

arches were easier than broad ones to protect from the roadway if an enemy wished to assemble boats under a bridge; and since in the frequent wars of those days a bridge had often to be cut as a final resource against defeat, it was essential that the destruction of one arch should not upset its neighbouring piers by the withdrawal of a counterbalancing thrust from one side of the piers. Many piers of a large size were essential, above all, when the greater lateral thrust of round arches had to be considered in its relation to a bridge cut in a single place. Further, bridges in the Middle Ages were built very slowly, bit by bit, their construction lasting from ten to twenty years; and as war at any moment might stop the masons, there was a great need that every arch should have for their support such strong piers as would be equal to the stress and strain of all eventualities. From this standpoint, then, as well as from the militant strategy of bridge-building, many powerful piers were necessary, and a bridge gained very much in value when its pointed arches had in their voussoirs the characteristic which all authorities praise in the Valentré Bridge at Cahors.

But it is time now to say a few words about bridges with chapels. These became common in the XIVth century, and in most cases they were built up against their bridges from the water-level so as to be like extra piers in times of flood. We are fortunate enough to possess four examples at the present time, despite the vandalism which followed the suppression of monastic houses by Henry VIII. The chantry on Wakefield Bridge suffered greatly in those days, and its desecration continued till the year 1847, when its beautiful architecture, dating from the time of Edward III., was restored at a cost exceeding 2,000*l*. Some authorities believe that the style belongs to Edward II's time, but the endowment was certainly made by Edward III., in a charter written at Wakefield: he settled "10*l*. per annum on William Kaye and William Bull and their successors for ever to perform divine service in a chapel of St. Mary newly built on the bridge at Wakefield." There has been much controversy over this bridge chapel, so I refer you to C. A. Buckler's "Remarks upon Wayside Chapels," and to N. Scatcherd's "The Chapel of Edward III. on Wakefield Bridge." Perhaps the precise date of the charter of endowment may have been 1362, a jubilee year, in honour of the fiftieth birthday of our third Edward. This king did much to protect the wool trade, and Wakefield was dependent upon woollen handicrafts, and an ancient tradition says that the chapel on Calder Bridge was built by the

inhabitants of Wakefield. Another endowment seems to have been made by the fourth Edward, in memory of his father Richard, Duke of York, killed at the battle of Wakefield in 1460. It is certain, I believe, that the chantry was much visited by local pilgrims who came to do honour to a statue of the Virgin.

Yorkshire owns another chapel bridge, the one at Rotherham, first built in 1483, but it has less charm than that which belongs to the little dovecot chantry on the picturesque bridge at Bradford-on-Avon, Wiltshire.

Do we possess a bridge buttressed by a watermill? Bridge and mill are often close together, but not so near as they are in some French examples. In the Middle Ages they often formed but one construction, built entirely of wood. A good example survived at Meux, in Brissac, till 1835, having weathered storms since the XVth century.



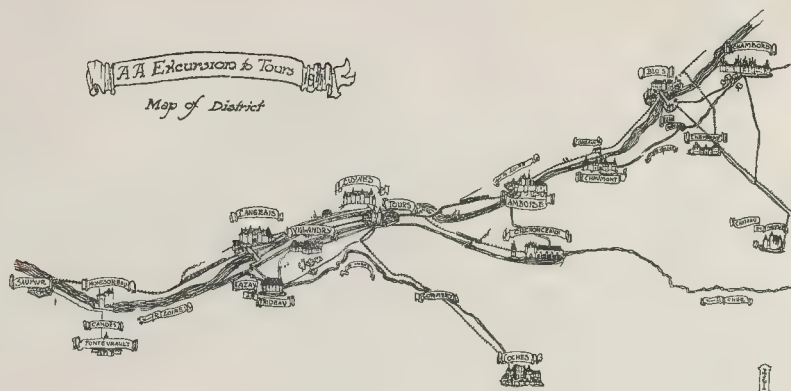
FORTY-SECOND ANNUAL EXCURSION.*

Fourth Day—Thursday.

It had been intended to break the journey to Loches at Cornery for the purpose of inspecting the remains of the XIIth-century Benedictine Abbey there, but the fatiguing nature of the weather led to a change in programme, and the party proceeded direct to Loches by an early train and devoted the whole day to pursuits rather archaeological than architectural chiefly about the castle and church. The site of Loches, on the banks of the Indre, was inhabited by the Romans, and a monastery was there in the Vth century, round which the town and castle grew. The castle as now existent is of two main parts, the Château Royal, dating from the XVth and XVIth centuries, and the Donjon of Fulk Nerra, of the eleventh and twelfth centuries, to which Louis XI. added the Tour Neuve and the Martelet, containing the noisome subterranean cachots which he put to such cruel use in the XVth century. Between these two parts stands the unique collegiate church of St. Ours. The great donjon—the usual square Norman keep, entirely ruinous within—differs from the common practice in England in having in place of flat pilaster buttresses a series of bold projecting shafts or engaged columns. The various cachots were inspected, but their interest is human rather than architectural, and no description is needed. The Château Royal is more attractive. On the side overlooking the town the buildings to the left are those of Charles VII., the round tower at the end being known as the Tower of Agnes Sorel, and containing her tomb, with a beautiful sculptured effigy displaced from the church. The extension on the right is the work of Louis XII., and its abandonment of the machicolations, tourelles, and battlements of the earlier building is evidence of the continued progress to more settled times. In this building is the delightful little oratory of Anne de Bretagne, a sumptuous piece of flamboyant design carved on every surface with her badges of the ermine and the knotted cord. The church of St. Ours, which

* Continued from page 215.

* This characteristic is particularly evident in the remains of the great Roman bridge at Narni, in Italy. The great arch stands to this day, and the upper edge of the ring is moulded and rimmed, so that the arch stones lock isolated from the masonry surrounding them. The arch at Narni is 150 ft. wide and 100 ft. high. The bridge was built by Augustus Caesar. It joined two mountains together across the River Nera, and formed part of the Flaminian Way in the country of the Sabines.



which a new wall and the soffits are elaborately enlaid in stone with medallion portraits and pendants curiously worked to the rake. Now a national monument, the chateau is not inhabited, and its interior rather suffers from the absence of furniture save a few specimen pieces. Externally, however, there is no denying the charm of the work, which the cold light of reason cannot destroy. Seen in the strong sunlight, the dazzling creamy whiteness of the stone, the general delicacy of design, the lofty billowy roof of rough grey slates with old age and finials, the intricate shadows and reflections all combine to produce an impression which no illustration can do justice. The outer buildings enclosing the forecourt are also most effective design, and no better view can be had than that looking up the avenue through the main gates with their fine piers, directly towards the entrance, though the simple severity of the south front with its corner angle turrets, four narrow dormers, and wider central gable springing from the roof slope is also very delightful.

Again the party was reluctant to leave, but move had to be made to Langeais, which a further half-hour's drive enabled them to reach till in ample time for profitable study.

Langeais, the Roman Alingavia, has probably been a fortified place from prehistoric times, and has been since occupied by a succession of castles. Remains of Roman work are still visible in the foundations of the dungeon keep, rebuilt about A.D. 1000. A fort was built here by Fulk Nerra, the ancestor of our Angevin kings, of which the outer shell remains. Following this a new castle was built by Pierre le Brosse, a favourite of Philip III.; this was occupied by the English during the Loire campaign of the Black Prince. The present chateau was built in 1464 under the direction of Jean Briçonnet, first mayor of Tours. Though still fortified, it shows signs of the coming change in that its fortification is practically confined to its outer face, which has circular flanking towers and machicolations, while the inner side shows only a plain overhanging eaves pierced by lofty dormers and a series of slender stair turrets. It is intermediate in development between the stern and rugged work of Loches, and such buildings as Chambord, Azay-le-Rideau, or Blois, a combination of stronghold and house. The plan is an irregular L shape, the shorter arm at an oblique angle with the main wing, in which is the gate-tower approached by a drawbridge. The chateau was occupied and filled with old furniture, chiefly of contemporary date, from which one is able to judge to what extent some of the other buildings visited suffer from the lack of this feeling of life. The most beautiful rooms are the Great Hall (in which Anne de Bretagne was married to Charles VIII.), and the room over, both in the short arm of the L. The original chimneypieces of these two rooms are alone worth a visit to see and admire, even though sketching is not allowed. In common with the other chateaux of the district most of the principal rooms have glazed tile floors of

excellent colour and design; the floor in the Great Hall is of a different type—of dull red quarries—with occasional heraldic emblems in slight relief. The passage of the battlements is complete and open to inspection, and a walk round this pentise affords a very good idea of the methods of medieval warfare.

St. Martin built a church at Langeais, of which there are some remains near the east end of the present edifice, most of which has been rebuilt in a style so bad as to defy description. The triple apsed east end and a fine western tower and spire remain, probably part of a church built by Fulk of Anjou in the XIIth century.

Little time remained for the chateau of Luynes, which was reached about 6.30. Magnificently situated above the little village over which it towers, this building makes an ideal subject for the water-colourist. It consists of an immensely thick enclosing wall with eight round towers, all of which have lost their machicolations and are capped with conical roofs. This work is of coarse rubble roughly plastered, but towards the courtyard is a pleasant flamboyant brick and stone building which alone is inhabited. It bears considerable resemblance to the remains of the chateau of Plessis-les-Tours, and was built towards the end of the XVth century by the Seigneurs de Maille. At the end overlooking the valley of the Loire two Renaissance pavilions were built in 1650 by the architect, Le Muet.

At the foot of the castle hill is an interesting timber market hall, and in the village are several interesting old cottages, including one fine specimen of timber framing with the bracing arranged lozenge fashion and filled with brick nogging.

Sixth Day—Saturday.

An early start was made on Saturday for Saumur *en route* for Candés and Fontevault. Two hours were spent in the town, but the chateau (extensively restored) was not visited, attention being chiefly devoted to the late Gothic Hôtel de Ville, mainly of the XVIth century, but partly of earlier date, the older portion surmounted by a steep hipped roof with octagonal machicolated corner turrets, and central fleche with a curious vane rope-sending a heron surrounded by its young. The other interesting buildings of the town had to be reluctantly abandoned without inspection. Candés, the ancient Roman Candates, and the scene of St. Martin's death in 397 or 400, was reached by road. Its remarkable fortified church excited the greatest astonishment, and was certainly one of the most noteworthy buildings seen. The very lofty four-bayed nave, apparently late XIIth century, is on the lines of the German hall-churches. Its three aisles being vaulted at the same height. The vault tends to be domical, and is supported on tall clustered piers. Windows resembling the English lancet light this remarkable nave, and there is also a western rose partly blocked. The short sanctuary and apse appear to be earlier in date. The external design is equally

noteworthy, great battered buttresses rising sheer from ground to gable without a moulding or offset. On the north side is a very large gabled porch effectively ornamented by two bands of niches containing statues—one below the springing of the doorway arch, the other cutting across an expanse of plain wall as a sort of frieze halfway up. The angles of the porch and of the west front have square projecting turrets with machicolated and battlemented tops. Internally this extraordinary porch is vaulted from a central shaft like an English chapter-house and surrounded by sculpture. A short distance back from Candés is Montsoreau, a picturesque village clinging to the rocky bank of the Loire, and having a ruined chateau rebuilt in the XVIth and XVIIth centuries by the Comtes de Montsoreau. This is interesting as showing one of the features of Azay-le-Rideau anticipated in a Gothic building, dormers being carried by the machicolation in advance of the main walls, though in this case each dormer has a second story gathered in above. From Montsoreau the Loire was left, and at a distance of about four miles Fontevault was reached.

The great monastery of Fontevault was founded in the XIth century by Robert d'Arbrissel, a Breton priest, whose powerful preaching and magnetic personality gathered to him disciples to the number of several thousand, and almost resulted in his canonisation in after years. In the year 1098 or 1099 this company, comprising both men and women, invaded the Forest of Fontevault and there founded their religious colony, which took shape as a remarkable double monastery under the authority of an abbot. Over the central, or nuns' buildings, the abbot presided in person, while around were grouped subsidiary establishments under her supreme headship, comprising the monks' priory of St. Jean de l'Habit, the leper-house of St. Lazare, and the penitentiary of La Madeleine. Other establishments were afterwards added, notably an infirmary of St. Benoît, and perhaps a priory of St. Laurent. The convent followed the Benedictine rule with certain variations which practically constituted it a distinct Order, and as such it had afterwards branches both in France and England. Its connexion with the Plantagenet kings arose through the early support of the monastery by Fulk V., Count of Anjou, and grandfather of Henry II., and this connexion lasted into the XIVth century, both Henry II. and Richard I. being buried in the Abbey Church, as well as the hearts of John, Henry III., and perhaps Edward I. The abbey became one of the richest in France, and when dissolved at the Great Revolution was the scene of gross sacrilege and violence. Under Napoleon it became a house of correction, and to fit it for this end the buildings suffered great damage, particularly the church, where the four cupolas over the nave were taken down to the pendentives to allow the formation of a range of attics in the roof. These have lately been removed and the domes rebuilt, the restoration being yet in progress. A plan



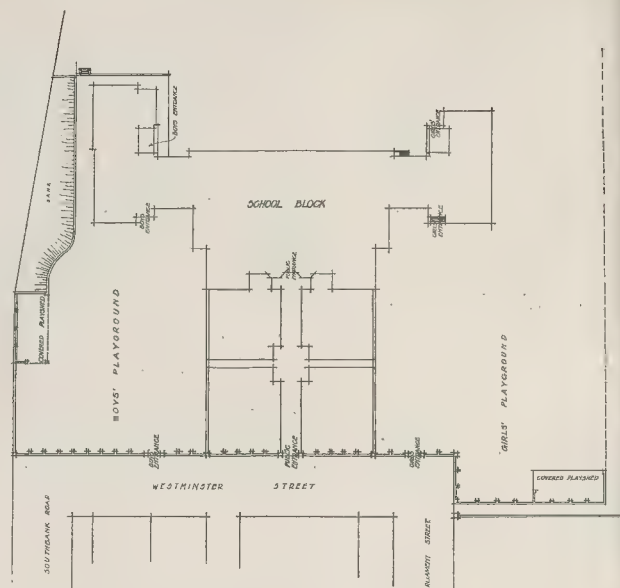
of the monastery appears in Lenoir's "Architecture Monastique," and Viollet-le-Duc, who gives a plan of the church, has discussed its remarkable construction and its place in the history of French art. The aisled apsidal choir and the transepts present no exceptional features compared with the nave, which is without aisles and covered by a series of Angevin domes on pendentives, supported by pointed transverse arches, the whole making a



From Château Blois.

spacious vaulted hall, which is directly derived from Byzantium via Venice, Périgueux, and Angoulême. The royal effigies repose in a chapel opening from the south transept. As well as the church the cloister, chiefly of the mid-XVIIth century, and the chapter-house of the same date, are shown to visitors, and a glimpse is possible of the abbey kitchen, known as the Tour d'Evrauld, and once thought to be a sepulchral chapel, but the visitor is not encouraged to linger, and none of the other extensive buildings are open to inspection. The parish church, outside the confines of the monastery and hence more accessible, was also examined. It has a simple rectangular nave and choir with low groined vault with domical filling. In a transeptal chapel on the north side is an elaborate rococo altar and reredos. A picturesque wooden lean-to porch envelops the north and west sides of the nave. The abbey gateway, a well-proportioned pavilion of the mature Renaissance with finely designed Ionic pilaster capitals, was sketched by a majority of the members present.

The party left Tours early on Sunday morning for Paris, where it broke up with expressions of gratitude to the excursion hon. secretaries, Messrs. Talbot Brown and A. W. Hennings, for their arrangements, and to Mr. P. Cart de Lafontaine for his painstaking conduct of the party.



Secondary School, Bury. Block Plan.

BURY SECONDARY SCHOOL.

The design for the Bury Municipal Secondary School illustrated on this page was awarded the first premium in an open competition in which 140 designs were submitted. The building was completed in January last at a cost of 14,000l. The school was arranged to have as many classrooms as possible on the ground floor under supervision from the assembly hall. The cloakrooms, staircases, entrances, and cookery-room are all well separated from the rest of the school, and the latrines, while they are approached under cover and are closed in by the outer gates of the building, are entered from the open air, and adequately cut off from the school.

There is accommodation for 350 pupils, and in addition to the hall and classrooms there are laboratories for chemistry and physics, art room, cookery-room, and manual instruction-room. The walls are of thin "Nori"

facing bricks, which were not selected to obtain uniform colour; the roofs have rough Westmorland slates, and the woodwork is painted white.

The architect was Mr. J. Theo. Halliday, A.R.I.B.A., of Manchester; the contractor, Messrs. J. Byrom, Ltd., Bury. Mr. R. Nuttall acted as clerk of works.

GENERAL NEWS.

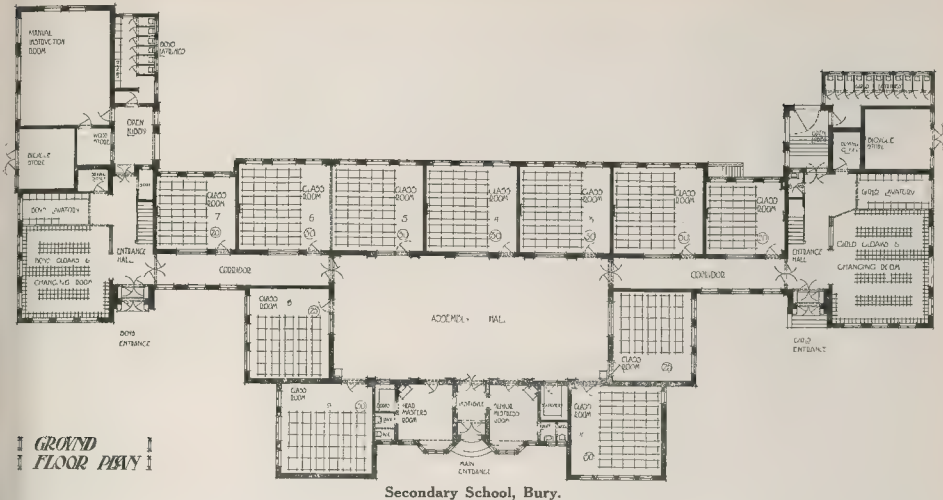
The Inland Revenue.

Mr. Edgar Harper, F.S.I., has been appointed by the Board of Inland Revenue to be Chief Valuer in succession to Sir Robert J. Thompson, F.S.I. Originally Mr. Harper was on the staff of the Metropolitan Board of Works, and afterwards acted as Assistant to Mr. Andrew Young, Valuer to the London County Council. Last April Mr. Harper



Secondary School, Bury.

Mr. J. Theo. Halliday, A.R.I.B.A., Architect.



unconditionally resigned his position of Statistical Officer of the London County Council, an event which was given some political significance.

Oxford Circus Going.

Another complete effect of an architectural pooh in London is in the hands of the house-reckers. We refer to Oxford Circus. The milliners' and jewellers' premises forming the south-east segment is going to be rebuilt. When the worst is said of the Regency and such and his work—that it is spectacular, if no scale, and insincere, indictments which he would combat—it is, at any rate, a conception, a coherent, piece of street design. Complaint and indignation is becoming as resolute to us to write as it must by now be tedious for our subscribers to read. We can only chronicle the fact; we understand that the new building will be of a kind capable of extension to the other segments so that the Circus may be architecturally a circus again.

The London Museum.

The objects of interest in the history of London which are being collected at Kensington Palace under the care of Mr. Guy Francis Faring, M.V.O., F.S.A., have been augmented recently by the permanent loan from the London County Council of the Roman boat discovered in the mud on the site of the new county Hall. That this relic of the past will be a popular feature of the London Museum may be prophesied safely.

The Crystal Palace.

As announced in the daily Press, the sale of the Crystal Palace and its grounds of about 200 acres is to take place on November 23, and those who hope even yet to save this national monument to the people are making a last effort to find the wherewithal to do so. It is proposed to hold another Mansion House meeting on October 23, and the Lord Plymouth and Lord Tenterden

are doing everything possible to prevent this property falling into the hands of the speculative builder. We sincerely hope that their efforts may be crowned with success.

Fire Losses.

It is believed, says the *Times*, that the abnormally hot summer, which has dried up everything both in and out of doors, has had much to do with increasing the loss ratio from fire. Certainly, the London Fire Brigade and the Salvage Corps have been kept exceedingly busy within the past few weeks during which the heat was intense, and in addition to their ordinary cares have been added the anxieties caused by the series of strikes throughout the country. One British company alone has been concerned with conflagrations costing nearly a million and a half sterling.

The Teaching of Discipline.

In opening a new elementary school and housewifery centre at Seaforth, near Liverpool, Professor R. J. Harvey Gibson, M.A., expressed the view that it is of the first importance that a school should teach discipline; let it try to make the scholars remember they were members of a great nation. Events had shown them what a state of things could be brought about because one section of the body politic refused to do their duty. Could they not get over such a difficulty in the future by teaching the children who might become transport workers the value of discipline? Let them have their grievances, but do not allow them to upset the whole country until those grievances were settled. The whole of society depended upon the work of each member. The lesson this strike had taught was that the schools must not only teach the very simple problems of education, but something more—the spirit of obedience to the municipality and the country to which we belonged. There was far too much individuality in these days. What was wanted was more discipline and

patriotism. They might make more of the phenomena of the subjects of the day, and a little less of the wives of Henry VIII.

Swimming-Baths on the Lines of the Amphitheatre.

The principle of surrounding the swimming-bath with a series of tiers before reaching the dressing-boxes is growing in popularity, and the Keighley Town Council has recently decided to adopt this method in the new bath they propose to erect. The demands of swimming competitions necessitates the retention of the recognised oblong form of bath, but the provision of a series of raised steps between the bath and the dressing-boxes has obvious advantages in keeping the latter out of range of wet, from splashing, and in providing for spectators of the water sports, and also when the bath is used, as is frequently the case, for other purposes of entertainment.

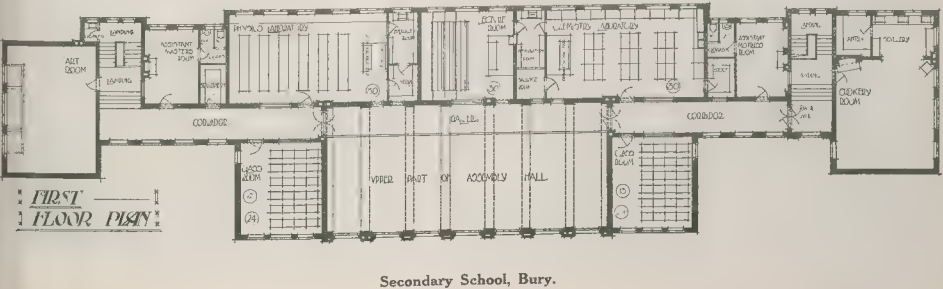
Improvements in Aberdeen.

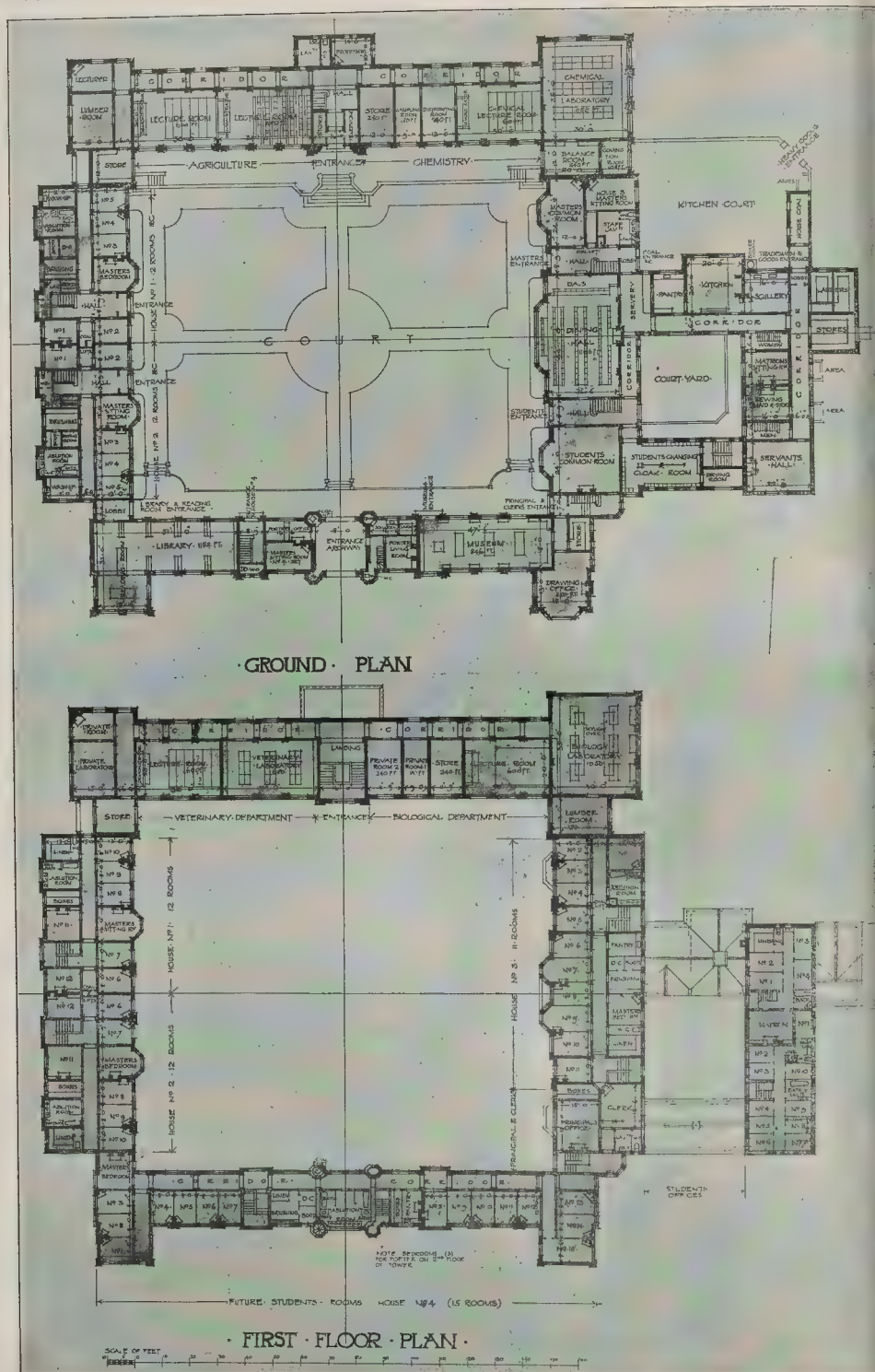
The Aberdeen Town Council are considering the possibility of clearing Blackfriars-street and forming a new thoroughfare. The cost would be about 40,000*l.* If the scheme were adopted, the present architectural features would be improved and important new buildings would be erected.

COMPETITION NEWS.

Seale-Hayne College, Newton Abbot.

Thirty-five sets of plans were submitted in this competition, and, as briefly noted in our issue of July 21, the assessor, Mr. Charles Steward Smith, F.R.I.B.A., of Reading, placed the following first, second, and third respectively:—
First premium, of 100*l.* Messrs. A. F. & R. F. Gutteridge, A.R.I.B.A., Southampton.





Seale-Hayne College, Newton Abbot. Accepted Design.
By Messrs. A. F. & R. F. Gutteridge, A.R.I.B.A.

Second premium, of 50l.—Mr. Josias Beare, A.R.I.B.A., Newton Abbot.

Third premium, of 30l.—Messrs. Crouch, Butler, & Savage, Birmingham.

The plans and elevations submitted by Messrs. Gutteridge are published in this issue. It is proposed that the entire scheme shall ultimately cost about 30,000l., and that the first instalment shall cost about 20,000l. The block on the south side of the "Quadrant," together with some parts of the servants' quarters, etc., will therefore for the present be omitted, but the present buildings will include headmaster's house, dairy, smiths' and carpenters' shops, and electric light station. A detached gymnasium will form part of the future addition. It is proposed to erect the buildings in red bricks, with stone dressings, and slated roofs. The site is a very fine one, on high ground about two miles west of Newton Abbot, and the college buildings will command a view of the Teign Valley and the open sea beyond.

The completed scheme will ultimately include a set of farm buildings with labourers' cottages, the Governors owning some 230 acres around the College buildings.

Welsh National Eisteddfod.

At the Welsh National Eisteddfod recently held at Carmarthen the following were the awards in architecture:—

For the best design, with specification, for a cottage to cost 180l.—Mr. Wm. Eaton, A.R.I.B.A., Cardiff.

For the best design for a public hall to seat 500 persons.—Mr. Dan. W. Thomas, Derby.

For the best sketch in black and white of any building of antiquarian interest in Wales.—Mr. Wm. Eaton, A.R.I.B.A., Cardiff.
Mr. Edwin Seward, F.R.I.B.A., of Cardiff, was the assessor.

An Ideal House.

Messrs. Reginald C. Fry & H. Clarke, jun., of 12, Clifford's Inn, Fleet-street, have been awarded the first premium, of 100l. in connexion with the competition promoted by the *Daily Mail* for an ideal country house to cost from 900l.-1,000l. Messrs. E. C. P. Monson, F.R.I.B.A., & E. J. Sadgrove, F.R.I.B.A., with others, were the assessors.

BOOKS.

The Housing of the Working Classes Acts, 1890-1900, and Town Planning, Annotated and Explained, together with the Statutory Rules and Forms. By CHARLES E. ALLAN, M.A., LL.B., Barrister-at-Law, assisted as to the practice by FRANCIS J. ALLAN, M.D., D.P.H. Third edition. (London: Butterworth & Co.; Shaw & Sons. 1911.)

This third edition of this work forms practically a new treatise, for, as is explained in the Preface, since the last edition appeared both the Housing of the Working Classes Act, 1903, and the Housing and Town Planning Act, 1909, have come into force. The work seems designed on practical lines, as the text consists of the various Acts dealing with housing, with copious notes to the sections of the Acts, and forms a complete handbook to this unfortunately complicated subject. There are, besides an introduction, tables of

statutes and cases, and an index, but the provisions of the Acts relating exclusively to Ireland are omitted to save complexity.

The work appears to us to have been carefully carried out, and is likely to prove a useful guide to those who have to master the legislation on the subject, which is typical of modern legislation in its intricacy. The Act of 1890 was a codifying statute intended to consolidate the law, but such amendments and new matter have been introduced by the subsequent statutes that it may be questioned whether the Act of 1909 should not have been a codifying statute on the question of housing of the working classes, and the town planning portion of the Act been introduced, as the authors suggest, as a separate statute. The case *Rayner v. Mayor, etc.*, of Stepney (noted the *Builder*, July 7 last) was decided since the issue of this volume, but is an important decision on the form of closing orders.

Butterworth's Workmen's Compensation Cases. Vol. III. (New Series). Edited by His Honour Judge RUGGER, K.C., and DOUGLAS KNOCKER, Barrister-at-Law. (London: Butterworth & Co. 1910. Pp. 596. 7s. 6d. net.)

THE period covered by the third volume of "Butterworth's Workmen's Compensation Cases" is from October, 1909, to October, 1910, and in the Preface we see it stated that during that period 142 cases were set down for hearing, ninety-seven of which were tried out, from which it appears that the Act of 1906 has by no means put an end to this class of litigation. These Reports, which are a continuation of those started by the late Mr. Minton Senhouse shortly after the original Act came into force, are so well established, and have proved of such utility both to the legal profession and to the public, that they require no commendation at the hands of the reviewer, and the only matter open to consideration is the form in which they are presented. We notice that in this third volume the County Court cases are omitted, and in this we think the editors have shown a wise discretion, as these decisions are of little authority. Another point on which, from the remarks in the Preface, the editors appear to be in some doubt is whether they are wise in including cases which turn solely on questions of fact, and we have suggested before that these cases might be confined to the quarterly advance sheets, and not be included in the final volumes. A new feature in this volume is a record of every case entered in the House of Lords, whether it proceeded to judgment or not; but, if space be valuable, we do not think much is gained by this. As regards the arrangement of the cases, in former volumes of this series we think the cases followed the sections of the Act; in the present volume this plan seems not to have been adhered to, nor are the cases placed in alphabetical order, but they are grouped according to the law terms during which they were heard. We venture to suggest that the former arrangement was the most convenient. The table of cases includes the cases reported in all the volumes of both series, but in this volume the index to former volumes has been omitted, the index being confined to cases only reported in this

volume. This, again, appears not to be a change for the better. We make these suggestions and comments in no disparaging spirit; but in our review of Vol. II. we observed, "We can see no room for improvement in the arrangement of the present volume," and we still think a counsel of perfection had been attained.

A Digest of the Law of Easements. By L. C. INNES, late of the Indian Civil Service, and sometime one of the Judges of Her Majesty's High Court of Judicature, Madras, and sometimes Fellow and Vice-Chancellor of the University of Madras. Eighth Edition, by NOEL LETBOURNE GORDARD, of the Middle Temple, Barrister-at-Law. (London: Stevens & Sons. 1911. Pp. 142. 7s. 6d.)

THE first edition of this little work was published in Madras in 1873, and in the present edition Mr. Gordard, as he explains in his Preface has followed the plan of the author in his earlier editions, but has brought the work up to date, and also entirely recast the index. The digest form—the enunciation of general principles and propositions printed in large type with illustrations printed beneath in smaller type—is very useful to those desiring to attain a general knowledge of a particular branch of law, although more amplified textbooks are required by practitioners. The fact that this is the eighth edition of this little work shows that it has been appreciated in the past, and since the present editor is joint author of a well-known treatise on the law of easements it can safely be assumed that this latest edition will prove as useful as its predecessors.

The Inventor's Adviser and Manufacturer's Handbook to Patents, Designs, and Trade Marks. By REGINALD HADDAN, Fellow of the Chartered Institute of Patent Agents. Eighth Edition. (London: Harrison & Sons. 1911. Pp. 494.)

WHEN it is stated that the first edition of this work appeared in 1894 and that this, the eighth edition, is dated December, 1910, in a sense the reviewer's task may be said to have been accomplished on the principle *res ipsa loquitur*. Quoting from the title-page, we may, however, remind our readers that this volume is intended as "an instructional guide to the commercial development of inventions, their protection by patents at home and abroad, and the valuation and disposal of patent rights." It also includes requirements for registration of designs and trade marks, and particulars of the patent law and practice of foreign countries and the colonies. The work, as its title implies, is more a handbook for the inventor than a text-book dealing with the strictly legal aspect of the subject. As regards the much-discussed section of the Act of 1907 respecting the revocation of patents when the patented article or process is not adequately manufactured or carried on within the United Kingdom, we note that the author disapproves of the principle involved, and says that in his opinion the whole section were best repealed; but this branch of the subject occupies but two pages of the work. No doubt this edition will be as useful as those that have preceded it.



· SOUTH · ELEVATION ·

Seale-Hayne College, Newton Abbot. Accepted Design.
By Messrs. A. F. & R. F. Gutteridge, A.R.I.B.A.

EDITORIAL SUMMARY.

The editorial article—entitled "Modern Ships and the Architect"—deals with the development of the ocean "liner" as it affects the architect in his capacity of decorator.

Notes (p. 237) include: "The Trade Union Congress"; "General Strikes"; "Unventilated Bedrooms"; "Sanatoria and Dispensaries for the Tuberculous"; "A Master of Arts and Crafts."

"The Story of the Bridge" is continued on p. 237, examples in illustration being chosen from the Middle Ages. Bridges with chapels were numerous in Medieval England, while gateways and towers for defence were often added.

A continued notice of the visit of the Architectural Association to France is given on p. 239. Among the places mentioned are Looches, Villandry, Azay-le-Rideau, Langeais, Lunays, Saumur, and Fontevault.

On pp. 242 and 243 illustrations are given of the new Secondary School, Bury, designed by Mr. J. T. Halliday, A.R.I.B.A.

Under Competition News (p. 243) references are made to the Seale-Hayne College, Newton Abbot, and to the Welsh National Eisteddfod.

The books reviewed are "The Housing of the Working Classes Act," "Butterworth's Compensation Cases," "A Digest of the Law of Easements," "The Inventor's Adviser" (p. 245).

Correspondence includes letters from Mr. J. A. Randolph *re* "Bruges"; Mr. E. R. Robson *re* "School Playgrounds"; Mr. Edward Vale *re* "Architects and Shop Design"; and one *re* "Salaries of Architects' Assistants" (p. 246).

In the illustrated Monthly Review of Civic Design (p. 247) will be found a review of Mr. T. H. Mawson's "Civic Art"; an article on "The Growth of a Town" (p. 249); an example of the planning of a seaside suburb (p. 250); and Notes.

The Building Trade Section includes an illustrated article on "Building Plant in Pretoria" (p. 252); "General Building News" (p. 253); and a list of "Projected New Buildings in the Provinces" (p. 254).

In the Legal Column (p. 256) reference is made to the distinction between a sewer and a natural watercourse.

Hutcheson's Girls' Grammar School, Glasgow, is described on p. 255; and on p. 257 is a note on the funds of the Road Board.

MEETING.

FRIDAY, SEPTEMBER 8.

Institution of Municipal Engineers of London, Victoria, 9.45. London Bridge, 9.50. Phoenix Ironworks, 11.0. At 8.10 leave for Seaford, where Air Compressing Station, Ejectors, and Refuse Destructor House, under construction, will be shown.

CORRESPONDENCE.

A Restoration en Règle!

Sir,—As appeared from the leading article of the *Builder* last week, and from an article a year or two ago about "Gheeraertising Bruges," in another architectural paper, a number of questionable restorations have been perpetrated in that city, and also, alas, in other parts of Belgium, such as Fermonde, where the splendid Renaissance gable on one side of the Town Hall's belfry has given place to a poor modern Gothic one, to match, if possible, a corresponding plain old Gothic one on the other side of the tower! But a welcome and interesting work is in progress at Ghent, where the restorer has already done good work during the last few years.

An International Exhibition is to be held there in 1913, and visitors who know the city will be agreeably surprised to find that the hideous armour-plated excrescence on the top of the belfry has been replaced by a lighter affair in masonry, more in keeping with Flemish architecture of the period of the tower, and not unlike the celebrated one at Ypres. This will enable the blocked-up windows in the body of the tower to be reopened and filled

with tracery, they having been filled in when the monstrous extinguisher was put on. A good many years ago we remember seeing, in the late Mr. De Potter's "History of Ghent," a print of the belfry as it used to be; but, as far as memory serves us, the new top will not be a reproduction of the mediæval one, which is a pity. One weak point in the adopted design is the traceried window behind each clock dial. It would have been more effective to have put twin windows, and not to have the "top" exactly octagonal, and the dial sides longer, the shorter ones being behind the corner turrets. The design is decidedly "thin" as regards that part.

We fancy the architect has a fondness for the tower of the Town Hall at St. Nicholas (Waes)—probably one of the best things from the pencil of a pupil of the St. Luke's School at Ghent. That school of Gothic architecture is slowly getting out of its original groove of monotonous mouldings and capitals and unoriginal and unvarying window-tracery design. Unfortunately, it still holds grimly to grey-wash on stone columns of restored church interiors, with black or white bands of $\frac{1}{4}$ in. or more in imitation of masonry joints, and to the fearful and wonderful mural decoration it introduced, justifying the rather abusive criticism in a non-Catholic local guide-book of an over-decorated chapel near the school as "une véritable bon-bonnière monacale!"

But, as the State has a voice in the belfry restoration, we hope to see detail more in accordance with the mediæval tradition than is to be found in the wearisomely monotonous detail as restored by the school in question, as at Audenaere (Benedictine), Tournai, Ghent (St. Jacques' interior), and elsewhere roundabout.

Even if the school varied its detail design, mouldings, window tracery, etc., it could never hope to produce a Truro Cathedral. In wood-carving and metalwork its pupils are, however, unapproachable, and in the matter of stone altars and statues they are much better than they used to be, though the features of the Saints represented are too sentimental and lacking in variety, the same remark applying to figures in their too transparent stained-glass windows.

We ought to see a Gothic school mediæval in its works, and not modern Gothic.

JOHN A. RANDOLPH.

The Architect's Assistant.

Sir,—I have been interested in reading "A Lesson of the Strike" in your valuable paper of last week's date, and with reference to your remarks, as to the "increase of charges" being laid upon the shoulders of the "manufacturer and trader," does the burden "rest" there? I think not; for these persons in turn hand it down by way of increased charges to the actual consumers or final purchasers—"the general public" (with interest). Thus we shall find the cost of living considerably increased.

This increased cost of living will not greatly affect the "master man" or the fairly "well-to-do," but the "poorer classes," among whom are not only included the "labourers," but also all classes of "clerks" employed in small houses of business, estate agents, and also architects' assistants, among the last two classes of whom will perhaps be found the worst or almost the worst paid of all.

I venture to suggest that, if inquiries were made it would be found that the "greater proportion" of architects' assistants (with whom your readers will be mostly interested) receive salaries averaging lower than that of "builders' labourers" (among whom, you state in your issue of the 18th ult., a strike is threatened for increased pay), or if not actually lower, then very little in excess of the "labourer"—this in spite of the fact that in very many cases substantial sums have been paid as premiums and low wages accepted for years to secure a knowledge of their profession, only to find at the end of it all that a "salaried berth" is practically impossible to obtain.

Surely, sir, the day has come when, among others, the lot of the clerk and the architects' assistants should be considered, and salaries paid in accordance with the skill necessary, and the apparent position they are expected to keep up.

AN ARCHITECT'S ASSISTANT.

Bournemouth.

School Playgrounds.

Sir, Adverting to your admirable "Note" in your issue of Aug. 18 on this subject, may I be permitted to say that the rule as to a minimum area of 30 ft. per child has never been regarded as "rigid," but rather as a suggestion to be followed under ordinary circumstances, and to be relaxed according to the facts of each case?

Also that it has never been held to apply to other than elementary schools, where the playground has been well called the "uncovered schoolroom."

I doubt whether half the elementary schools in London have playgrounds of 30 ft. per head.

A grammar school or a girls' high school needs much more space, where tennis, cricket, football, and other games are now regarded as indispensable.

E. R. ROBSON.

Architects and Shop Design.

Sir,—In the issue of the *Builder*, August 11, a Singapore architect suggested a masonry arch and piers for shops fronts, with showcases set back 6 ft. to 8 ft. from the arch, forming a kind of arcade. The arch and piers would be welcomed not only by the majority of leading shopkeepers, but also the shop-front specialists; as for setting back the plate glass 6 ft. or 8 ft. from the front, 90 per cent. of the writer's clients have never been able to keep the glass far enough out into the street, not to consider the waste of valuable space and the dark shades, an example of which we have in the Rows at Chester.

EDWARD VALE.

Weston super-Mare.


BOOKS RECEIVED.

ARCHITECTURAL HYGIENE. By Banister F. Fletcher and H. Phillips Fletcher. (London: Whitaker & Co. 5s. net.)

A MANUAL OF CIVIL ENGINEERING PRACTICE. By F. Noel Taylor, C.E. (London: E. Griffin & Co. 25s. net.)

ILLUSTRATIONS.

Architectural Association Excursion.

 R. CURTIS GREEN'S drawings of French châteaux were made during the above excursion, to which full reference is made on p. 239.

"The Story of the Bridge."

THE two bridges shown on our third plate are referred to by Mr. Shaw Sparrow in his article on p. 237, the fourth of the series.

FIFTY YEARS AGO.

From the *Builder* of August 31, 1861.

Emigration of Spitalfields Weavers.

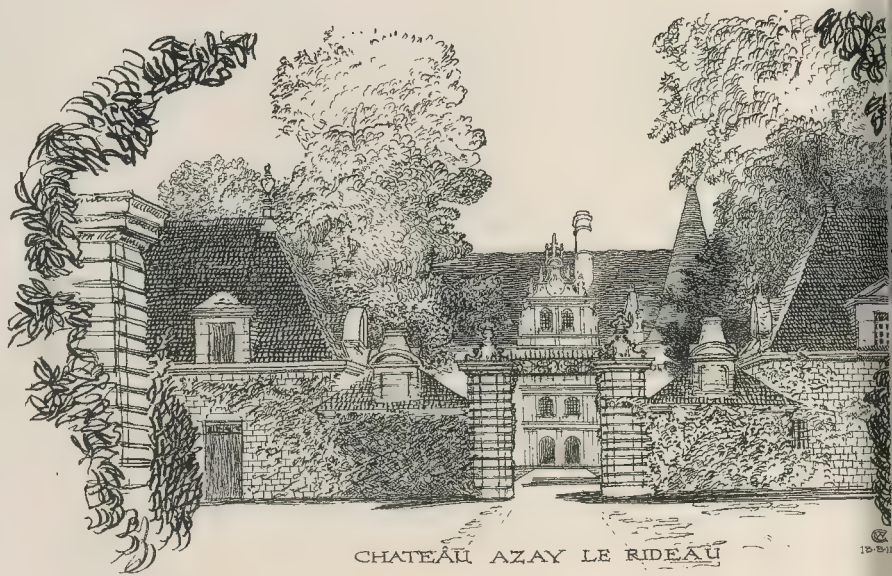
WE are glad to perceive that the emigration movement amongst the Spitalfields weavers has been commenced with some success; and by this time a number of families are on their way to Queensland, a place of promise.

NEW BUILDINGS IN LONDON.

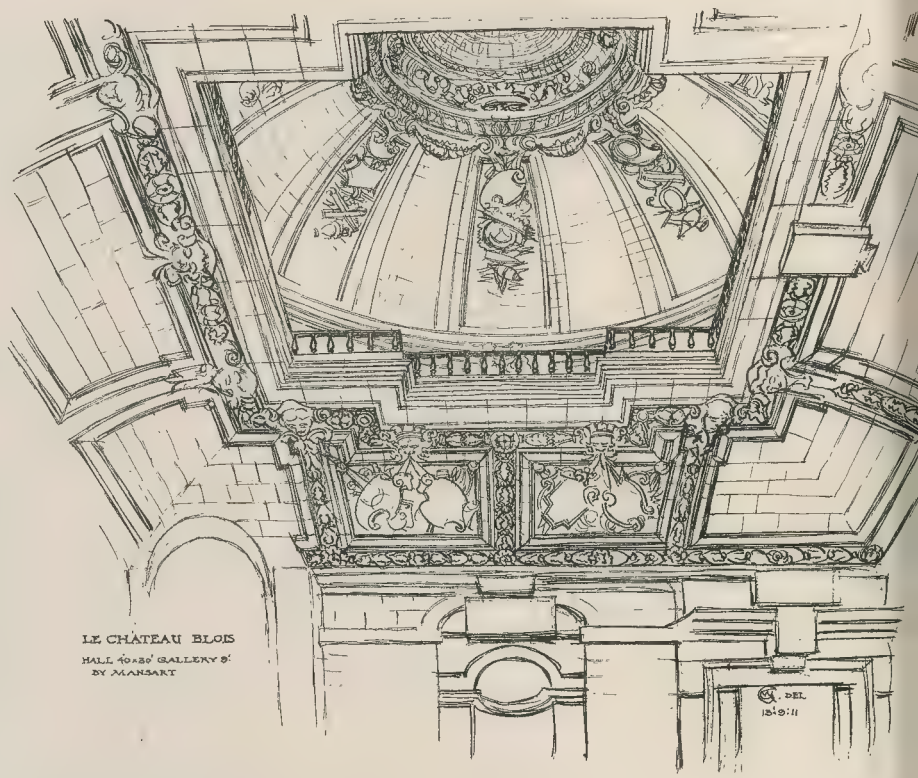
Block of residences, Park street and Upper Grosvenor street, W.; Mr. W. Willett, builder, Sloane square, S.W. Extensive buildings, Shaftesbury-avenue, W.C.; Mr. Bertie (revue architect, 75-7, Shaftesbury-avenue, W.O.; Messrs. J. Parkinson & Son, Ltd., builders, Blackpool.

GIRVAN, Ayrshire.

The Town Hall, Girvan, which has been completed recently from the designs of Mr. W. J. Jennings, of Canterbury, was opened formally a few days ago. Mr. John M'Master, the generous donor of the building, was given the freedom of the Burgh, and his bust, by Mr. John Tweed, was unveiled. The M'Master Hall, as it will be called, was built of Giffnock stone, the cost being about 20,000l. The contractors were:—Mason work, Messrs. Train & Taylor, Rutherglen; plumber work, Messrs. Steel & Wilson, Glasgow; slater, Mr. James Scott, Rutherglen; joiner, Mr. George Eaglesham, Govan; plasterer, Mr. W. A. Vass, Ayr; clerk of works, Mr. E. J. Norman.



CHATEAU AZAY LE RIDEAU



LE CHATEAU BLOIS
HALL 40x80' GALLERY'S
BY MANSART

C. DEL
1849-11



LOCHES. LE CHÂTEAU ROYAL.

PHOTO-LITHO SPRAGUE & CO. LITH. 487, EAST HARDING STREET, PETER LANE, E.C.

CURSION.—By MR. W. CURTIS GREEN, F.R.I.B.A.

THE BUILDER, SEPTEMBER 1, 1911.



Photo by Neundin Frères, Paris

THE VALENTÉ BRIDGE AT CAHORS, FRANCE.

Sprague & Co., Ltd., Printers, 4 & 5 West Landing St., E.C.



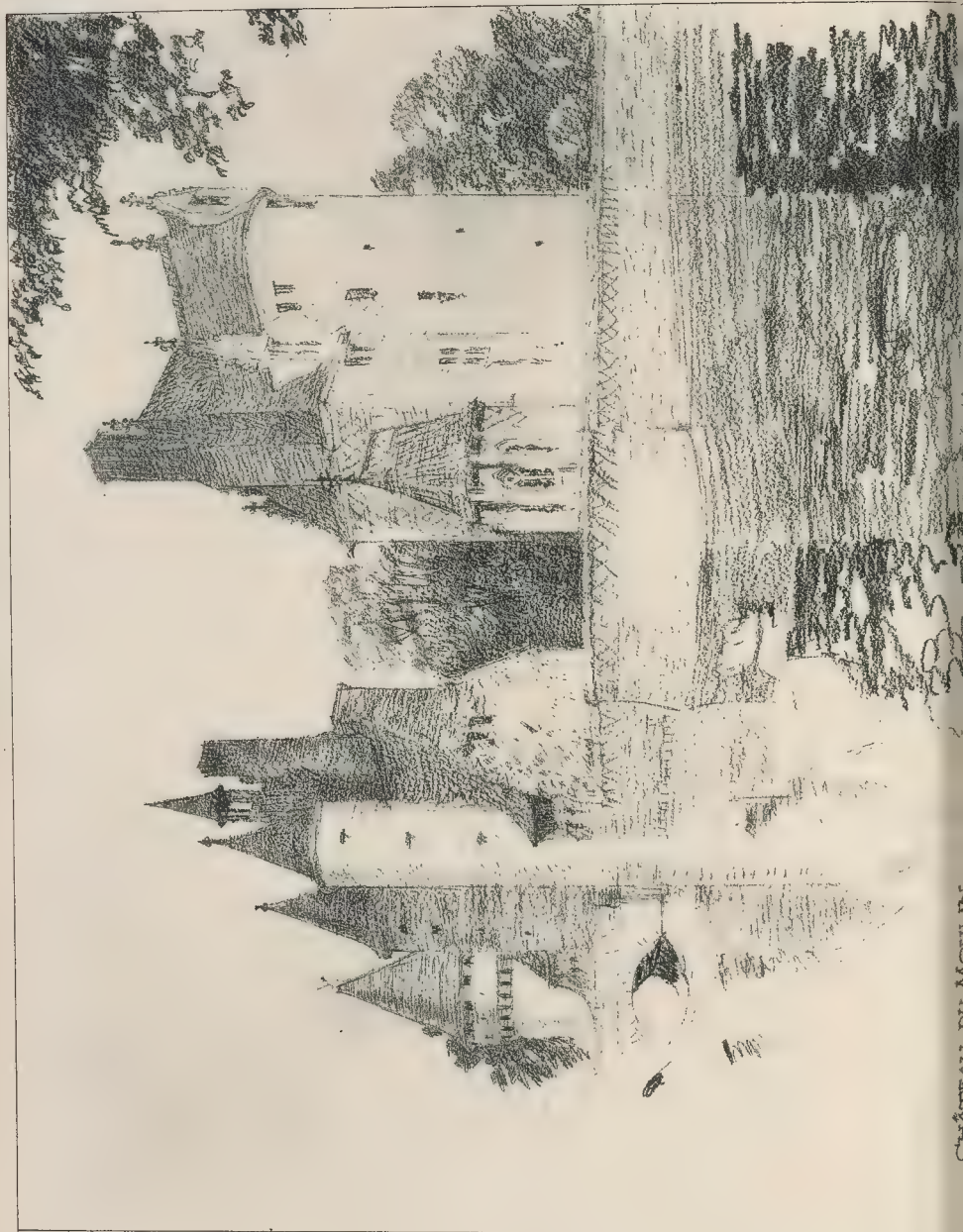
Photo by Nourdin Frères, Paris.

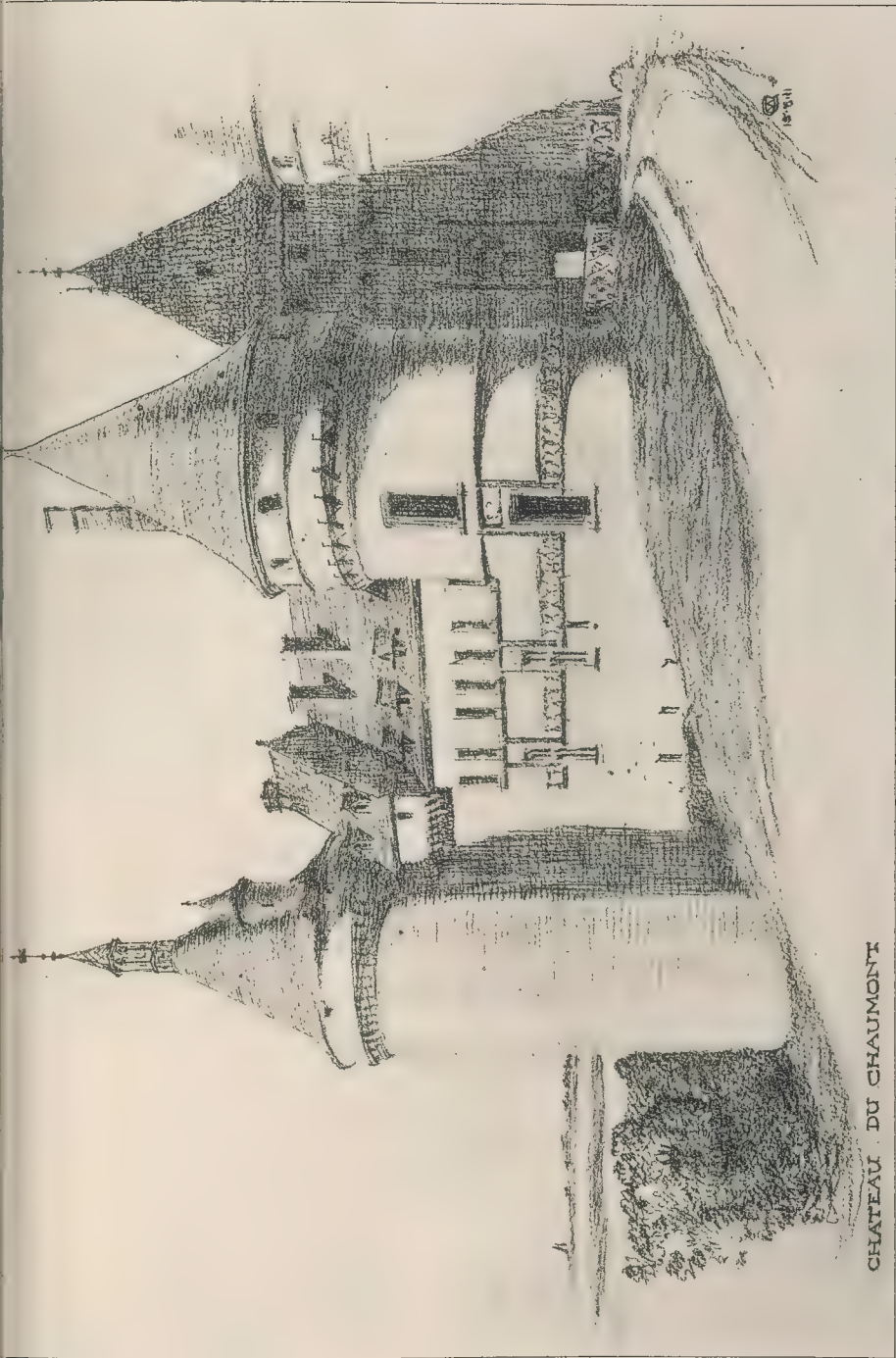
BRIDGE OVER THE THOUËT, ST. GÉRÉROUX (DEUX SÈVRES), XIVth CENTURY.

"THE STORY OF THE BRIDGE."—IV.

Sprague & Co., Ltd., Printers, 4 & 5 Park Harding St., E.C.

THE BUILDER, SEPTEMBER 1, 1911.





1/16 PHOTO SPRAGUE & CO. LONDON 4 & 5 EAST HAMPING STREET FETTER LANE E.C.

SKETCHES WITH THE ARCHITECTURAL ASSOCIATION EXCURSION.—By MR. W. CURTIS GREEN, F.R.I.B.A.

MONTHLY REVIEW *of* CIVIC DESIGN.

Church at Messina.

From Mr. Mawson's "Civic Art." (Mr. B. T. Batsford.)

THE LATEST "CIVIC ART."*

FOR a busy professional man to achieve a standard work in an important subject demands to an exceptional degree the faculty of abstraction from the details of practice and concentration on the systematic handling of the materials to be dealt with. It can hardly be said that Mr. Mawson in his book on Civic Art has shown he possesses this faculty. The sub-title, "Studies in Town Planning, Parks, Boulevards, and Open Spaces," very nicely represents the matters covered in the book, but when one takes up a work so monumental in its proportions entitled "Civic Art," the natural anticipation is that it will exhibit a comprehensive and logical exposition of the whole subject. This can hardly be claimed; indeed we do not gather that Mr. Mawson has intended to deal with his subject in this fashion, rather preferring to take up and develop those factors in which he felt an especial interest, and to ignore the rest, passing hurriedly over others of equal importance.

As a result, we find that, though his book contains a mass of interesting material and some valuable studies in tried aspects of civic design, there is a feeling of incompleteness and of a lack of cohesion if we consider it as a philosophic

study of the subject as a whole. This may be in part due to the arrangement the author has adopted. Surely architecture and the kindred arts are primarily based on the expression of material necessities, and the first essential in an exposition of Civic Art is to define the practical and ideal requirements on which it is founded. Though Mr. Mawson seems to possess a fund of information on such points, it appears only in scattered paragraphs throughout his work. Possibly he feared to frighten his readers by digging too deeply into these at the start, and consequently he leads off with four chapters on "The Theory of Civic Art," which, despite the numerous sound points made in them, would be the despair of any scientific student in the way they ramble from one aspect to another, and the erratic arrangement of the materials of which they are composed. In these chapters the issues are often confused rather than clarified by the numerous analogies and illustrative passages they contain.

In the succeeding chapters on "The Practice of Civic Art," Mr. Mawson is on safer ground. His valuable experience in this work entitles his views to respectful consideration; but even here he seems impatiently to skip over the first basic principles in his hurry to reach his extensive selection of concrete examples. Of what use to the

student is an example except as an illustration of a principle? And throughout this work we find the space devoted to views and examples somewhat disproportionate to that given to hard reasoning on the principles these illustrations should illumine. We must admit that the illustrations selected and the way they are reproduced deserve very high praise, and they will go far towards making the book a popular one; it is from the student's standpoint that we feel the work is not quite what it might have been. There is a fluent easiness in the writing that carries the reader on until he feels that somehow or other he has been carried past the point at which he should have been pulled up, and compelled to think out the meaning of the matter in hand. Thus the fifth chapter opens with a summary of the preliminaries to putting in operation a town planning scheme, and goes on to tabulate the primary desiderata of paramount importance. These are given as circulation and transit, hygiene and beauty. This, even with the explanatory notes that follow, is, to say the least, a very inadequate schedule, and in the course of a dozen lines we are carried on to such details as subways, tramlines, etc. Surely housing requirements and manufacturing methods, for example, exercise as much influence on the appearance of a city as the provision for transit which Mr. Mawson

* "Civic Art." By Thomas H. Mawson, Hon. A.R.I.B.A., with over 250 illustrations. B. T. Batsford, 24, 10s.



Bridge and Gateway at the Hague.



Sieges Allee, Berlin.

From Mr. Mawson's "Civic Art." (Mr. B. T. Batsford.)



Temple de L'Amour, Palais du Petit Trianon.

From Mr. Mawson's "Civic Art." (Mr. B. T. Batsford.)

claims as representing two-thirds of the anatomy of the subject; while political and social factors can hardly be entirely disregarded.

The chapter on Street Equipment seems to suffer from a confusion in the ideal aimed at, and it would have been well to have included here some notes on the artificial lighting of streets—a matter in urgent need of study at the present time. In the following chapter on Boulevards, etc., Mr. Mawson is on his own ground, and the hints he offers deserve the most careful study.

Both this and the succeeding chapters contain much of indubitable value, and our only regret is that other branches of the subject have not been handled with the same thoroughness. We could have spared some of the examples of the treatment of comparatively unimportant problems if by that means room could have been found for the fuller rendering of the principles which must be mastered by all who aspire to success in Civic Design.

Mr. Mawson's motto may be "Example is better than precept," but the publication of a multitude of examples is not the most efficient way of imparting instruction in any art, and least of all in one so complex as that of Civic Design.

THE GROWTH OF A TOWN.

WE extract the following from a lecture on "Town Planning," by Mr. A. R. Jemmett, F.R.I.B.A., being one of a course of six delivered at the London County Council Westminster Technical Institute:—

"To endeavour to trace the growth of a town from a primitive collection of huts to its present highly-organised state it would be necessary to trace the rise and progress of civilisation in general, and the social life of towns in particular, and to show at every point how this growth expressed itself in its arrangements. This is obviously beyond the scope of these lectures.

On the historical side of the subject there is a very wide field of inquiry open to those who may have a taste for historical research.

Before we can obtain the full advantage of the study of existing towns, it seems necessary to realise that we cannot consider them as isolated and complete designs in themselves independent of the arrangement of the surrounding country and of the existence of other towns. We must also realise what town planning is from what may be called the outside point of view, and see how it fits in with the general scheme of things.

We have seen that it is the art of arranging a town to serve the needs of its inhabitants, and from this point of view it seems a complete subject in itself. Really, however, it is part of a larger subject—the art of planning.

The art of planning is the art of arrangement. To plan is to contrive to scheme to arrange anything that is capable of arrangement—not necessarily towns.

The whole scheme of ordered civilised existence is a plan of which town planning is a part. It is the outcome of, and it depends upon, the plans of the statesmen or the social organisers who created the laws and customs of the civic life which is expressed in our plans. The connexion between the two is intimate and close, and we cannot consider one without the other.

That aspect of planning which most concerns us is the one that deals with the arrangement of the surface of the earth and the buildings upon it in accordance with the needs of those who occupy it, but always in conformity with the political or social plans that gave rise to those needs. So that the whole of our subject is only a part of the plan of civilisation.

Most plans, however complete they may seem in themselves, are only part of a larger plan, and are themselves made up of smaller ones. The plan of the city, composed of a collection of the plans of individual buildings, themselves a collection of plans of separate rooms, is but a part of the plan of the whole country, itself a part of the plan of the surface of the earth, which, after all, is but a point in the general plan of the universe.

The planning of a town, then, comes midway between larger and smaller plans—the planning of a building and the planning of a district—and it is not quite easy to say where one begins and the other ends, to dissociate the planning of the town from that of the country immediately dependent on it, which in turn affects the arrangement of the town. The art of planning is the same in both cases. The same skill that plans a town plans a house. It is the same art that groups the cottages and farms into hamlets and villages that governs the position and arrangement of market towns and cities, and plans the lines of communication between them. Planning is the art that arranges the whole surface of the earth to render it fit for human habitation; our branch of it is concerned with the arrangement of buildings in relation to one another, not so much planning the buildings themselves as planning the spaces between them.

If we look back to the beginning of things and consider all we know of nature's plan for the arrangement of the surface of the earth, we see a gradual development from a state of chaos in which no animal life was possible up to its present condition, a development in which each form of life appeared as the conditions became suitable for its existence; but we find no attempt on the part of nature to do more than provide an environment within which it was possible for such life to exist and develop of its own initiative. Each form of animal life had to arrange this environment for itself in accordance with its own needs in order to support existence. The higher the form of life the more arrangement was necessary. When we come to the arrangement that man has found necessary to his physical, mental, and spiritual needs, we arrive at planning as a fine art.

Considered from this point of view, then, planning is the oldest of the arts. Its first practitioners were the animals. They arranged the surface of the earth to suit their own needs, till they covered it with a network of paths, which, following the lines of least resistance, would be determined by the natural formation of the ground, the lay-out of hills, rivers, and swamps, through which

they would discover by degrees the easiest and safest way.

These paths would be used by primitive man as we see them used to-day in primitive or undeveloped countries. The more important of them being recognised as the easiest lines of communication would—as in the case of Portage-avenue, Winnipeg—in the course of time, become roads, and so determine the position of primitive settlements, which later on grew into towns.

The majority of inland towns having sprung up at cross roads or the intersection of main lines of communication, and their ultimate growth and prosperity having, before the days of railroads, been largely dependent on these natural lines of communication, it seems impossible to understand the growth of any town or the nature of its trade without taking this into consideration and studying the town as part of the whole district.

The historical aspect of town planning seems to divide itself naturally into two parts, the social and the geographical—the human being, with his desires and needs, and his environment, the physical formation of the earth he lives on—social progress as affected by geographical conditions. The two things are really inseparable, and must be studied together.

When we come to consider the life of the inhabitants of the primitive towns, whose position was so often dictated by geographical

considerations, we find a rude state of society, an incomplete social organism; in fact, a mere rudimentary beginning of a completely organised corporate life. This lack of organisation we find expressed in their plans, which show a total absence of any attempt at unity of conception. The civic life being little better than a fortuitous aggregation of individual units, the plan is little better than an accidental collection of houses. Each house is designed separately, with no regard for its neighbours or for the general welfare; the streets receive no consideration, and are just that part of the area of the town which does not happen to have been built on. The houses are the result of deliberate design, the streets the result of accident—just the space left over.

Civic life being so elementary, the individuals had hardly yet begun to see the advantage of surrendering their personal rights for the common good—the individual life was not yet merged in the corporate life. Everyone was fighting simply for his own hand.

The plan, then, with its houses of all sizes and shapes, and its streets of no shape at all might be considered a most interesting expression of the various individuals comprising the population. The position and relative sizes of the houses might give a very fair idea of the strength, greed, and cunning of the various original owners, but the only idea

it gives of the corporate civic life is that such life did not exist except in the most primitive form for the sake of mutual protection, as illustrated by the walls or other means of defence, which suggest combination and not individual effort.

Town planning being the art of arranging or designing the position of, and the space between, buildings, the moment two buildings are placed sufficiently near to one another to influence each other town planning begins. In this rudimentary state it may perhaps be traced in the streets of these primitive towns as each individual desires to obtain access to his house (so making the street necessary) might be supposed to carry with it so recognition of the same desire on the part of others, so leading to a common agreement to the streets. It seems, however, to attain to the dignity of a complete art at the moment in the history of the development of the civic life of the town when the sense of a corporate life is first realised, when the corporate life awakes and becomes self-conscious and asserts its predominance over the life of the individual. This may be traced in a plan at the moment when the arrangement of the streets—the public places—obtains precedence over the arrangement of the houses—the private places.

But when this moment of the awakening of the corporate life arrives, the town already built, and it is too late for the



THE BUILDING TRADE.

BUILDING PLANT IN PRETORIA.

By H. BRILL-JOHN, F.S.I., A.M.S.E.

THE average architect takes little thought of the plant used on his buildings. He trusts to the contractor, for his own sake, to use the plant necessary for the work, and, as far as estimating the value of it goes, the architect, if the contract provides for it, generally allows in his certificates an amount based more or less on the contractor's suggestions. The description of plant used must necessarily depend on the construction of the building concerned, and on whether the materials can be worked before delivery on the site or whether the chief part of the labour is actually done on the premises. Stone may be worked at the quarry or altogether on the site. The contractor may, if circumstances warrant, elect to have all his joinery prepared on the site of the building to be erected, he may make it in his own shops, or he may purchase it from a "steam joinery works." The conditions in the "Old Country" are more or less stable, and the outcome of long development. In the colonies it is somewhat different; and necessarily circumstances differ in each colony. What Canada may find easy South Africa may find difficult to accomplish, and what may be a perfectly simple matter in South Africa may be rendered very difficult in Canada or Australia, owing to variety of labour conditions and other causes.

Even in South Africa "the coast" and "up country" are two very distinct zones, the long railway journey from the coast to the interior rendering materials and labour on the whole very much more expensive in the latter than at the former. When, therefore, labour conditions in South Africa are referred to, it is necessary to bear these facts in mind. In these notes Pretoria alone is dealt with. It is also intended to deal not with questions of labour and plant in Pretoria in general, but only with reference to some of the larger public buildings now in course of erection under the supervision of the Public

Works Department of the Union of South Africa.

A royal visitor from overseas not long ago was good enough to air his views locally as to the building plant in Pretoria, much to the disgust of the building contractors thereof. Visitors from overseas are such candid, quick-learning, and even omniscient fellows that they see through the poor colonial in a trice and know more of local conditions in a fortnight's stay than the ordinary local man gets to know in a busy lifetime. I propose giving my facts under the heads of the several contracts.

Union Government Buildings.

The new Government buildings for accommodating the head offices of the Union Departments naturally take first place. The architect is Mr. Herbert Baker, who has conceived the scheme in a bold spirit. An excellent description of the buildings may be read in a paper read before the South African Association for the Advancement of Science not long ago by Mr. Lucas, of Pretoria. The work is being carried out under two contracts, the extensive site work being executed departmentally.

The larger contract is held by Mr. M. C. A. Meischke, the amount being 622,500*l.*, and the time given for completion thirty-six months. This contract embraces the western and eastern blocks, which are more or less duplicates. The building being stone-faced throughout, with a large amount of reinforced concrete in floors, etc., necessarily decides the character of the machinery and plant used. In June the basements were partly in and the ground floors begun. There are fifty-two cranes of various kinds on the works, including two 5-ton steam cranes, three 5-ton electric, four 3-ton electric, one 3-ton steam-travelling crane, and forty-two hand cranes of powers varying from 15 cwt. to 5 tons.

The site being halfway up a steep hill (Meintjes Kop) overlooking Pretoria, it will be understood that a considerable amount of traction or hauling plant is required. There are two steam-hoisting engines, and thirty-five electric motors for driving machinery aggregating 550-horse-power.

The large amount of concrete used necessitates the use of two stone-breakers and concrete "batch" mixers. There is a mortar-mixer and a ball mill. For work on stone there are four planing machines, two swing saws, two diamond saws, and two tinning lathes. There are also a metal-turning lathe, two metal-drilling machines, and woodworking machines of various kinds. There are blacksmiths' forges, sheds for machines, men, materials, natives' quarters, scaffolding, etc., bringing the total value of plant up to about 33,500*l.*—no small item for consideration in entering into a contract of this kind.

The second contract, that for the main theatre or central block, is held by Messrs. Prentice & Mackie, and amounts to 256,200*l.*, the time for completion being thirty months. It will be understood that the plant required is not so extensive as in the previous referred-to contract, but no small outlay is involved. The approximate value of plant in use is over 18,000*l.*, and its character is more or less similar to that used by Messrs. Meischke, a large amount of tram track trucks being required, temporary build and other general items costing fairly large sums. Scaffolding and centring for floors valued at 2,500*l.*, electric wiring at 575*l.*; rendering necessitated an expenditure of 420*l.* this firm alone for their own purposes; a water service cost 430*l.* Of cranes there are 5-ton, one 4 ton, three 3-ton electric, one 5-ton steam, twenty-six hand cranes hoisting from 1 to 7 tons, an overhead crane, one steam two electric hoists. There are two steam crushers and engines, two stone-planing machines, two stone saws, and two tinning lathes, the three last items costing about 1,750*l.* There is an electrically-worked concrete-mixer worth 275*l.*, and woodwork machinery valued at over 300*l.* Electric motors, plumbers' and blacksmiths' out of an iron saw, and various smaller items help swell the total value. The machinery at contractors' workshops near the centre of town is valued at over 1,000*l.*, and includes two electric motors aggregating 36-horse-power, band, circular, and cross-cut



New Museum and Library, Pretoria: Showing 5-ton Cranes, 75-ft. and 80-ft. Jibs.



New Museum and Library, Pretoria: Laying Reinforced Concrete Floors.

drilling machine, shaping machine, and usual woodworking, planing, and moulding machines.

New Railway Station.

the existing railway station at Pretoria is a very poor affair, but the new building will be worthy of the administrative capital of the Union. The European portion is partially completed, while the Kafir station, on the site of the present buildings, will not be begun until the European portion is completed. Messrs. Prentice & Mackie are the contractors, their price being 91,284l. 6s., and the work for erection eighteen months. The architect is Mr. Herbert Baker.

The fronts are all of Orange Free State stone, and all floors are of reinforced concrete and wood. The close proximity to rail-sidings obviates the necessity of using a tram track or other hauling gear, but it is necessary, and this, with scaffolding, costing about 1,650l. Two grinders and an emery grinder cost 35l., woodworking machinery 230l., a pipe-screwing machine 75l., a pump 30l., and a concrete-mixer 150l. There are four electric motors and a stone saw and saw. Hoists and cranes are valued at 2,600l., and include twenty-one hand cranes of from 2 to 5 tons, a 5-ton steam crane, an electric crane, and 30-cwt. electric hoists. Among the smaller details may be mentioned 1,000 pulleys, and the same number of 12-ft. scaffold boards. For flooring, brick, etc., there are 3,000 super. yds. of 9-in. deal, and 48,000 ft. lineal of 4-in. The contractors' and clerk of works' office is in brick, and is valued at 1,000l. An ingenious device for bending wire reinforcement for floors was designed and used by this firm, and is found to serve its purpose admirably.

New Post Office.

the date of writing there is comparatively little plant on the works in comparison with what was used at one time, as the building is nearing completion. Readers can judge for themselves that no small outlay would be required for a contract of this nature amounting to 118,500l., and for which eighteen months was allowed. Mr. W. Nottingham, the contractor, has done most of the joinery at his Arcadia workshops, about a mile and a half from the building. The site of the Post Office (on which the old single-story building stood) is on the corner of Church-street and Church-street West. The building is faced on these fronts with freestone, and elevations are in brick, and reinforced concrete is used for floors, etc., the flat roof is covered with three layers of sheet iron.

New Museum and Library.

It is not long ago that the stranger paying his first visit to Pretoria would have been struck by the desolate appearance of the town-square and Market-street, which leads to the centre of the city. Church-square has for many years surrounded by several ancient buildings, including the Palace of the King, the Raadsaal, and the Grand Hotel. The new Post Office is now added on the west

side. Between the Church-square (from which the church which gave it its name was removed some years ago) and Station-square Market-street is poorly built for nearly the whole of its half-mile length. About midway between the squares the new Museum and Library is now being built. This structure, for which the contract price is 102,164l., is due to be completed about February, 1912, the contractor being Mr. W. R. Dey. Concrete and stone are important materials of construction, the freestone being worked on the site, as in the case of all the other buildings referred to. The hoisting of large blocks of stone weighing from 5 to 6 tons and the work involved in mixing and laying large areas of concrete flooring require the hoisting machinery to be well chosen and well placed. One interesting feature on this contract is the turning and polishing of stone columns in blocks of about 5 tons each. On the site are three 5-ton electric cranes and twelve hand cranes of various powers. The three gantries alone for the 5-ton cranes are worth about 100l. each. The stoneworking machinery includes a stone saw, planer, and lathes. There are three electric motors worth 70l. each, and a concrete-mixer with hoist and tower worth 450l. Circular and band saws, forges, rails, trucks, and sheds for workmen, materials, and natives help to run up the value of plant used. Scaffolding includes 500 poles, 10,000 ft. of 1½ in. by 9 in., and 600 pulleys. The contractor's and clerk of work's office is in brick, worth about 200l., and the total value of plant on the site is nearly 6,000l.

University College.

The old Boys' High School, used as a prison during the late war, and from which Mr. Winston Churchill escaped, is situated more or less in the town of Pretoria. A few years ago a new school for boys, with boarding-

houses, was built on the high ground opposite the Governor-General's residence in the Eastern outskirts of Pretoria. Between these two buildings, one on the top of a ridge and the other on the side of an opposite ridge, lies a wide valley—the valley in which farther west lies Pretoria proper. It is here the new University College buildings are in course of erection. There are two blocks of buildings, the arts and science blocks, the latter costing 10,000l., and the former 32,000l. The science block is completed, and is a single-story building of brick, plastered walls with stone dressings, and Marseilles tile roof. The arts block, to be completed shortly, is double-story, with Waterfall stone facings, concrete and wood floors, and Marseilles tile roofs. The nature of the construction does not require such extensive plant as the Union buildings or the other works referred to, but stone-working machinery, including saw and planer, is worth 850l., and to this must be added the value of a semi-portable steam engine. Two hundred and fifty scaffold poles, 600 pulleys, and nearly 1,000 scaffold ropes were required. Sheds for materials, workmen, and natives are always necessary, and there are eleven cranes of various powers. Water storage had to be provided, and centering for floors, etc., was worth about 320l. Mr. J. J. Kirkness, the contractor, has probably 4,000l. worth of plant on the site.

Generally.

In addition to the foregoing, it should be remembered that all these contractors have their own well-equipped workshops, and also that a large amount of haulage by traction engine and road trucks has been and is being done. The cost of engines may be anything up to 1,000l. each, and trucks are required in fairly large numbers. This item cannot be fairly set against one contract, although it may have been purchased or added to for the purpose thereof.

I have dealt with five buildings in Pretoria alone, but I hope it has been shown that this country is not lagging in the march of progress.

GENERAL BUILDING NEWS.

SCHOOL AT BEARDSDEN, NEAR GLASGOW.

Messrs. James M. Munro, F.R.I.B.A., & Son have recently completed a higher-grade school at Beardsden. The accommodation is for 750 pupils, and besides the usual instruction-rooms there is one specially equipped for art students.

ELDON PARISH CHURCH HALL.

Mr. William Davidson, of Edinburgh, is the architect of this building, the cost of which is estimated at about 1,100l.

DARTFORD.

The lease of the building used by the Dartford Urban District Council as a weights and measures office having expired, a freehold site has been acquired at a cost of 90l., and a building is to be erected by the County Architect.



New Railway Station, Pretoria: Appliance for Bending Steel Mesh Reinforcement for the Ceilings.

NEW INFIRMARY, PERTH.

On the 26th ult. the foundation-stone of the new City and County Royal Infirmary, Perth, was laid by Mrs. C. A. Murray, wife of the Chairman of Directors. The building, which is being erected from designs by Mr. James Miller, A.R.S.A., of Glasgow, is estimated to cost £6,190*l.*, and will consist of four main ward blocks, each two stories in height, with an administrative block in the centre, all of which will be connected by a corridor running the entire length of the building. Each of the main wards will contain twelve beds, and in addition a single and double bedroom on each floor. The administrative block will comprise an entrance hall, office, matron's room, sitting-rooms for visiting staff, and bedroom accommodation for resident physicians. Accommodation will be made for the nurses in the main block, the plans showing thirty-two single bedrooms, with a sitting-room and a writing-room. The kitchen and stores will be situated towards the back of the central block. On the east side will be placed the prescription and out-patients' department, while the dispensary will be so situated as to conveniently serve both the out-patients and the Infirmary proper. Quite separate from the other buildings will stand an isolation block for suspected cases. There will be two laundries, one for the use of the patients, the other for the staff.

SUNDERLAND INFIRMARY.

At the Sunderland and Durham County Eye Infirmary, Sunderland, a new operating theatre has been built. Captain Butchart superintended the whole of the new erection and alterations.

BIRKDALE.

It is proposed to erect about one hundred houses on the Birkdale Esplanade. The District Council are considering the plans.

MISSION HOUSE IN KINGSWAY.

The new building for the West London Mission, erected in Kingsway from the designs of Messrs. Gordon & Gunton, will be ready soon for occupation. A feature of the building is the roof garden or open-air orche, from which can be seen Harrow Church and the Crystal Palace.

MORRISTON, GLAMORGAN.

The six new tin-plate mills plant put down by the Beaufort Tin-plate Company will be in readiness shortly for the production of tin-plates. Messrs. W. H. Edwards & Co., of the Dyffryn Works, Morriston, have commenced operations on the mills. Excavations for the foundations, etc., have begun, and the work is entrusted to Messrs. John Aird & Co. The contract for erecting the driving machinery and boilers has been given to Messrs. Gallo-way, of Manchester.

EPPING.

Extensions, to cost 11,000*l.*, are in progress at the Epping Workhouse. The foundation-stone was laid recently by Mr. W. S. Chisen-hale Marsh, Chairman of the Guardians, who said that the scheme had been forced upon them by the Local Government Board.

TRADE NEWS.

The statutory meeting of Samuel Blow, Ltd., was held on Tuesday, 22nd ult., at the registered office of the company, 34 and 35, Upper East Smithfield, E., Mr. G. Samuel Blow in the chair.

The new schools at Hyson Green, Nottingham, have recently been fitted with D. O. Boyd's warm-air ventilating grates, supplied by Messrs. O'Brien, Thomas, & Co., Upper Thames-street, London, and Excelsior Works, South Bermondsey.

Boyle's latest patent "air-pump" ventilators have been applied to Clewer Green Schools, Windsor.

The Claybrooke Council schools are being supplied with Shorland's warm-air ventilating patent Manchester grates, by Messrs. E. H. Shorland & Brother, Ltd., of Failsforth, Manchester.

In the block of flats, Sylvester House, Hackney, N.E. illustrated in our issue of August 25, we should like to point out that the red facings or dressings used for this work were of Messrs. Thomas Lawrence & Sons' "W.K." machine-pressed smooth-faced facing bricks.

A new Council school is being erected at Maesmaroch for the Glamorgan County Council, under the direction of their architect, Mr. W. James Nash, A.R.I.B.A., of Neath. The Lift and Hoist Company, of Deptford, are fitting three of their folding partitions.

The George Hotel, Broadway, Hammer-smith, is approaching completion. The architects are Messrs. Nowell Parr & Kates, M.S.A., Kew Bridge-road, S.W., and the contractors Messrs. Joseph Dorey & Co., Ltd., of Brentford. Five lifts are being installed by the Lift and Hoist Company, Premier Engineering Works, Deptford, S.E.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ALFORDS.—Enlargement of Church of England school, Church-road; the Managers.

Ashey-de la Zouch.—Additions to hospital; architect, care of the Trustees of the Cottage Hospital.

Asken.—Proposed 2,500 houses for the Asken Colliery Company.

Aston (Birmingham).—Additions, Wright's premises; Messrs. A. Harrison & Cox, architects, 108, Colmore-road, Birmingham; Mr. W. Harvey Gibbs, builder, King's Heath, Birmingham.

Bedwellty (Mon.).—Police station; Mr. W. Tanner, architect, Shire Hall, Newport.

Birmingham.—Proposed branch premises for Birmingham Co-operative Society. Alterations, etc., to bakery at Leamington, for Banbury Co-operative Society; Mr. F. J. Cooke, architect, Birmingham and Banbury.

Blackrod.—Club-house; Vicar, Parish Church.

Bolton.—Extensions to Townley's Hospital (23,550*l.*); Mr. H. J. Cooper, Clerk, Board of Guardians, Bolton.

Bradwell.—Enlargement of school; Mr. Riley, architect, Education Office, Aylesbury.

Broadstairs (Kent).—Offices and showrooms for the Broadstairs Gas Company.

Broadwell Hayes.—Housing scheme; Mr. B. Meley, Surveyor, Tenby Town Council.

Buckton Vale.—Extensions to Buckton Vale Printworks; architects, care of the proprietors.

Burscough.—Laundry, Victoria-street, for the County Laundry Company.

Caledon.—Dispensary and doctor's residence, Castle lane; Clerk, Board of Guardians, Dun-gannon.

Canonbie.—Parish hall; Surveyor to Parish Council, Canonbie.

Carnarvon.—School; Managers, Roman Catholic school, Carnarvon.

Charley.—Nine houses, Thorpe (1,820*l.*); Mr. William Beauchamp, builder, 25, Victoria-street, Englefield Green.

Clones.—Catholic hall, Church-hill; Mr. J. McDonnell, architect, Belfast; Mr. Isaac Copeland, builder, Whitland-street, Belfast.

Clydebank.—Proposed building on site of Morison Memorial Church; Surveyor, Clydebank Town Council. Extensions to joiners' premises at shipbuilding yard for Messrs. John Brown & Co. Store, etc., Richmond-street, Whitecreek, for the Clydebank and District Water Trust.

Courthill (Poole).—School (4,000*l.*); Mr. Newman, Town Hall, Poole.

Daston, Hilly Field, Gooles, Alltofts, and Norton.—Schools; J. Stuart, County Hall, Wakefield.

Dartford.—Weights and measures offices, etc.; Mr. H. F. Maybury, Surveyor, Kent County Council, West Borough Chambers, Maidstone.

Dodworth.—Proposed new Council offices, etc.; Mr. G. Strutt, Surveyor, Dodworth Urban District Council.

Doncaster.—Factory for Messrs. Anderton & Son, mill owners, Cleckheaton.

Dramlog. N.B.—Memorial Church; Mr. J. McClellan Fairley, architect, Edinburgh.

Dunfermline.—Women's institute, Bath-street (7,500*l.*); Carnegie Trustees. Drill hall, Elgin-street (3,000*l.*), for the Fife Territorial Association.

Dunvant.—Chapel; Mr. W. David, architect, King Edward road, Swansea.

Durham.—Secondary school (11,000*l.*); Mr. G. F. Coates, architect, Shire Hall, Durham.

Eldon.—Church hall; Mr. W. A. Kellett, architect, Bishop Auckland.

Elstree.—School; Mr. U. A. Smith, County Architect, Hatfield.

Falkirk.—Board-room, etc. (1,800*l.*), for the Bainsford and Grahamstown Co-operative Society.

Farcat.—School; Mr. W. Leete, County Offices, Huntingdon.

Felling and Spennyymoore (Durham).—Police stations; Mr. W. Crozier, County Surveyor, Shire Hall, Durham.

Ferry Hill.—Church, Dean Bank; Mr. J. E. Grossart, architect, Sacriston.

Frinton-on-Sea.—Free church; Mr. W. Mayne, architect, Frinton; Messrs. Potter & Sons, builders, Chelmsford.

Gainsborough.—Twenty-one houses (about 200*l.* each); Mr. S. W. Parker, Surveyor, Gainsborough Urban District Council.

Gateshead.—Superstructure of asylum (76,600*l.*); Messrs. William Moss & Sons, Ltd., builders, Baxter Gate, Loughborough.

Glasnevin.—Alterations, Marlborough House; Mr. J. F. Fuller, architect, 179, Great Brunswick street, Dublin.

* See also our list of Competitions, Contracts, etc., on another page.

Gloucester.—Adaptation of No. 3, Well-ton-parade into nurses' home; Mr. H. A. Armitage, Clerk, Board of Guardians, Gloucester.

Gringely-on-the-Hill.—Proposed restoration of parish church (3,500*l.*); the Vicar, Gringely-on-the-Hill, near Retford.

Halstead.—Swimming baths; Mr. Cressall, architect, High-street, Colchester.

Hanley.—Extensions to electricity works; Mr. P. Solon, architect, Town Hall, Stoke-on-Arden, builders, Burslem.

Heddingham.—Alterations, etc., to Isola Hospital; Mr. W. J. Eldson, builder, S. Heddingham.

Helensburgh.—Block of buildings corner West Princes-street and St. Sinclair street; Mr. W. Hunter McNab, architect, Glasgow.

Hockley (Birmingham).—Tramway depot; Messrs. Martin & Martin, architects, Colmore-road, Birmingham; Mr. T. Johnson, builder, Great Brook-street, Birmingham.

Huddersfield.—Dwellings, Mold Green, a model lodging house; Mr. K. F. Campb, Engineer, Huddersfield Town Council.

Ilkeston.—School; Mr. H. Tatham, architect, Sudbury.

Keighley.—Extensions to baths; Mr. Fowles, Surveyor, Keighley Town Council.

Kiveton Park.—New Council chamber, of Mr. J. P. Evans, Surveyor, Kiveton Park Rural District Council.

Linslade.—County school; Mr. Riley, Education Office, Aylesbury.

Llanelli.—Cottage hospital; Mr. D. Edwards, Clerk, Board of Guardians, Llanelli.

Loanhead.—Extensions to engineering workshop for Messrs. McFaggart & Scott.

Low Fell.—Presbyterian church (4,000*l.*); Pastor, Low Fell Presbyterian Church.

Melbourne.—Bakery and shop, Market-place, for the Derby Co-operative Society.

Newcastle-on-Tyne.—Hospital (18,000*l.*); Mr. J. Atkinson, Clerk, Board of Guardians, Newcastle-on-Tyne.

Newton Bank.—Extensions to Newton Bank Printworks for the Calico Printers' Association; Newport and Abercrombie (Mon.). Drill hall for the Monmouthshire Territorial Association, Newport.

Newport (Mon.).—Police station; Mr. Tanner, architect, Shire Hall, Newport.

North Bierley (Yorks).—Extensions to woollen mill (1,000*l.*); Mr. J. E. Helmsley, Clerk, Board of Guardians, North Bierley.

Parkstone (Poole).—Enlargement of school (5,000*l.*); Mr. Newman, Town Hall, Poole.

Park View.—Twenty houses for the Park View Building Club.

Pendyaren.—Proposed 300 municipal houses; Mr. T. F. Harvey, Surveyor, Merthyr Tydfil Municipal Council.

Potters Bar.—Parish church (8,000*l.*); Mr. H. Hocombe, Secretary, Building Fund, of the Vicar, Potters Bar.

Radecliffe.—Infirmary (30,000*l.*); Mr. Popley, County Architect, Shire Hall, Nottingham.

Romford.—Post office, South-street; Mr. Willmott, builder, Woodford Wells.

St. Albans.—New premises for Messrs. Ryder & Sons, seed merchants; Mr. E. Mowbray, architect, London-road, St. Albans.

St. Albans.—New premises for Messrs. C. & C. W. Miskin, builders, St. Albans.

Seaforth.—Reading-room and alterations existing buildings, Bowersdale Park; Mr. Thomas Spencer, builder, Aintree.

Shepton Mallet.—Proposed swimming bath; Mr. D. Hinchcliffe, Surveyor, Shepton Mallet Urban District Council.

Southend-on-Sea.—Presbytery at Roman Catholic Church for Rev. Van Meenen.

Sutton Coldfield.—Additions to "The Hawthorns" (2,000*l.*); Mr. T. Willmott, architect, 6, Waterloo-street, Birmingham.

Tibberton.—Institute; Mr. J. B. Wiseman, builder, Newport.

Torquay.—Alterations to Imperial Hotel (5,000*l.*); Directors, Torquay Imperial Hotel Company, Ltd., Torquay.

Tralea.—Extension, Presentation Convent; Mr. S. F. Hynes, architect, 5, South-mews, Cork.

Wallsend-on-Tyne.—School (12,000*l.*); Messrs. Marshall & Tweedy, architects, Newcastle-on-Tyne.

Wellington (Salop).—Annexe to workhouse (460*l.*); Mr. J. Carver, builder, care of Mr. J. Jones, Clerk, Board of Guardians, Wellington.

Weston-super-Mare.—Church (3,000*l.*); Messrs. C. A. Hayes & Son, builders, Bristol.

Witham (Essex).—Isolation Hospital; Mr. W. P. Perkins, Surveyor, Witham Urban District Council.

Wooler.—Rebuilding parish church (4,000*l.*); Mr. A. B. Plummer, architect, Grey-street, Newcastle-on-Tyne.

Ynysddu (Newport, Mon.).—County school; Mr. J. Bain, architect, Shire Hall, Newport (Mon.).

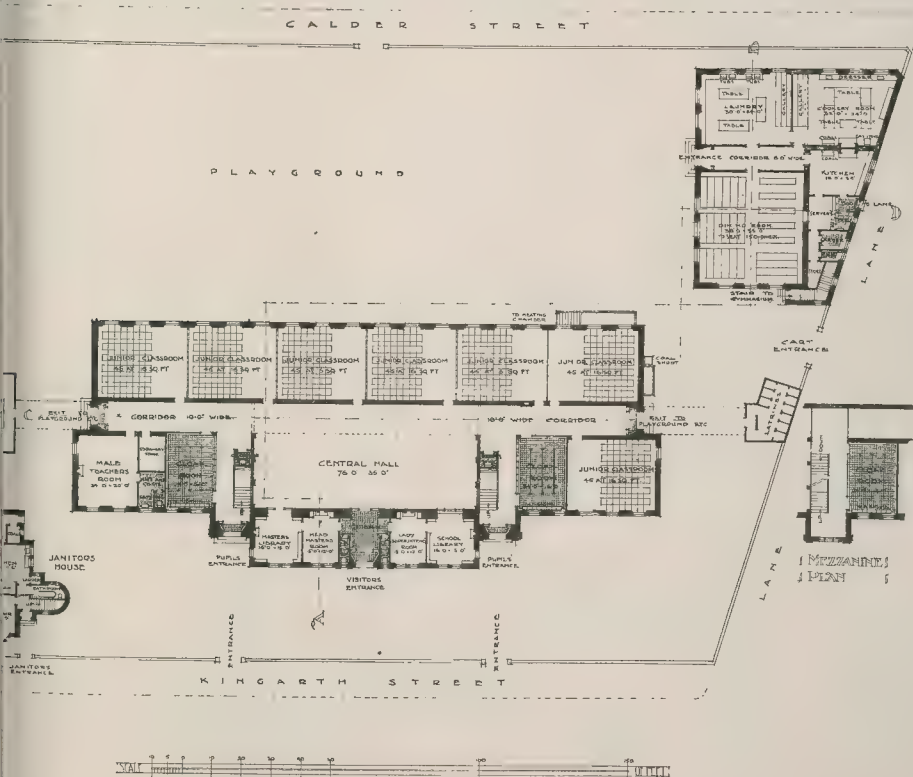
Messrs. Thomson & Sandilands, F.F.R.I.B.A., Architects.

4 the Governors of the Trust felt that, the growing requirements of modern life, they were lagging behind in regard to accommodation, and a large extension was

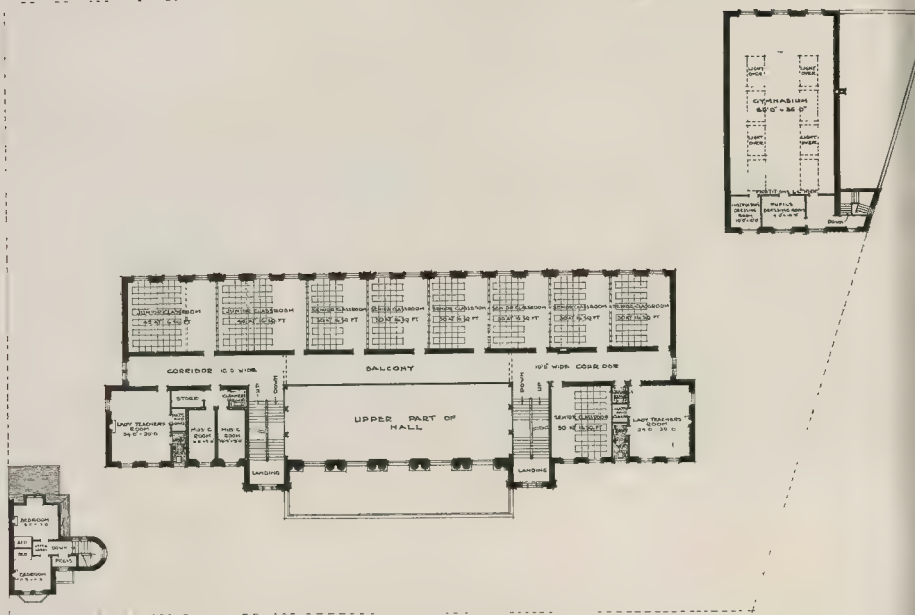
made, which was opened in June, 1896. This addition included several classrooms, art and science rooms, teachers' rooms, cloakrooms, etc.

The increasing demands of the Department in regard to subjects of study, the selection of the school as a junior student centre, and

the regulations which restrict the number of pupils in each class of the Secondary Department, necessitated considerable structural alterations, and the renting of rooms in adjoining church premises. This latter expedient proved highly unsatisfactory, and last session the playground was encroached



Hutchesons' Educational Trust School : Ground Floor Plan.



Hutcheson's Educational Trust School: First Floor Plan.

upon, and a gymnasium and classroom erected. The department, however, could only regard this as a temporary expedient, and the Governors have been compelled to face the necessity of erecting an entirely new school.

The accommodation provided should prove amply sufficient to meet the requirements of an attendance of 800 pupils for many years to come.

The main entrance leads directly into the central hall, which is 2,698 sq. ft. in area. The headmaster's room and library are situated on the left, and the lady superintendent's room and school library on the right of the entrance. There are two entrances for pupils at either side in direct communication with the staircases and cloak-rooms, as well as two exits to the playground.

On the ground floor there are also seven junior classrooms and a teachers' room.

On the first floor are two junior and seven senior classrooms, two music-rooms, and a teachers' room at each end of the building.

On the top floor are six senior classrooms, three science-rooms, and three artrooms. The junior and senior classrooms accommodate forty-five and thirty pupils respectively.

The domestic economy block is situated at the south-west corner of the site.

On the ground floor are laundry and cookery rooms, and a large dining-room for the use of the pupils, with kitchen and storage accommodation adjoining. Upstairs there is the gymnasium with dressing-rooms, also two rooms, furnished as a parlour and bedroom, to be used in the teaching of domestic work.

The heating will be carried out by low pressure hot water on the drop system. The entire building will be lighted by electricity.

The ventilation of the building will be on the Glover Lyon system. This system introduces the fresh air at the ceiling level, and extracts the vitiated air at the corners of the opposite wall.

The architects are Messrs. J. Thomson and R. D. Sandilands, of Glasgow.

The contractors for the whole of this building, exclusive of heating, ventilation, and lighting, are Messrs. P. & W. Anderson, Douglas street, Glasgow.

THE ROAD BOARD FUNDS.

THE recent debate on the action of the Road Board in the administration of the funds led to no decisive conclusion in the absence of the report of the Commissioners which is shortly to be issued. It appears that the sum at the disposal of the Commissioners is about 1,100,000*l.*, and that the applications in England were for sums amounting to 7,100,000*l.* Only three-quarters of a million pounds has been allotted to England, so if the demands made by the various counties represent really urgently-needed requirements it is obvious that the improvements to be effected by the funds at the disposal of the Board will be very gradual, while there is also some risk that, divided amongst so many authorities, the sums allocated may be merely frittered away.

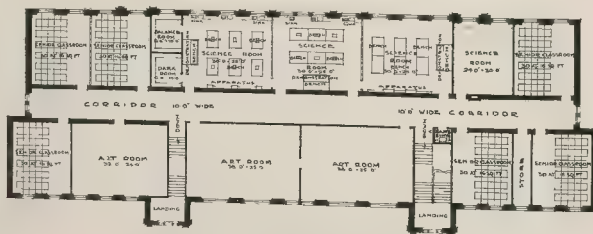
The main question debated was whether

grants should be made by the Board conditional on a contribution on the part of authorities receiving the grant towards improvements to be effected. Such a policy only increases the burden to be laid upon ratepayers, who with some justice complain that certain districts that they are too rated already in regard to the necessity through motor traffic, which brings the advantage. This new form of taxation certainly brought to the fore the question whether the main trunk roads should be maintained and constructed at the expense. Pending so great an innovation, it may be questioned whether funds at the disposal of the Road Board not be invested to better advantage could be devoted to the construction of much-needed new trunk roads on the approved principles, instead of being away in small sums to the various authorities. It will be interesting to see the result of reference to this question.

LEGAL COLUMN.

"Sewer" or Natural Water Course.

IN the case of Attorney-General v. Lewes, the relator was tenant of lands through which ran a stream flowing into the River Ouse, and he claimed a declaration and injunction against the defendants' spect of sewage discharged into the stream, unfreed from excrement. Several writs were raised, and, amongst others, it was contended that the predecessors of the defendant



Hutcheson's Educational Trust School: Top Floor Plan.

ad discharged sewage into the stream under the direction of the Secretary of State between the years 1869 and 1870, when a portion of the stream had been culverted before the Public Health Act, 1875, came into force, and that the plaintiff was therefore stopped from complaining; and it was further contended that there was no continuing injury, and therefore that the action was out of time by reason of the Public Authorities Protection Act. The case, however, really seems to have turned upon the question whether the stream was a natural stream or whether it was a sewer. The stream was partly tidal, the tide passing up the stream and culvert varying distances according to the state of the tides. During certain portions of the year, i.e., between the autumn and May, there was also a freshet. The culvert was out of repair, and thus if the stream was a sewer the defendants would be liable, as the Court held that the sewage caused a nuisance. The judge held the question of whether the conduit was a sewer to be one of fact and degree depending upon whether the channel was used for the reception and carrying away of sewage, and that in this case, as from May to October this channel was used for such purposes only, the channel was a sewer. The defendants contended that unless all natural water was cut off the conduit could not be a sewer; but the Court negatived this contention, and also held that the tide flowing into the stream made no difference. The nuisance being continuous, the plaintiff was awarded damages, and an injunction was granted; but the operation of the injunction was stayed, as the defendants were promoting a sewerage scheme.

LONDON COUNCILS.

Hackney.—Dr. J. King Warry, the Medical Officer of Health, in his annual report, which is just being issued, says: "In the course of inspections of tenement dwellings made in accordance with the Customs and Inland Revenue Acts my attention has been drawn to certain rooms in a large number of three and four roomed tenements in the borough. These rooms are intended presumably for bedrooms, though they corresponded in structure to a bed room and a lighted box-room. These so-called rooms are small, lighted by an ordinary sash window, and provided with a fire in the wall about six inches square, which is guarded outside by a grating; but they have no fireplace or chimney flue. I wish to draw attention to the almost wholesale existence of such rooms recently in connection with the building of a large number of tenement dwellings on an estate under development in the borough. The occupants of flats containing one or more of these rooms recognise their uselessness. If the tenant cannot keep a servant 'living in,' the room question is allotted to her as bedroom. The ventilating hole is promptly blocked up on the first appearance of a cold day, and she sleeps at night practically in a closed box, with no circulation of air. The occupier has a family, one or more of the children are put to sleep in the room, the fire in the wall is blocked up, and the same results follow as in the former case; but, as the younger children suffer more from cold than the older ones, sleeping under such conditions would, no doubt, predispose to disease. The curious point about the construction of such living-rooms is that it is wholly legal. In the Building Acts of London there is no mention of bedrooms. Rooms are designated by the title 'inhabited rooms,' or 'living rooms.' The term 'inhabited,' as applied to a room, is defined in the London Building Act, 1894, as 'a room which some person passes the night' (or which is used as a living-room, including a room with respect to which there is a probable presumption, until the contrary is shown, that no person passes the night therein, or that is used as a living-room). Living-rooms are, as will be seen, included in the above definition. The rules for the construction of habitable rooms are set out in section 70. This section deals with the height of habitable rooms, the provision of windows, their position, size, and the portion to open, the floors, the stairs, and the provision of ventilation beneath such floors; also the construction of the floors of habitable rooms, the provision of stairs, and the separation of stairs from staircases leading thereto. There does not appear to be any obligation to provide any ventilation in the rooms with fireplaces, especially in the case of bedrooms. This is a serious defect, as it is a great want in the Building Acts, better means for the ventilation of habitable rooms can be suggested than a fireplace and a flue. In addition to ventilation, means for heating are also required in every bedroom at certain times of the year, and at

other times in case of illness. Some of the rooms now provided in tenement dwellings are, in my opinion, totally unfit for use, either as living or bed rooms."

Sunbury.—The Council has accepted the tender of Tarmac, Ltd., for tar-paving the footpath in Nursery-road, and the path between Wear House, at the end of the road leading to the cemetery, at the following prices:—15s. 7d. per ton for bottoming and 16s. 1d. per ton for topping. Plans have been passed for Mr. A. R. Harrison, Twickenham, for twenty-six houses, near Park-road North, and for the formation of a new street.

Walthamstow.—A plan has been lodged by Mr. F. H. Douse for four houses proposed to be erected in St. Stephen's-road.

Willesden.—The Medical Officer of Health, Dr. William Butler, devotes considerable space in his annual report to the proposed local application of the Town Planning Act. He writes: "In Germany it has been found that generally the property owner has recognised the wisdom of town extension plans. There many of our municipalities have secured Parliamentary powers enabling them to pool the land and to redistribute it between the different owners. By this means the cutting of wide avenues—which not uncommonly in large towns may attain a width of 150 ft.—does not penalise the owners through whom the land is cut. It is even possible—and, in fact, is arranged—in the case of streets traversing the face of a slope, to build on one side only of a street, so that streets are formed on both sides of a street in such a manner that a beautiful prospect is unmarred for any of the houses built on the slope. Although no such powers of pooling the land appear to have been granted in the Act, it is to be noted that section 53 provides for compensation in respect of property injuriously affected by the scheme, and conversely for recovery of a moiety of the value from any person whose property is increased in value as a result of the making of a town planning scheme. Moreover, sect. 60 of the Act enables the responsible authority, for the purpose of a town planning scheme, to purchase any land comprised in such scheme, and the judicious exercise of this power, together with those powers under the compensation clauses just referred to, should, when applied to such a town as Willesden, enable its further extension to proceed under a comprehensive plan, which, while conserving and protecting private interests, does no injustice to those great civic rights and aspirations which are certain to dominate our newer towns. The garden cities and suburbs which are springing into existence are competitive factors which cannot be ignored by those older communities which have hitherto been handicapped by the lack of those comprehensive powers of planning which are the designers of the model towns possess. Most of the fine trees which the centuries had bequeathed and which judicious planning would have preserved to Willesden have been felled. In the garden cities less thought has been given to their preservation as an object of the designer. The Housing and Town Planning Act has come late for Willesden, but not too late to preserve much of the natural beauty which unimagined and unordained development would otherwise unquestionably destroy."

TRADE CATALOGUES.

The Carron Company forward us two handsomely produced catalogues, devoted respectively to ranges and to registers and interiors. The design of these latter maintain the standard which the Carron Company have taught the public to expect. Several pages are devoted to illustrations of designs for "barless" fires, a type of fire which is rapidly gaining in popularity. The "Carron" ranges are widely known and used throughout the kingdom. The catalogue enclosed forms a convenient reference book for the firm's manufactures, dealing first with every form of portable range, followed by ranges suitable for the methods of cookery which find favour in different parts of the country. We would particularly draw the attention of our readers to the Carron self-acting cottage ranges, in which the crown has two conducting plates cast on the side next the fire, and consequently require no surrounding smoke flue.

We have received from the Armorduct Manufacturing Company, Ltd., of Witton, Birmingham, and Farringdon-avenue, London, E.C., a copy of their new Conduit Catalogue C/1103. The firm have gone to considerable trouble and expense to render it as complete and handy as possible for purposes of reference, and we must admit that their efforts have been attended with success. An important feature in the Armorduct conduit

system is the "Armorduct" flexible enamel. Conduit tubes, as our readers are aware, require protection from the acids and alkalis met with in plaster, and from the moisture of the atmosphere; cheap lacquers and japans render it impossible, from their lack of elasticity, to apply a natural bend without cracking the protecting enamel, and it is claimed that the "Armorduct" flexible enamelling possesses such tenacity as to be indifferent to the rough handling incident upon installation work, and to admit of natural bends. Special attention is drawn to the "Armorduct" patent screwed "knock-out" box, which is manufactured to meet the demand for a screwed universal type junction box. This box is now supplied stop-tapped on every inlet. The firm's multiple oblong junction boxes and distribution interiors for high voltage work should also find a welcome. Among other specialities of the "Armorduct" Company are floor inspection boxes, multiple switch fittings, and watertight fittings. The catalogue should certainly be in the hands of all concerned with lighting installations.

Messrs. Robert Jenkins & Co., of Rotherham, send us particulars of the "Eau-sho" boiler for hot water supply and heating. It is claimed that the "Eau-sho" has solved the problem of producing a hot-water boiler of relatively small size, compact shape, and rapid and effective in heating power. The boiler may be placed in an angle or recess, and be still accessible from the front for cleaning out. When thus placed, Messrs. Jenkins supply a cast front in one piece of sheet-iron casing adapted for the insertion of asbestos. The boiler is horseshoe-shaped in plan, with a flat front, and the feed door will admit an ordinary kitchen shovel, and the mouth of a scuttle. It may be placed in a mantel-opening, when used for warming or supply, and be fitted with a tiled surround, in the same way as a register-grate. Another speciality of the same firm is the "Dual" independent boiler, for heating and service, designed to take the place of the all-copper boiler, necessitated where soft water only is obtainable. The boiler of wrought-welded iron contains a copper coil, connected to the service pipes, so that the water for domestic use is kept from contact with the iron; thus the advantages of a copper boiler are obtained, without the disadvantages of increased cost and inferior durability.

FOREIGN AND COLONIAL.

Technical Museum in Austria.

The technical museum in Vienna, to commemorate the sixtieth anniversary of the reign of the Emperor Francis Joseph, is nearing completion. The contents of the museum will show not only the development of industries and crafts, but will, from time to time, be supplemented to emphasize the progress which is being made. A feature will be made of inventions applicable to labour-saving, and manufacturers are invited to co-operate with the Director in securing objects of interest. Inquiries should be addressed to the Technical Museum, Ebendorferstrasse 6, Vienna.

Building Construction in China.

The sum of 1,203,004, spent by China last year on the purchase of foreign building materials, cement, timber, furniture, window glass, etc., is (according to a report by Mr. H. H. Fox, acting Commercial Attaché to H.M. Legation at Peking), indicative of a far-reaching change which is coming over the habits of the Chinese people. The dilapidated rows of one-storied houses of lathe and plaster, dark, insubstantial, and comfortless, which formerly did duty as Government offices, schools, barracks, etc., are rapidly disappearing before buildings in foreign style of brick and stone, fitted with such up-to-date conveniences as electric light and steam heating. In all the large cities and trading centres, merchants and shopkeepers are replacing the shanties of former days with modern constructions, in which the yanglou or foreign upper story, and the plate-glass window, are usually conspicuous features. The style is more often than not atrocious, and the work shoddy, but in places, like Shanghai and Peking, where the erection of business buildings and Government offices has been entrusted to foreign architects, the results are not unworthy of a European city. As regards such materials as stone and bricks, China is already well supplied, and she is beginning to manufacture her own cement; but good timber, owing to the reckless disregard of elementary principles of afforestation during the past fifty years, is, except in remote and inaccessible parts of the country, entirely lacking. For such articles as steel joists and plates, ironmongery, and tools, corrugated

FOREIGN AND COLONIAL.—Continued on page 259.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxii.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 4. — **Newcastle-on-Tyne.** — The Education Committee invite from architects practising in Newcastle designs for a senior mixed school and a junior mixed school, each to accommodate 365 children. Assessor nominated by R.I.B.A.

SEPTEMBER 6. — **Shogness. Cottages Hospital.** — Mr. E. R. Sutton, F.R.I.B.A., Assessor. Premium 15l. 15s.

SEPTEMBER 9. — **Florest-fach.** — Parish hall, to cost 1,000l. From Mr. J. C. 15.

SEPTEMBER 9. — **Pontefract.** — SWIMMING-BATHS. — Open to architects of the West Riding of Yorkshire. Particulars from the Borough Surveyor.

SEPTEMBER 12-25. — **Athens. COURT OF JUSTICE.** — An international competition is instituted by the Ministry of the Interior, for the erection of Court buildings, to cost 160,000l. The *Official Gazette* may be seen at the Library of the R.I.B.A.

SEPTEMBER 15. — **Lowestoft. SCHOOL.** — The Lowestoft Education Committee invite designs for an elementary school for 500 boys at Roman-hill. Three premiums are offered: 20, 10, and 5 guineas. See advertisement in issue of June 16 for further particulars.

SEPTEMBER 16. — **Manchester. LIBRARY AND ART GALLERIES.** — Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

OCTOBER 4. — **Eastington B.D.C.** — 100 model houses for Merton Colliery, Durham. 24 per cent. on net cost to successful architect.

OCTOBER 7. — **Barnley. EXTENSION OF BATHS.** — The Barnley T.C. invite drawings for proposed extension of Public Baths. Three premiums are offered. See advertisement in issue of August 11 for further particulars.

OCTOBER 12. — **Coseley.** — Plans are invited for a school to accommodate about 200 children. Particulars from the Education Offices, Coseley, near Blisdon.

OCTOBER 14. — **Bristol. ALTERATIONS IN THE GRAND HOTEL.** — Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.

OCTOBER 20. — **Holland. STAINED GLASS WINDOW.** — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — **Marlyebone. NEW MUNICIPAL BUILDINGS.** — Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1. — **City of St. Petersburg. MONUMENT TO ALEXANDER II.** — Particulars in our issue of August 13, 1910.

NOVEMBER 30. — **Gardif. TECHNICAL INSTITUTE.** — The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to other competitors. Mr. J. S. Gibson, assessor.

NOVEMBER 30. — **Hastings. EAST SUSSEX HOSPITAL.** — The Joint Committee of the East Sussex Hospital, and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

DECEMBER 29. — **Glasgow. DESIGN FOR A BRIDGE.** — Designs are invited (Alexander Thompkins Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 29, 1912. — **Montevideo.** — Government plan (premiums, 2,125l. and 850l.) and town improvement scheme (premiums, 1,060l., 640l., and 425l.). Conditions may be seen at the Board of Trade, 73, Basinghall-street, E.C.

* JANUARY 31, 1912. — **Australia. DESIGNS FOR FEDERAL CAPITAL CITY.** — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in this issue for further particulars.

JULY 1, 1912. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf.

NO DATE. — **Nottingham. BAPTIST CHURCH AND PREMISES.** — Limited to Nottingham architects. Particulars from Messrs. E. B. & Jackson, solicitors, King-street, Nottingham.

NO DATE. — **Rochedale Infirmary. EXTENSIONS.** — Assessor, Mr. Alex. Graham, F.R.I.B.A.

NO DATE. — **Salford.** — Extension of office accommodation on workhouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford. Limited to architects practising in Salford and district only.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 2. — **Berwick. VERANDAH.** — Erection of a verandah at Infirmary. Plans and specifications from Messrs. Gray & Boyd, architects, 2, Ivy-place, Berwick-on-Tweed.

SEPTEMBER 2. — **Dorchester. BOILER-HOUSE.** — Construction of a new boiler-house at the County Offices. Plans and specification at the County Surveyor's Office.

SEPTEMBER 2. — **Norwich. PREMISES.** — Erection of business premises, St. Stephen's-corner. Plans and specifications, and quantities from Messrs. A. F. Scott & Son, 24, Castle-meadow, Norwich.

SEPTEMBER 4. — **Bradford. LIBRARY.** — Erection of Branch Library, Great Horton. Drawings and general conditions of contract seen, and quantities and forms of tender from the City Architect, Town Hall, Bradford.

SEPTEMBER 4. — **Brynnaen-y. SCHOOLS.** — Erection of a new Council school, and alterations and additions to the Clydach Council School, Swansea. Plans and specifications seen, and quantities from Mr. T. Mansel Franklin, Clerk of the C.C. Glamorgan C.C. Offices, Westgate-street, Cardiff.

SEPTEMBER 4. — **Carlisle. DWELLINGS.** — Erection of sixteen artisans' dwellings on two different sites. Plans and specification by Mr. Peter P. Carbery, C.E., Town Surveyor. Deposit of 2l. 2s.

SEPTEMBER 4. — **Keighley. ADDITIONS.** — For additions to brewery. Plans seen, and quantities from Messrs. J. Haggas & Sons, architects, North-street, Keighley.

SEPTEMBER 4. — **London. W. FLOORING, PLASTERING, ETC.** — The Kensington Board of Guardians invite tenders for providing and laying "Armaflex" flooring, plastering walls, and decorative work to wards 11 and 13 of Infirmary, Marlborough-road, Kensington, W. See advertisement in this issue for further particulars.

SEPTEMBER 4. — **Mottingham. Erection of new urinal at King Edward Park.** Plans seen, and quantities from the City Architect, Mr. F. B. Lewis, Guildhall, on deposit of 1l. 1s.

SEPTEMBER 4. — **Southwark. DRAINAGE.** — Erection of a drain-hall. Plans and quantities from Mr. W. Cooper, F.R.I.B.A., architect, 4, Kirkcaldy-buildings, Huddersfield.

SEPTEMBER 5. — **Bridlington. HOUSES.** — Erection and completion of two houses, St. John's-walk, Drawings, etc., from Mr. J. Barnshaw, architect, Carlton House, Bridlington.

SEPTEMBER 5. — **Portsmouth. REPAIRS.** — For taking off four sets of struts and walings to the Dolphin at the sewage outlet at the entrance of Langston Harbour, and replacing with new. Specification and plan from the Borough Engineer, Town Hall, Portsmouth.

SEPTEMBER 6. — **Brigg. SCHOOL.** — Erection of a new classroom and cloakroom at the Grammar School. Plans and specifications, by Mr. George H. Allison, architect, Grimsby, at 11, Bigby-street, Brigg.

SEPTEMBER 6. — **Catterick. CHAPEL.** — Erection of a new Wesleyan chapel. Drawings seen, and quantities from the architect, Mr. Herbert Howarth, 20, Greenbank-road, Darlington.

SEPTEMBER 6. — **Denbigh. HOUSES.** — For building two houses in Denton Park. Plans and specifications from Mr. Edward James Edgar, 19, Holland-villas, Denbigh.

SEPTEMBER 6. — **Sanreder. PIGERY.** — Erection of a pigery at Rosedale Farm. Plans and specification with Mr. A. Pease Jenkin, Trevigle Office, Redruth.

SEPTEMBER 7. — **Aberdeen. ADDITIONS.** — For additions to premises in Berzeden-road. Plans seen, and specifications and quantities from Messrs. Wilsons & Walker, architects, 181A, Union-street, Aberdeen.

SEPTEMBER 7. — **Berwick-on-Tweed. HOTEL.** — Rebuilding part of the Salmon Hotel. Plans and specifications from Messrs. Gray & Boyd, architects, 2, Ivy-place, Berwick-on-Tweed.

SEPTEMBER 7. — **Longside. SCHOOL.** — Erection of new school buildings. Plans seen, and quantities from Mr. G. Anderson, architect, 1, Crown-terrace, Aberdeen.

SEPTEMBER 8. — **Castleford. ALTERATIONS.** — For

alterations to the Castleford Temple-st Council School. Plans seen, and specifications on deposit of 1l. from Education Architect, County Hall, Wakefield.

SEPTEMBER 8. — **Guisborough. ALTERNATE ETC.** — Additions and alterations to Adam Chaloner Hospital. Plans and specifications to the Hospital. Mr. J. W. Clarke, Guisborough Yorkshire.

SEPTEMBER 8. — **Keighley. ADDITIONS.** — Additions to laundry. Plans seen, and quantities from Messrs. J. Haggas & Sons, architects, North-street, Keighley.

SEPTEMBER 8. — **Redness. REPAIRS, ETC.** — Repairs and improvements at the school. Specifications from Mr. E. L. Harpur, Divisional Cl. W. Education Offices, Gillingham.

SEPTEMBER 9. — **Adwick-le-Street. POL. STATION.** — Erection of police-station at Adwick Street, near Doncaster. Plans seen, and specifications, with quantities, on deposit of 1l. from Mr. J. Vickers Edwards, West Riding Architect, County Hall, Wakefield.

SEPTEMBER 9. — **Connell Ferry. RESTORATION.** — For the restoration of Falls of Lora Ho Connell Ferry. Plans seen, and quantities from Mr. James G. Falconer, architect, 22, Alexander place, Oban.

SEPTEMBER 9. — **Oathlaw. COTTAGES.** — Erection of four cottages. Mr. D. W. Galloway, architect, Oathlaw, Scotland.

SEPTEMBER 9. — **Sutton. ADDITIONS, ETC.** — Metropolitan Asylums Board invite tenders for the erection of sanitary annexes and alterations to laundry at the Belmont Workhouse, Sutton Surrey. Drawings and specification prepared by Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech. Engineer-in-Chief, Office of the Board, Embankment, E.C. Deposit of 1l.

SEPTEMBER 11. — **Birmingham. ADDITIONS.** — For erection at the Infirmary of a pathological and bacteriological laboratory and X-ray department, also for alterations to the infectious block to provide additional accommodation for nurses. Plans seen, and quantities from Messrs. W. Ward, architects, Paradise-street, Birmingham. Quantities on deposit of 2l.

SEPTEMBER 11. — **East Preston. REPAIRS, ETC.** — Repair and redecoration of the nurses' home at the East Preston Workhouse, and alterations to the Workhouse. Specification at the Workhouse. Mr. Arthur Shelley, Clerk to the Guardians Town Offices, Littlehampton.

SEPTEMBER 11. — **Leeds. HOSTEL.** — Erection of one hostel for women students at the City Leeds Training College. Deposit of 2l. 2s. See advertisement in this issue for further particulars.

* SEPTEMBER 12. — **Aldershot. Erection of Public Buildings.** — The Commissioners of H.M. Works at Aldershot invite tenders for alterations and additions to the Garrison. See advertisement in this issue for further particulars.

SEPTEMBER 12. — **Badby. SCHOOL.** — Erection of public school. Quantities from architect, Mr. John T. Blackwell, 53, High-street, Kettering.

SEPTEMBER 12. — **Bridgewater. ALTERATIONS, ETC.** — For repairs, alterations, painting, etc., at the Town Hall and Municipal Buildings. Specification seen, and quantities from the Borough Surveyor.

SEPTEMBER 13. — **Kingham. SCHOOL.** — Erection of a new school. Plans and specification seen, and quantities, on deposit of 2l. 2s., from Mr. Sidney Stalard, County Surveyor, County Hall, Oxford.

SEPTEMBER 13. — **Stirchley. FLOO.** — Construction of a wooden floor to cover the swimming pond at the public baths, and a storage shed. Quantities and forms of tender from Mr. Ambrose W. Cross, A.M.Inst.C.E., 29, Valentia-road, King's Heath. Deposit of 1l. 1s.

SEPTEMBER 14. — **Fountains. SANATORIUM.** — Erection of a sanatorium. Plans and specifications, and quantities from the architect, Mr. Thomas Goddard, Clifton-street, Aberdeen.

SEPTEMBER 16. — **Dover. SCHOOL.** — Erection of girls' school. Specification and quantities, on deposit of 2l. 2s., from Mr. C. H. H. Assoc. M.Inst.C.E., Maison Dieu House, Biggin-street, Dover.

SEPTEMBER 16. — **Kempston. SCHOOL, ETC.** — The Bedfordshire Education Committee invite tenders for additions to Bedford-road Council School, Kempston. See advertisement in this issue for further particulars.

* SEPTEMBER 16. — **Leek. SCHOOL.** — The Staffordshire Education Committee invite tenders for new council school at Leek. See advertisement in this issue for further particulars.

* SEPTEMBER 18. — **Longmow Camp. ROAD.** — The Secretary of State for War invite tenders for raising school at Longmow Camp, Woomer Sub-District. See advertisement in this issue for further particulars.

SEPTEMBER 18. — **Sunbury. WHARF.** — Extension of Church Wharf. Specification and quantities

BUILDING—continued.

SEPTEMBER 18.—**West Ham.**—New Workshop, etc.—The West Ham Education Committee invite tenders for alterations of cloak-room, Regent's Lane Schools, and new workshop, Grange-road, Regent's Lane. See advertisement in this issue for further particulars.

SEPTEMBER 19.—**Wigan.**—ADDITIONS.—Erection of additions at the Sanatorium, Whalley, drawings and quantities from the Borough Engineer, King-street West, Wigan.

SEPTEMBER 20.—**Douglas.**—ALTERATIONS.—For alterations to "Murray's House," Mount Hareck, Plans and specifications from Messrs. J. Cowle & Son, architects, St. George's-street, Douglas, Isle of Man.

SEPTEMBER 20.—**St. Helens.**—EXTENSION.—Erection of an extension of the Thatch Heath Council School. Plans and specifications, and quantities, on deposit of 11. 1s., from the architect, Messrs. Biram & Fletcher, George-street, St. Helens.

SEPTEMBER 22.—**Cavan.**—COTTAGES.—Erection of fifty-five single labourers' cottages. Plan and specification by Mr. Townsend, architect, Carrickville, Ballyshannon, Co. Monaghan. F. F. Johnson, Esq., the Council, Board-room, Bawnboy, Cavan, Ireland.

SEPTEMBER 23.—**Douglas.**—ADDITIONS.—Alterations additions to the Home for the Poor, plans and specifications from Messrs. J. Cowle & Son, architects, Douglas, Isle of Man. Deposit, 11. 1s.

NO DATE.—**Chandler's Ford.**—HOUSES.—Erection of four houses on the Hiltinsbury Estate, plans and specifications at the Estate Office, Chandler's Ford, Mr. H. V. Miles-Diamond, R.I.B.A., architect and surveyor.

NO DATE.—**Gorseinon.**—HOUSES.—Erection of fifty houses. Plans and specifications from Mr. J. Cook Bess, M.S.A., The Parade, Sea. 1.

NO DATE.—**Grays.**—DRILL-HALL, ETC.—Erection of drill-hall, instructor's quarters, stores, etc. Deposit, 21. 2s., from Mr. F. F. Johnson, Esq., B. Secretary, Territorial Force Association, Essex County, Bank-chambers, Chelmsford.

NO DATE.—**Lincoln.**—ALTERATIONS.—For alterations to the dispenser's house at the Lincoln Union Hospital. Architect, Mr. W. G. Watkins, vest-rect, Lincoln. Deposit of 11.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 4.—**Dundalk.**—WELL, ETC.—For sinking well and erecting a pump at Northwell. Specification by Mr. Cahill, C.E., Dundalk.

SEPTEMBER 6.—**Barrow-in-Furness.**—CYLINDER.—Supply of a copper cylinder and other work at the Devonshire-road Hospital. Plans and quantities from the Borough Engineer, Town Hall.

SEPTEMBER 6.—**Streathley.**—BRIDGE.—Repair of the Streathley and Goring bridge. Messrs. Hedges & Son, Market-place, Wallingford.

SEPTEMBER 7.—**Cork.**—WELL, ETC.—For sinking well and erecting pump at Fagot-hill, Clogheen. Plan and specification, on deposit of 51., to the Clerk, the Board-room, Workhouse, Cork.

SEPTEMBER 8.—**New Ross.**—DYNAMO, ETC.—Erection of a steam dynamo, accumulators, and wiring at Greywell Brewery. Specification, on deposit of 11. 1s., from Mr. Arthur E. Porte, M.Inst.E.E., M.Inst.C.E.I., 48, Dawson-street, Dublin.

SEPTEMBER 9.—**Shalford.**—BRIDGE.—Widening bridge, Osbourne Drive. Plan and specification with Mr. F. H. Ellis, District Surveyor, Shalford.

SEPTEMBER 11.—**Salford.**—LIGHTING.—Installation of incandescent gas lighting at the Council school. Drawing, specification, and forms of tender, on deposit of 11. 1s., from the Gas Engineer, Gas Offices, Bloom-street, Salford.

SEPTEMBER 12.—**Basingstoke.**—HEATING.—For installation of hot-water apparatus at Basingstoke High School. Plans and specification, on deposit of 31. 8s., from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester.

SEPTEMBER 13.—**West Ham.**—HEATING.—The West Ham Education Committee invite tenders for low pressure hot-water heating apparatus at Gainsborough-road School. See advertisement in this issue for further particulars.

NOVEMBER 1.—**Cairo.**—BRIDGE.—Construction of a road bridge across the Bahr-el-Aame. Specifications given at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

FURNITURE, PAINTING, MATERIALS, etc.

SEPTEMBER 2.—**Kull.**—PAINTING.—For painting required at the cemeteries. Forms of tender and particulars from Mr. A. E. White, City Engineer, Town Hall, Hull.

SEPTEMBER 4.—**Keighley.**—PAINTING.—For painting the manager's house, Filler Beds, Oldfield. Particulars from the Borough Engineer.

SEPTEMBER 5.—**Keighley.**—PAINTING.—For painting exterior of the Workhouse. Quantities from Mr. G. E. Spencer, Clerk, Keighley.

SEPTEMBER 5.—**Rochdale.**—PAINTING.—For painting at Fainage Park. Particulars from the Borough Surveyor, Town Hall, Rochdale.

SEPTEMBER 6.—**Keighley.**—PAINTING.—For painting at the Victoria Hospital. Particulars from Edith C. Grace, Secretary.

SEPTEMBER 7.—**Walsall.**—PAINTING.—For painting portions of the Workhouse. Particulars and specification with the Workhouse Master, Mr. A. H. Lewis, Clerk, 23, Leicester-street, Walsall.

SEPTEMBER 14.—**Fazakerley.**—PAINTING.—For painting at the Cottage Homes. Specification from Mr. Harris P. Cleaver, Union Clerk, Union Offices, Brougham-terrace, Liverpool.

SEPTEMBER 14.—**Walton.**—PAINTING.—For painting at Walton Workhouse. Specification from Mr. Harris P. Cleaver, Union Clerk, Union Offices, Brougham-terrace, Liverpool.

ROADS, SANITARY AND WATER WORKS.

SEPTEMBER 6.—**Clacton.**—MATERIALS.—Supply of flints and granite. Specification and form of tender from Mr. D. J. Howe, Surveyor to the Council, Town Hall, Clacton-on-Sea.

SEPTEMBER 6.—**Cowbridge.**—ROADS.—Improvement of the Bridgend and Cowbridge main road. Plans and specification seen, and quantities at the Police-station, Cowbridge, and from Mr. T. Mansel Franklan, Clerk of the C.C., Glamorgan County Offices, Westgate-street, Cardiff.

SEPTEMBER 6.—**Gloucester.**—ROAD.—For improving the Gloucestershire approach to Cheltenham Bridge. Plans seen, and specification and quantities from Mr. E. S. Sinnott, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester. Deposit of 21. 2s.

SEPTEMBER 6.—**Keighley.**—ROAD.—For kerbing, resurfacing, channelling, and draining roads. Specifications and quantities from Mr. T. Burton, Surveyor, 80, Carle-road, Keighley.

SEPTEMBER 8.—**Beaminster.**—SEWER.—For laying new sewer for a portion of village of Evershot. Plans and specifications with Mr. S. R. Baskett, solicitor, Evershot.

SEPTEMBER 9.—**Lees.**—STREETS.—For sewerage, levelling, paving, flagging, and channelling of streets. Specifications and quantities from the Engineer, Mr. A. H. Mountain, A.M.Inst.C.E., Prince's-chambers, 16, John Dalton-street, Manchester. Deposit of 11. 1s.

SEPTEMBER 11.—**Bedlington.**—STREETS.—For making-up streets. Plans, specifications, and quantities with the Surveyor, Mr. J. E. Johnston, Bedlington.

SEPTEMBER 11.—**Oxford.**—DRAINAGE.—Construction of new drainage works at the Workhouse, Cowley-road. Plans and specifications at the Workhouse. Mr. Adolphus Ballard, Clerk to the Corporation, 5, Magdalen-street, Oxford.

SEPTEMBER 11.—**Reigate.**—SPALLS.—Supply of granite or basalt spalls. Mr. Frank C. Morrison, Clerk to the Guardians, 46, High-street, Reigate.

SEPTEMBER 14.—**London.**—DRAINAGE.—Drainage works at Wandsworth Cemetery, Magdalen-road, Wandsworth. Specification, drawings, and form of contract from the Borough Engineer, 215, Balham High-road, S.W.

SEPTEMBER 14.—**Reading.**—ROAD.—For making up road. Drawings seen, and specifications from Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

SEPTEMBER 18.—**Felixstowe.**—GRANITE.—Supply of granite. Specifications from Mr. H. Clegg, A.M.Inst.C.E., Surveyor, Town Hall, Felixstowe.

SEPTEMBER 18.—**Widnesbury.**—ROAD.—For making-up roads. Plans and specifications from Mr. E. Martin Scott, Borough Engineer and Surveyor, Town Hall, Widnesbury.

NO DATE.—**Pinxton.**—WATER MAIN.—For laying a water main at Storh-lane. Particulars from Mr. H. Silcock, District Surveyor, 67, Westgate, Mansfield.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
DEPUTY ASSISTANT (EDUC. SURVEYOR'S DEPT.).....	Northampton C.C.	1201.	Sept. 13

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
JOCK, APPLIANCES, AND FURNITURE, 99, MIDDLESEX-ST., E.C.—On the Premises	Fryett, White, & Co.	Sept. 5
TRADING MATERIALS, CHABING CROSS-ROAD, W.C.—On the Premises	Home & Co.	Sept. 7
TRACTOR'S STOCK AND PLANT, NORTHAMPTON—On the Premises	Woods & Co.	Sept. 18

PATENTS.

APPLICATIONS PUBLISHED.*

12,931 of 1910.—Adolf Friedman: Joint boxes for electric wiring.

26,471 of 1910.—Gents Downing and Alan Pye: Chimney pots and ventilator cowls.

26,703 of 1910.—William John Christian Schwartz: Manufacture of mats, chair seats, flooring blocks, and like flat articles.

23,664 of 1910.—James Yate Johnson (Chemical) Fabrics and Asphaltwerke Akt. Ges.): Manufacture of asphalt blocks, slabs, and the like.

1,637 of 1911.—Lodovico Lacietto: Ceramic tiles for decorations imitating mosaics.

1,993 of 1911.—Melvin Decorsia Crommett: Means for removing stones from the ground.

2,519 of 1911.—J. & C. G. Bolinders Mekaniska Verkstads Aktiebolag and Adolf Julius Tenow: Machines for sawing timber.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

3,142 of 1911.—Wilhelm Schwarzhaupt: Water filter, adapted to be attached to a supply tap.

4,554 of 1911.—Henry Parish, Albert Lacy, and William King: Sink and waste pipe connector.

4,502 of 1911.—Kathe Krenschitz: Method and device for covering internal and external walls, ceilings, and roofs, preparatory to being covered with mortar or the like, and fabrics for this purpose.

7,149 of 1911.—Ignaz Wieder and Rudolf Pest: Automatically-operated guards for windows.

7,814 of 1911.—Henry John Scott: Method of and means for ventilating rooms.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery by Friday Morning's Post in London and its suburbs.

To Canada, post-free, 21s. 6d. per annum; and to all parts of Europe, post-free, 21s. 6d. per annum; and to all parts of the Empire, 21s. 6d. per annum.

Remittances (payable to J. MORRIS) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

VALENTINES, &c.	Per gallon.
Pale Oak Varnish	0 8 0
Black Oak	0 10 0
Blue Pale Elastic Oak	0 12 6
Extra Hard Church Oak	0 10 0
Black Oak	0 14 6
Blue Elastic Oak	0 12 0
Blue Elastic Carriage	0 10 0
Blue Elastic Carriage	0 10 0
Blue Elastic Copal	0 18 0
Blue French Oil	0 18 0
Blue Enamel	1 4 0
Blue Paper	0 12 0
Blue Gold Size	0 10 0
Black Japan	0 16 0
Black Mahogany Stain	0 9 0
Black Mahogany Stain	0 9 0
Black Mahogany Stain	0 16 0
Black Mahogany Stain	0 10 9
Black Mahogany Stain	0 10 6

COVENTRY.—For erection of a new mortuary and laundry extension at the Union Workhouse. Mr. J. F. Ticker, architect, High-street-chambers, Coventry:—
E. Harris £388 0 0
H. Cousins 357 0 0
C. Garlick 350 0 0
J. Worwood 547 0 0
Jones & Baron 546 0 0
H. Clarke & Sons 540 0 0
C. A. Anelay 538 15 0

DEWBURY.—For the restoration of the Woodrick Church. Messrs. Hoare & Wheeler, architects, 114, Orchard-street, W.
Marsh, Jones, & Cribb £1,213 16 2
H. Mercer 345 10 0
J. W. Banks & Sons 869 0 0
J. Hatch & Sons 855 0 0
H. Spensley 833 6 0
R. T. Smith & Son 818 0 0
E. Pearnley & Sons, Bradford* 766 15 0
J. Akroyd & Son 757 0 0
J. Taylor & Co. 715 0 0

PERMOY.—For erection of twenty-four labourers' dwellings in four blocks. Mr. D. J. Buckley, Town Surveyor, Permoys, and 55, South-nail, Cork:—
D. Creedon, Permoys* £2,738 0 0
D. Hayes, Permoys* 604 0 0

HACKNEY.—For erection of Hackney Infirmary, nurses' home, etc., for the Guardians. Mr. W. A. Finch, architect, surveyor, 76, Finchbury-pavement, E.C.:—
Kerridge & Shaw, Cambridge* £20,340 0 0

HAWARDEN.—For erection of a pair of semi-detached residences at Ewloe Green, for the Trustees of the Ewloe Green Presbyterian Church. Mr. F. A. Roberts, M.S.A., architect and surveyor, Mold:—
C. Cash & Sons £237 0 0
G. H. Wright 737 0 0
G. Wright & Sons 705 0 0

HOCKLEY (Birmingham).—For the extension of Tramway Depot, Whitmore-street, for the Tramways Committee of the City Council. Messrs. Martin & Martin, architects, Colmore-row, Birmingham. Quantities by Mr. Anthony Rowse, Colmore-row, Birmingham:—

Months.	
W. Sapcotes & Sons	£23,233 0 0
A. N. Coles	23,158 0 0
R. Whitehouse & Sons	22,968 0 0
F. W. & J. Webb	22,496 0 0
H. J. Smith	22,450 0 0
D. J. Neal	22,225 0 0
C. A. Horton	22,168 0 0
T. Lowe & Sons	21,034 0 0
T. Elvins & Sons	20,870 0 0
J. Wilson & Sons	20,748 0 0
W. Pattinson & Son	20,475 0 0
J. Barnsley & Son	20,366 0 0
G. Webb	19,977 0 0
E. Crowder	19,057 0 0
T. Johnson, Birmingham	18,757 0 0

LEICESTER.—Alterations and extensions, for Messrs. T. H. Downing & Co. Messrs. Tait & Herbert, architects, Leicester and Coventry:—
Hardington & Elliott £1,934 16 6
J. Chapman 1,890 0 0
A. & W. Chambers 1,836 10 0
Haskard, Rudkin, & Beck 1,798 0 0
F. Elliott 1,753 0 0
H. Herbert & Sons* 1,621 15 0
[All of Leicester.]

LIANBARAN (Glam.).—For providing low-pressure hot-water heating apparatus at Llanbaran Council School, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, S.S.I., County Architect, Cardiff:—
Skinner, Board, & Co., Bristol* £106 0 0

LONDON.—For painting the interior of the Hackney Downs School, for the London County Council:—
Brand, Pettit, & Co. £287
Stapleton & Sons 737
McCormick & Sons 719
J. Stewart 711
F. Bull 707
[Withdrawn.]

LONDON.—For enlarging playground at the secondary school, Stockwell, for the London County Council:—
J. Ford & Sons £373
W. V. Good 342
H. Hollingsworth 297
Lathley Bros. 263
W. Hammond 233
Rice & Son 73

LONDON.—For erection of central school at Malmesbury road, Bow and Bromley, for the London County Council:—
C. Wall, Ltd. £10,332 11 0
Treasure & Son, Ltd. 10,330 0 0
L. H. & R. Roberts 9,961 0 0
Kirk & Randall 9,687 0 0
McLaughlin & Harvey, Ltd. 9,681 0 0
H. L. Holloway 9,644 0 0
W. Johnson & Co., Ltd. 9,618 0 0
E. Lawrence & Sons, Ltd. 9,556 0 0
J. M. Patrick 9,521 0 0
A. E. Syme 9,440 0 0
T. D. Long 9,350 0 0
Patman & Fotheringham, Ltd. 9,343 0 0
J. & C. Bowyer, Ltd., Upper Norwood* 9,086 0 0

LONDON.—For extension of staircase at Silwood-street School, Rothenham, for the London County Council:—
H. Groves £1,198
W. Akers & Co., Ltd. £114
H. Hollingsworth 125
J. Appleby & Sons 117

LONDON.—For painting and repairs at Mayford Industrial School, for the London County Council:—
E. Bissell £310 12 6
J. Harris & Son, High-street, Woking* 175 0 0

LONDON.—For extension of staircase at Haguenet School, Bethnal Green, for the London County Council:—
J. Grover & Sons £376
McCormick & Sons 618
C. R. Price 583
Brand, Pettit, & Co. 375
J. Stewart 563

LONDON.—For erection of a cookery centre at Hungerford-road School, Islington, for the London County Council:—
Treasure & Son £998
J. Stewart 921
McCormick & Sons 906
Thomas & Edge 872
L. H. & R. Roberts 872
Stevens & Sons 859

LONDON.—For erection of a secondary school on the Farnborough site, Wandsworth, for the London County Council:—
C. Wall, Ltd. £25,383 12 11
W. E. Blake 24,712 16 1
W. Downs 24,300 0 0
G. Parker & Son 24,249 0 0
G. E. Wallis & Sons, Ltd. 23,974 0 0
H. L. Holloway 23,540 0 0
J. Smith & Sons, Ltd. 23,389 0 0
J. A. C. Bowyer 23,199 0 0

LONDON.—For structural improvement of the Peckham-park School, Peckham, for the London County Council:—
W. King & Son £15,816 0 0
W. Smith & Son 14,568 0 0
W. Akers & Co., Ltd. 14,198 0 0
J. Appleby & Sons 14,132 0 0
J. Garrett & Son 14,145 0 0
Kirk & Randall 13,979 0 0
Thomas & Edge 13,691 0 0
W. Johnson & Co., Ltd. 13,477 0 0
H. L. Holloway 13,452 0 0

LONDON.—For erection of new premises for the London County Council School of Photo-Engraving and Lithography, for the London County Council:—
Leslie & Co., Ltd. £17,177
J. Allen & Sons, Ltd. 16,783
Higgs & Hill, Ltd. 16,352
Holloway Bros. 16,031
J. Smith & Sons, Ltd. 15,460
Kirk & Randall 15,423

LONDON.—For underpinning of walls, etc., at Highbury Industrial School, for the London County Council:—
J. Grover & Son £1,020
G. Godson & Sons 1,010
Marchant, Hirst, & Co. 982
F. Bull 979
C. R. Price 855
G. S. Williams & Son 820
G. Neal 819

LONDON.—For heating work at the London County Council Shoreditch Technical Institute, for the London County Council:—
G. E. Bradley £587 0 0
E. Deane & Beal, Ltd. 628 0 0
W. G. Cannon & Sons, 107, London-road* 650 0 0

LONDON.—For heating work at Hamond-square School, Haggerston, for the London County Council:—
Stevens & Sons £1,188 0 0
J. Winstone-Smith, Gray, & Co. 1,028 0 0
J. Grundy, Ltd. 887 0 0
J. & F. May 800 0 0
H. J. Cash & Co., Ltd. 854 0 0
Cannon & Hafford 803 0 0
W. G. Cannon & Sons, Ltd. 766 0 0
Fallowker & Sons 759 0 0
[Unsigned] 717 11 6
Tiley Bros., 53, Kingsland-road* 711 11 6

LONDON.—For extending staircase, providing cloak lobby, etc., at Netley-street School, St. Pancras, for the London County Council:—
W. Reason £307 0 0
L. C. Tennant & Co. 481 7 7
H. W. Crook & Son, Ltd. 470 0 0
G. Godson & Sons 463 10 0
Lenn, Thornton, & Co. 460 0 0
Marchant, Hirst, & Co. 454 0 0
J. Marsland & Sons 415 0 0
J. Garrett & Son 398 0 0
A. Roberts & Co., Ltd. 373 0 0
T. Bendon, Ltd., Chancery-lane, Works, Hammersmith* 333 0 0

LONDON.—For rebuilding offices at the Shackwell School, Hackney, for the London County Council:—
J. Grover & Son £140
W. Reason 423
A. J. Staines & Co., Ltd. 423
Stevens & Sons 416
E. Lawrence & Sons 410
J. C. Mather 370

TO CORRESPONDENTS.

TE.—All communications with respect to literary rights, matters should be addressed to "THE BUILDER" (and not to any person by name); those sent for advertisements and other exclusively for publication, should be addressed to "THE BUILDER," and not to the Editor. Communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications. Responsibility of signed articles, letters, and news items at meetings rests, of course, with the authors. We cannot undertake to return rejected communications, but we shall be responsible for the return of photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office unless he has specially asked for them. Drawings sent to or left at this office for consideration should bear the owner's name and address in the top left-hand corner of the drawing. Delay and inconvenience may result from intimation to this office, by a contributor to write an article, execute or lend a drawing for publication, is given to the Editor, who retains the right to reject unsatisfactory. The receipt by the author of an article in type does not necessarily imply its acceptance. Illustrations of the First Premised Design in important architectural competition will always be retained by the Editor, whether they are formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach the Editor not later than 10 a.m. on Thursday. [N.B.—We publish Tenders unless authenticated either by architect or the building owner; and we cannot be responsible for tenders accepted unless the name of the Tender is stated, nor any list in which the Tender is under 1000, unless in some exceptional cases special reasons.]

* Denotes provisionally accepted.

ERSHOT.—For rebuilding bakehouse, etc., for Messrs. Messrs. Reed & Lloyd, architects, not:—
Wells, & Co. £1,249
Kemp & Co. £1,048
Edgemoor £1,080
Bros. £1,049

ROTHNEY (Ireland).—For construction of a reservoir and other works for water supply for the Mr. P. H. McCarthy, architect, 30, West-end-street, Dublin. Quantities by architect:—
Ellis £1,976 8 9
Collen Bros. 8,900 0 0
Mar 9,856 15 5
Martin & Co. 9,770 2 10
J. Graham 9,741 1 6
D. Clarke 9,711 1 6
M. C. Kees 9,616 7 8
McWally 9,616 7 8
L. J. Fitzpatrick 9,179 8 0
Kanturk, Co. Cork* 9,179 8 0
[Engineer's estimate, £9,315.]

ROTHNEY.—For widening and improving street (South), for the Urban District Council, with J. Marsh, Surveyor to the Council. Quantities by Surveyor:—
W. Face £1,975 11 5
M. Carter 1,960 19 7
P. Trentham 1,820 0 0
W. Jenkinson 1,750 0 0
Shrewsbury* 1,750 0 0

ENTRY.—For new second floor offices, Upper street. Messrs. Tait & Herbert, architects, and J. Marsh, Surveyor to the Council. Quantities by Architect:—
F. Elliott £1,375 0 0
Wellerman Bros. 1,365 0 0
Hyde* 1,365 0 0

ENTRY.—For various works, for Messrs. Webster & Co., Ltd., Foleshill. Messrs. Tait & Herbert, architects, and J. Marsh, Surveyor to the Council. Quantities by Architect:—
F. Elliott £178 8 7
W. Face 409 17 0
Hyde* 409 17 0

ENTRY.—For various works, for Messrs. Webster & Co., Ltd., Foleshill. Messrs. Tait & Herbert, architects, and J. Marsh, Surveyor to the Council. Quantities by Architect:—
F. Elliott £178 8 7
W. Face 409 17 0
Hyde* 409 17 0

LONDON.—For enlargement of playground at Marton-road School, Wandsworth, for the London County Council:—
 J. Ford & Sons £633
 Laphorne & Co., Ltd. 600
 W. Hammond 585
 W. & C. Brown 585
 E. A. Jewell 572
 Lathey Bros. 535

LONDON.—For extension of staircase at Rosebery-avenue School, for the London County Council:—
 A. Roberts & Co., Ltd. £800
 A. J. Staines & Co., Ltd. 595
 I. C. Tennant & Co. 585
 J. Garrett & Son 533
 W. Reason 499
 H. W. Crook & Sons, Ltd. 492

LONDON.—For drainage work at Brownhill-road School, Lewisham, for the London County Council:—
 Pasterfield & English £899
 W. Young 884
 R. A. Lowe & Co. 849
 Thomas & Edge 796
 T. D. Leng 796

LONDON.—For erecting playshed at Purrett-road School, Woolwich, for the London County Council:—
 L. Kazak £189
 Thomas & Edge 158
 E. Mills 149
 H. Groves 130
 W. Pollock 130

LONDON.—For painting work at Westville-road School, Hammersmith, for the London County Council:—

W. Brown & Sons £814
 Lole & Co. 694
 A. & F. Follen 577
 T. Bendon, Ltd. 564

LONDON.—For providing and fixing a new boiler at the Peterborough School, Fulham, for the London County Council:—

H. J. Cash & Co., Ltd. £122
 G. & E. Bradley 73
 G. Davis 72
 R. J. Key 58

LONDON.—For building nurses' home and lunacy wards at Hackney Union Infirmary, Homerton, N.E., for the Guardians. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C. Quantities by Mr. G. T. G. Wright, 3, Great Winchester street, E.C.:—

H. J. Carter, Ltd. £24,408
 Fitch & Cox 24,374
 Leslie & Co. 23,507
 T. C. Glynn 22,900
 A. E. Symes 22,500
 S. E. Moss 22,402
 Clark & Sons 21,900
 W. Johnson & Co. 21,880
 Bowley Bros. 21,783
 F. & G. Foster 21,746

LONDON.—For reconstructing Nos. 1 to 4, Station-buildings, Catford, for Mrs. Earl and others. Messrs. Norfolk & Prior, architects, Catford Bridge:—
 T. A. Boughton £2,000
 J. Watt 1,575
 † Amended estimate accepted, including shop front, £1,600.

LONDON.—For additions to "Rising Sun," Bushey Green, for Mr. A. J. Norris. Messrs. Norfolk & Prior, architects, Catford Bridge:—
 J. Laird, jun. £85
 J. Watt 78

OGILVIE & CO., Telephone: DALSTON 188.
 Many years connected with the late firm of W. H. LASCELLES & Co., Ltd., of Bushill Row.

Amhurst Works, DALSTON LANE, N.E.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

LONDON.—For erecting block of shops, for Messrs. Godline Bros., in Perry Vale, Forest-hill. Messrs. Norfolk & Prior, architects, Catford Bridge:—

T. D. Leng £4,125
 H. E. Kennard 3,250
 Bridge & Galson 3,079

PONTYPRIDD.—For erection of a storage battery, etc. Mr. J. E. Teasdale, engineer, Electricity Works, Trefoert:—

Tudor Accumulator Co., Ltd. £2,340 13
 For Battery Booster and Spare Parts.
 Lancashire Dynamo and Motor Co. £503

TUNBRIDGE WELLS.—For the erection of parish room and library to be known as King's Hall, at Withyham. Mr. Walter Kirk, architect, Withyham, Tunbridge Wells:—
 J. Kingswood, Withyham* £468 10

WATFORD.—For new business premises in Queen's-road, for Mrs. Kempton. Mr. C. F. Ayres, architect, Watford. Quantities by architect:—

G. Wiggs & Sons £1,045
 W. King & Sons 1,036
 G. & J. Waterman 1,017
 A. & C. Saw 979
 W. & D. Wilkins 977
 Ensor & Ward 933

[All of Watford.]

WATFORD.—For additions to Cokemham House, Clarendon-road, for Mr. Thos. Peabody. Mr. Chas. F. Ayres, architect, Watford:—

G. & J. Waterman £422
 Clark Bros. 405

[All of Watford.]

WATFORD.—For erection of a house in the Avenue, for Mr. G. E. Browne. Mr. Chas. P. Ayres, architect, Watford:—

H. Brown £1,310
 Clark Bros. 1,288

[All of Watford.]

WORKSOP.—For erection of children's wards, etc., for the Hospital Committee. Mr. A. H. Richardson, architect, Market-place, Worksop. Quantities by architect:—

M. McCarriock £2,255
 G. G. Middleton 2,160
 Ilett & Sons 2,119
 A. Chadwick 2,100

[All of Worksop.]

WREXHAM.—For reconstruction and improvement of heating apparatus at the Victoria school. Mr. J. England, Borough Engineer, Willow Depot:—

W. Hughes £135
 Jenkin, Davies, & Sons 129
 F. J. Proud & Sons 104

[All of Wrexham.]

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write

BETHNAL GREEN SLATE WORKS
BETHNAL GREEN, LONDON, E.

Ham Hill Stone.
Douling Stone.
Portland Stone.

The Ham Hill and Douling Stone Co., Ltd.
 (Incorporating the Ham Hill Stone Co. and C. Trask The Douling Stone Co.)
 Norton, Stoke-under-Ham, Somerset.
 London Agent:—Mr. E. A. Williams
 16, Craven-street, Strand.

Grey Stone Lin.
 GROUND LIME, WHITE CHALK LIME,
PORTLAND CEMENT.
 PLASTER, SIRAPITE, AND SAND.

Delivered in truck loads to any Station, or by vans in Works:—
JOSEPH S. PETERS.
 Works: MERTHAM, SURREY. Tel.: MERTHAM 388.
 Depot: 47, OLD KENT ROAD. Tel.: HOP 388.

WHAT!
 USE WHITE
LIME-SAND BRICK
 Of the Finest Quality,
FOR CONTRACT WORK.
WHY?

E The Bricks are uniform.
C Less mortar is required.
C Close joints can be made.
U A 15 per cent. more bricks can be laid per day.
U Where light is required they need no whitewash.
S Saving of material and labour.
E USED BY THE MILLION IN GERMANY, AMERICA, AND IN THIS COUNTRY.

These Bricks are made by the
GODSTONE BRICK & TILE CO., LTD.
 Oxford Road, Godstone, Surrey,
 and can be delivered in quantities of not less than
 within 10 miles of the Company's Works at 25 per 1,000.
 Send for Free Samples.

Asphalte.—The Seyssel and Metallic
 Asphalte Company (Mr. H. Glenn), Office
 Poultry, E.C.—The best and cheapest material
 for damp courses, railway arches, ware
 floors, flat roofs, stables, cow-sheds and
 rooms, granaries, gun-rooms, and for
 Asphalte Contractors to the North Bridge.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
 4 & 5, East Harding-street,
 Fetter-lane, E.C.

ASPHALTE
 For Horizontal & Vertical Damp Courses
 For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied
 THE
French Asphalte Co.

Whose name and address should be inserted in
 specifications.

For estimates, quotations, and all information
 apply at the Offices of the Company.

5, LAURENCE POUNTNEY HILL
CANNON STREET, E.C.

EWART'S
"EMPRESS"
 Established 1834.
 Telephone: 2570 North.
EWART & SON Ltd.,
 346-350, Euston Road, London, N.W.
SMOKE-CURE

Cures in 19 cases out of 20.

Write to-day for Illustrated Catalogue Free to

VOL. CL—No. 3579.

SEPTEMBER 8, 1911.

PAGE

AND THE ARCHITECT	263
CENSUS OF PRODUCTION AND THE BUILDING	
INDUSTRIES	264
INDEX	265
I. STORY OF THE BRIDGE. V.—THE EVOLUTION	
OF TIMBER BRIDGES (WITH ILLUSTRATIONS)	265
MUSEO BARLEACCO, ROME (WITH ILLUSTRATIONS)	
.....	268
HISTORICAL SOCIETIES	270
PETITION NEWS	270
SERIAL NEWS	270
RESPONSES	271
ES (WITH ILLUSTRATIONS) ..	271
TEN YEARS AGO	272
TOMAL SUMMARY	273
CONSTRUCTION COURTS CONVENTION (WITH	
ILLUSTRATION)	273
ES TO ILLUSTRATIONS	274
II. REVIEW OF CONSTRUCTION :	
SECOND REPORT OF THE JOINT COMMITTEE ON	
REINFORCED CONCRETE	275

MONTHLY REVIEW OF CONSTRUCTION (continued):—		
SOME CONFIDENTIAL IDEAS OF SLATING (WITH ILLUSTRATIONS)	276	
NOTES (WITH DIAGRAMS)	278	
THE BUILDING TRADE:—		
RECENT WORKMEN'S COMPENSATION CASES. I.	281	
INCURMENT VALUATION	281	
PLANT EXISTENT FOR COLD WEATHER (WITH DIAGRAM)	281	
CHANGES IN RATES OF WAAGES	282	
AN INDIAN MORTAR MILL (WITH ILLUSTRATION) ..	282	
A BILL RELATING TO LABOUR DISPUTES	282	
GENERAL BUILDING NEWS	282	
PROJECTED NEW BUILDINGS IN THE PROVINCES ..	283	
NUBES'S HOME AND SHORT-PERIOD LUNATIC WORKS, BEXLEY UNION INFIRMARY (WITH ILLUSTRATIONS)		
THE ROYAL COMMISSION ON SEWAGE DISPOSAL ..	284	
HOUSING IN MIDDLESEX	285	
LONDON COUNCILS	285	

	PAGE
LAW REPORT.....	285
FOREIGN AND COLONIAL	286
TRADE CATALOGUES	286
PATENTS.....	286
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	287
SOME RECENT SALES.....	289
PRICES CURRENT.....	289
TENDERS.....	290

Illustrations.

EDINGTON CHURCH, WILTS. MEASURED DRAWINGS
BY MR. T. F. W. GRANT, A.R.I.B.A.
LONDON COUNTY HALL: BRONZE CHAIN SUPPORTS.
DRAWING BY MR. J. R. LEATHART.
"THE STORY OF THE BRIDGE"—V.—
BRIDGE OF BOATS AT COLOGNE.
SION BRIDGE AND MOUNT ARDON.
KING EDWARD MEMORIAL HOSPITAL, EALING.
MESSRS. F. HALL-JONES & ERSKINE S. CUMMINGS,
A.R.I.B.A., ARCHITECTS.



The Museo Barracco, Rome. (See page 268.)

WE must offer our congratulations to the R.I.B.A. in that they have not been discouraged by the recent rebuff in the matter of St. Paul's Bridge, and are continuing the work inaugurated at the Congress last October, having for its aim the education both the public and the architect in the artistic aspects of town planning. The publication of Part I. of the R.I.B.A. "Suggestions to Promoters of town Planning Schemes" receives the

support of the Right Hon. John Burns, who contributes a short commendatory Preface, explaining the necessity for co-operation and a better organisation to secure harmony between the means of industrial life, the pleasure of domestic surroundings, and the sense of civic beauty.

The document, prepared by the R.I.B.A. strikes us as particularly impartial and well balanced in its definition of the position of the architect in

regard to town planning. It would have been impossible to draw up suggestions of any value without referring to the numerous and many-sided aspects of town planning, but, while these are cited, the expressions of opinion are carefully limited to those that might appropriately come from an architectural body.

The headings used to subdivide the various sections simplify the consideration of the subject, and, while it must be admitted that other points would arise

beyond those dealt with, it may be claimed that they fairly represent the main questions that occur in civic development.

The first section deals with the essentials of the general civic survey—topographical, physical, historical, and economic; the second with the technical methods suitable for recording the actual state of a town. Section three is entitled "New Traffic Facilities," and treats of the working out of the lines of future development and the consideration of the means of access and transport such developments demand. Then in section four we pass on to "Main and Subsidiary Centres," in which a more direct appeal to the architect is made, for, though this portion opens with a note on the economic desirability of a system of centres, it passes on to indicate the artistic value of emphasising important points by grouping public buildings there.

In sections five to eight we return to various aspects of the traffic question in regard to the planning of roads; here we see the practical considerations broadly outlined with a view to showing that they have not been ignored, while the architectural aspect of the case is dealt with in greater detail, though in a spirit so comprehensive and so free from any expression of narrow prejudices in favour of one type of treatment or another as to leave the utmost possible latitude in any application of the rules, if such they can be called, that it lays down. If this portion is open to any criticism at all, it can only be on the ground that it may be a little too catholic, and therefore not quite sufficiently definite in its pronouncements.

Section nine is devoted to the allocation of areas for special purposes, a matter in which we think more difficulty is likely to arise than in any other. However desirable such a procedure may be proved to be, it is so much at variance with the normal habits of the British race that much water will flow under the bridges before it is fully established.

We have been so accustomed to consult only our individual judgment in the selection of sites for various purposes that the submission to authority in such a matter is likely to be resisted. Indeed it may fairly be claimed that at present our municipal bodies are hardly sufficiently educated in this question to be completely relied on. However, time will rectify this, and, after all, it is not so much the architect's affair. Though some in the profession may be well qualified to give useful advice, it will be less in the capacity of architect than in that of one technically experienced in building undertakings.

Turning to section ten, we have a brief but suggestive summary of the requirements in regard to parks, recreation grounds, and other open spaces; here, again, anything likely to unduly limit the ideals of the designer is carefully avoided.

Last, but certainly not least, we come to the question of the buildings; and here the architect's case is stated in the following terms:—

"In the completed town it is the buildings which are seen and produce whatever effect, good or bad, is attained; therefore, the problem of town planning

in its final form is essentially an architectural problem. The working out of the exact form in which the requirements can be satisfied so as to produce a fine town is a function of the creative imagination; and it can only properly be performed by one who has had the architectural training necessary to enable him to adjust the proportions of the many parts, so to place the different buildings, and group them upon the ground and in relation to each other that when erected they may compose properly.

The preparation of all the data upon which the design must be based hardly falls within the province of the architect; and it would seem that this formulation of the city's requirements, and of the limits within which the designer must work, is the proper sphere of the surveyor (aided, of course, by the engineer, the valuer, the economist, the sociologist, and the antiquarian). He should survey the conditions, suggest the requirements, and should be consulted as to the methods of satisfying them; but for the design of the town plan, the architecturally-trained mind is as essential as for the design of a single building; for the work consists in applying upon a wider field and with greater scope the same principles which govern the designing of individual buildings. The appreciation of the relation of masses and voids, the apprehension of the right points for emphasis, and the power to combine into one creation many differing parts by bringing them into harmonious proportion are equally required in the field of town planning, if there is to be produced that rhythm in the plan and that spacious breadth of ordered elevation in the groups of buildings which so largely constitute the beauty and grandeur of cities."

We have little to add to the paragraph just quoted. Architects will see that the R.I.B.A. has made its claim for them modestly but firmly; such a claim will doubtless secure, in due course, the recognition it deserves, provided, and provided only, that architects themselves justify it. It is for the architect to see that he is thoroughly qualified to advise in view of the fact that at any time his advice may be asked for on the question of civic improvements. Let him acquire such a general knowledge of the economic and social aspects of this subject as will enable him to put forward his artistic conception in a practicable form, and thus ensure attention. Of course, no man with ideals of any kind can expect to escape criticism, but if he can meet the critics on their own ground of hard facts his artistic aims will, rightly or wrongly, stand a better chance of securing support.

R.I.B.A. SESSIONAL MEETINGS 1911-12.

The following are the subjects to be dealt with at meetings of the Royal Institute of British Architects arranged for next session:— Collegiate Architecture (Mr. Edward P. Warren, F.S.A., F.R.I.B.A.), The Newer Responsibilities of Architects (The Practice Standing Committee), Colour Decoration (Sir Alfred East, A.R.A., and Mr. Edgar Wood), Modern French Sculpture (Mr. H. Heathcote Statham, F.R.I.B.A.), The French Renaissance (Mr. W. H. Ward, M.A., Cantab., A.R.I.B.A.), Modern Methods of Construction (Mr. Wm. Dunn, F.R.I.B.A.), The Royal Institute Library and Some of its Contents (Mr. C. Harrison Townsend, F.R.I.B.A.), Recent University Architecture in the United States (Mr. R. A. Cram).

THE CENSUS OF PRODUCTION AND THE BUILDING INDUSTRY

THE general character of the Census of Production, issued in the form of Blue Books by the Board of Trade, has been

fully dealt with by the daily Press; it only remains to us to summarise the portion (Part IX.) now published, showing the magnitude of the industry connected with building. As this only be clearly appreciated on the basis of the proportion these industries bear to the whole output of the country, should first take note of the fact that according to this census, the grand total for all trades in the United Kingdom is as follows:—

1. Gross output, selling value, or value of work done, 1,757,000,000.
2. Materials used cost 1,019,000,000.
3. Work given out, amount paid other firms, 26,000,000.
4. Net output, 712,000,000.
5. Persons employed, 6,936,000.

In addition to the number of persons employed given above there are about 100,000 outworkers, so that the average number of persons employed in work covered by the census must be in round figures seven millions.

It should be noted that the output of one trade or factory may constitute materials for other trades or factories, so that the figures relating to gross output and to materials involve a considerable amount of duplication. No duplication, however, is involved in the figure of net output. By adding to the net output the value of materials purchased from sources outside the industry, covered by the table (e.g., from agriculture or from abroad) there would be obtained for all these industries regarded as one unit, the value of the aggregate output ready for consumption or export. The value of such materials was not separately shown in the returns, but it is hoped that it may be estimated at a later period from information available to the Census of Production Office.

The Office register of building and contracting firms was compiled from the trade and local directories, and 118,366 schedules were issued. Of these, however, about 45,000 had to be cancelled as duplicates, or as issued to jobbing men, bankrupts, deceased persons, or persons no longer in business, and nearly 10,000 were transferred to other trades. From the information in the possession of the Census Office it is believed that, of the firms to whom schedules were issued, few of any magnitude have failed to furnish returns.

The "output" shown in the following table is the gross output of each trade, i.e., where goods pass through the hands of several manufacturers at different stages, their quantity and value has been registered at each stage. Similarly where work such as building work has been partly sub-let to sub-contractors the value of the whole work and of each of the parts so sub-let has been independently recorded. The value of this gross output is, therefore, greater than the value of the goods ready for export or consumption manufactured by each trade considered as a unit, or than the value of the work done by each trade considered as a unit, and the value of the "materials

industries in detail. The briefest summary of the contents of this valuable document would far exceed the space we could give.

	Gross Output, Selling Value or Value of Work Done.	Materials Used. Cost.	Work Given Out. Amount Paid to Other Firms.	Net Output. Excess of Column (1) over Columns (2) and (3).	Persons Employed.	Net Output per Person Employed.
	(1)	(2)	(3)	(4)	(5)	(6)
	£	£	£	£		£
Mining and Contracting Trades Including Ventilation, and Sanitary Engineering, Factories and Workshops	87,667,000	28,609,000	6,404,000	42,954,000	513,961	£ 84
Quarries	2,883,500	1,277,000	43,000	1,565,000	14,144	111
Public Authorities	1,145,000	107,000	—	1,038,000	73	73
Quarries, other than Slate, Lime- stone, and Iron Quarries.	1,985,000	495,000	—	1,413,000	16,188	87
Quarries, and Iron Quarries, and Slate, Limestone, and Work- shops	3,775,500	534,000	—	3,241,000	43,184	75
Public Authorities	7,813,000	2,908,000	51,000	4,764,000	50,822	94
Under takings	20,839,000	9,292,000	—	11,546,000	51,946	210
(a) Companies	10,769,000	5,097,000	—	5,732,000	28,585	201
(b) Public Authorities	—	—	—	—	—	—
Networks Under takings	2,172,000	145,000	—	1,727,000	1,716	395
(a) Companies	8,437,000	1,110,000	—	7,327,000	17,343	422
(b) Public Authorities	—	—	—	—	—	—
Electricity Under takings.	3,182,000	1,186,000	—	1,996,000	8,499	235
(a) Companies	5,721,000	2,149,000	—	3,572,000	14,119	253
(b) Public Authorities	—	—	—	—	—	—
Total	156,615,000	69,226,000	6,498,000	\$6,881,000	780,747	—

Our only course is to refer our readers to the Blue Book itself, with the assurance that they will find the statistics clearly and systematically arranged, and that, as far as possible, the subdivision is judiciously classified; though, of course, in an industry possessing so many ramifications as that of building it is not always easy to draw an exact line as to production that comes under this heading and that which does not.

THE *American Architect* makes the interesting announcement that for the first time it is proposed to teach the elements of architecture in the public schools of Los Angeles, California. Some of the architects of that town have been requested to make suggestions, and to draw up a tentative scheme for the consideration of the education authorities. The value of architecture has for some time past been fully recognised by the universities of America, it is perhaps not surprising that the more highly cultured section of the community, which has benefited by a University training, is alive to the advantage of spreading a wider knowledge among the people at large. Considering the importance of architecture in the life of the State, the intimate manner in which it enters into almost every aspect of the life of the individual, and the tremendous influence it exercises on the daily comfort, the health, and happiness of the people, it is a healthy sign that, at any rate, in Los Angeles, architecture is no longer to be regarded simply as a branch of polite learning suitable for cultivation by the assured classes in the academic atmosphere of the University, but as a practical matter which appeals direct to the everyday necessities of the worker. It is in the recognition of this fact by the general mass of the people that the chief hope for the future of architecture seems to lie, and there would appear to be no better way of encouraging its recognition than by familiarising the coming generation with the elementary facts and principles of fine building. Should the examples so worthily set by Los Angeles

be successful, it will no doubt be generally followed in the United States, but it is perhaps too much to expect that it will be immediately initiated here. We have yet to interest academic circles; to convince those in a position to influence the management of our elementary schools: to educate our masters.

THE outlines of the settlement reported to have been arrived at between the conflicting claims of the Natural History Museum and the Science Museum seem to be in the nature of a compromise. The Spirit Room now occupying the site immediately adjoining the Natural History Museum on the north side—which it was proposed to give up to the Science Museum—is to remain. The Science Museum is to be built to the north, and space is to be left on its site for future extensions of the Spirit Room. This looks as if one building will be dovetailed into the other in a way which, we fear, will render any fine architectural treatment impossible. We recognise the difficulties of the problem, but these difficulties are, in our opinion, largely due to the attempt to wedge in another large building, requiring space for future extensions, on an insufficient site. We have already pointed out (July 21, p. 61) the initial mistake in dealing with the whole group of public buildings from the Albert Hall to the Natural History Museum, and can only repeat that if it is worth while building a new Science Museum it is worth while to provide it with an adequate site, even if it has to be paid for. In the meanwhile we are glad to see that there appears

H.M.'S OFFICE OF WORKS are about to clear the site of St. George's Barracks at the rear of the National Gallery. The

barracks were built as a portion of the extensive alterations carried out in that quarter in pursuance of the Acts of 1813 and 1826 (53 Geo. II., c. 121, and 7 Geo. IV., c. 77). They stand on the site of the Earl of Leicester's Green Mews and the Crown, or Upper, Mews—component parts of the Royal Mews which were transferred thither from Bloomsbury in 1534. In the *Builder* of January 17, 1903, is illustrated Wales's print, of about 1750, depicting the south front of the State horses' stables which stood along the south side of Upper Mews—the middle gateway opened into the Upper and Green Mews to the north. That building has been ascribed to Kent, but it seems that the elevation was designed by Lord Burlington, who in 1732 rearranged the Mews for George II.

MR. EDGAR L. CHAPPELL
has contributed to the

Housing. has contributed to the *South Wales News* a series of articles on the deplorable condition of many of the old rural cottages in Wales. It may be within the cognizance of many of our readers that such a state of things may be paralleled in the agricultural labourers' cottages to be found in many other districts of the British Isles. The fact that, despite these drawbacks, the rural death rate is lower than the urban cannot relieve those responsible from the obligation to provide suitable housing for the farm hand, and where the responsibility cannot be fixed on the land owner it becomes the duty of the local authority to deal with the matter. That the death rate from consumption is higher among women than among men in these rural areas may be regarded as an indication of the insanitary state of the cottage home. The man is more exposed to the inclemency of the weather, but this is less injurious than indoor life under unhealthy conditions.

BY WALTER SHAW SPARROW.

THIS subject is very important, and we took a rapid glance at it in my first article, but no time will be lost if we try to get into closer touch with its broad aspects.

There are three lines of descent in the lineage of timber bridges, and each of the three comes down to our times from a very remote period in the life of prehistoric man. Sometimes they unite and sometimes they intersect, and the results produced by their separate action and by their intersection evolve traditions and types in the art of building. It is convenient to put a name on these lines of descent:—

1. Primitive endeavour, which often hardens into stereotyped forms of unskilled carpentry.
2. Primitive carpentry of a progressive order.



Brandon Creek. Type of Norfolk Timber Bridge.

From Francis Stone's "Norfolk Bridges."

3. Skilled and constructive carpentry in which mechanics and fine art go hand in hand together.

The first line of descent had its rise in two ways—in overthrown trees, which may be called windfall bridges, and in branches of trees that happened to span rivers from opposite banks. These were the earliest suspension bridges, and natives use them now in Central Africa.

The nature-made bridge is older than the remains of the Galley Hill man, the earliest known Briton, whose age has been estimated by Professor Arthur Keith as about 170,000 years, perhaps more, and whose skeleton, dug up from palæolithic gravel in Kent, together with teeth and bones of the mammoth, a tooth of the hippopotamus, and a lion's foot, is well within the range of variation in recent man. This wonderful fact is admitted by all anthropologists.

So we may rest assured that the cradle centuries in the nursery of the human race preceded the Galley Hill man by a long, indefinite time—long enough to get rid of simian characteristics. Indeed, the Galley Hill man was contemporary with remarkable attainments in the line of art, sculpture, engraving, and painted decorations on the walls of caves. Hunting, too, required infinite resource and pluck and skill, because the fauna comprised lions, bears, hyenas, sabre-toothed tigers, bisons, the mammoth, and the woolly rhinoceros. It is clear, then, that 170,000 years ago, or thereabouts, the intelligence of man was alert and wideawake; and this is a thing to be kept in mind when we think of the romantic descent of bridges from a tree which a storm of wind had hurled astride some deep hollow in the ice or in the land, making a safe footway for an early ancestor of the Galley Hill Briton.

From this accident we pass on to a tree which man himself cut down deliberately in order that it might span a dangerous gap in a field of ice or an abyss formed by a mountain torrent. Human intelligence, the inventor of sculpture and painting, would wish to do what a gale of wind had done by accident; and from that moment the first principles of secure bridge-making were discovered. Not only was the footway strong and firm, but branches growing from the tree-trunk gave support to the hands. Any bough that blocked up the way could be topped off with a flint axe, till at last no handholds would be left save those which were convenient and necessary. Even to this day in country woods we find rustic bridges having not much more art, bridges so narrow and so simple that the footway, roughly hewn from a tree-trunk, is rudely guarded at the sides with handrails of dressed branches.

This first type of bridge is a narrow pathway for men walking single file. But its descendants are many and various. I will mention a few. The earliest would be suggested by circumstances of war. A single tree-trunk stretching from bank to bank would not be of much help in a rapid attack, since the act of crossing it single file would be a slow movement and quite easy to repel. On the other hand, if several tree-trunks were laid side by side several warriors could advance abreast; and if the tree-trunks were placed at some little distance from each other, then covered transversely with branches and with turf and soil, a still wider bridge could be made with the exercise of less invention than that which Quetzalcoatl loved to exhibit both in his rock-painting of animals and in his sculpture. If you consult Don Antonio de Ulloa (1716-1795), you will find that bridges of this type



Ditchingham and Bungay. Type of Norfolk Timber Bridge.

From Francis Stone's "Norfolk Bridges."

have long been made in the mountainous parts of South America. He says the wooden bridges "consist of only long beams laid close together over precipice, and form a path about a yard and a half in breadth, being sufficient for a man to pass over horseback."

Other types of the primitive bridge suggested by man's earlier efforts to make home for his family. Thus, for example, the construction of the first lake-dwelling was a great event in the primeval era of bridge-making; and we infer, from evidence that still exists in different parts of the world, that the foundation of timber under lake-dwellings became useful in spanning rivers, as among the Gauls, whose methods of bridge-building united the footway of felled trees to a crossing of tree-trunks to form piers and abutments. This Gaulish handicraft has survived in Savoy, and we find an Eastern parallel in the log piers of Kashmir bridges, whose descent from lake-dwellings is often strikingly suggested by quaint little rude booths or shops along the footways.

Again, another development from the primitive bridge is what I may call the step-ladder bridge, such as you will find at Bettwyl-Coed, where the Miners' Bridge takes a sharp angle from a low level to the summit of a bank. That is a ladder rather than a bridge; and a similar thing, but more adventurous and intricate, was seen in Tibet by Capt. Turner in 1783. It was a bridge of turpentine-wood forming a ladder; these were inclined towards each other, but separated at their tops by a considerable space, across which was a level platform. The ladders tapered upwards, their lower ends were fixed in masonry, and handrails aided the ascent. This bridge, in 1783, was said to be 140 years old. Its purpose was to escape from floods, and so to connect it with that old type of European bridge which ascended at a sharp angle to the centre and then shelved downwards. Many railway lines of to-day are crossed by stepped bridges having a horizontal platform at top to connect their sides.

But these bridges are all firm and heavy and you will think of other primitive examples which are frail, like Congo bridges of boughs and stakes and bindweed. When came these fragile structures? From the primeval art of the round hut, from the architecture of rods interlaced with osier and plastered with mud and clay? Still bridges and bamboo bridges belong to the phase of human handicraft having a certain frail elegance, a certain revolt against mud and clumsy heaviness. Such work is often ineffectual, yet it lives on in a good many parts of the world, and here and there it has some architectural charm, notably in the roofed bridges of bamboo at Sumatra for protection against heat. In another old type of covered bridge, namely, the Swiss, the aim is to keep the footway free from snow. But the odd thing is that the timber bridges of Switzerland are still primitively rudimentary in construction; they seem to show no advance on the Pons Subleicius of the Romans.

Several authorities have attempted to restore the Pons Subleicius from descriptions given in the historians, and I met two of the restorations, one by Canina and the other by Colonel Emy. They differ much, Canina strengthening the footway between each span, fixing a beam slantwise from each road bearer to one of the pier timbers. Colonel Emy, on the other hand, chooses a slighter design, in which I do not feel the genius of the Roman people. That the Subleician bridge was a solid structure, very difficult to destroy, is vividly shown in the legend of Horatius Cocles and the great fight which he and his two companions fought against the whole Etruscan army under Porsenna. It was necessary for them to keep the enemy at bay while the Romans broke down the bridge behind them, and the

ory does not lead us to suppose that many
res made a gap without much difficulty.

The Roman timber bridges, as described
by the historians, have had many modern
descendants. Palladio built one at Bassano,
the Bridge of Brenta, but he added a roof
carried by slender wooden pillars. There
were five arches of 12½ metres each, and a
roadway 9 metres wide. The beams bearing
from pile to pile were strengthened with
raining beams and with braces; this
formed a rude approach to an arch of
timber, and like an arch it exerted a lateral
thrust and required abutments. Perhaps
you have seen illustrations of a wooden
bridge designed by Robert Stevenson and
built over the Clyde at Glasgow in the years
1831 and 1832. The main principles were
precisely similar to those both in Palladio's
work and in the drawing by Canina of the
Pons Sublucius.

Stevenson's bridge had fourteen spans,
each of 34 ft., measured from centre to centre
of the piles forming the piers, and giving in
all a waterway of 476 ft., uninterrupted
except by the narrow width of the piles.

A plan of framework consisted of seven ribs,
each composed of three beams—that is to say,
two diagonal braces and a horizontal
raining beam. The braces were 13 in.
depth and 12 in. broad, and each straining
beam was 12 in. square. The whole
structure was carried by thirteen rows of
sinking piles. Seven piles made a row,
spaced at a distance of 5 ft. 2 in. apart,
and secured to each other by four pairs of
star braces.

To find European timber bridges of rare
excellence we must study the three great
masterpieces designed and brought to com-
pletion by the brothers Grubenmann, and
destroyed during the war of 1799. Ulrich
and Jean Grubenmann were village car-
penters, born at Teufen, in the canton of
Appenzell. Ulrich seems to have been the
elder of the two; certainly he was a man of
true genius, who gained unrivalled know-
ledge of what could be done in the spanning

of great distances by a skilled use of corbelled
and trussed bearings. He began the bridge
of Schaffhausen in 1755-56, and in 1758 his
work was complete. The total distance
covered in two spans was 364 ft.; the stone
pier was 8 ft. out of a straight line, and the
angle pointed upstream. The abutment near
Schaffhausen was 171 ft. from the angle,
and from the angle to the opposite shore was
193 ft. Ulrich would gladly have spanned the
whole distance in a straight line and in one
magnificent bay, but the authorities inter-
posed, ordering him to find use for a
masonry pier remaining from a stone bridge
which a flood had ruined in 1754. Telford
believed that Ulrich Grubenmann could have
built the whole structure over the Rhine
in a single suspension from abutment to
abutment. So perfect was the work, so
admirably scarfed, trussed, strutted, braced,
bolted up, and suspended, that only two faults
could be found with it—namely, the roof

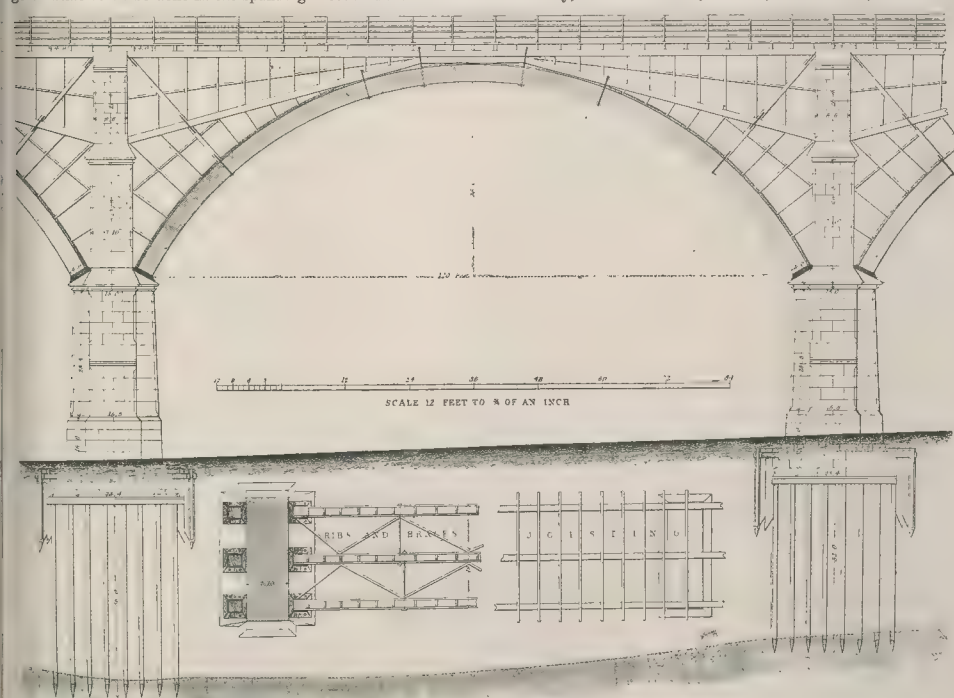
was too heavy and ugly, and the parts were
too dependent on each other, so that an
injury to one portion of the structure from
a cannon-ball, for instance, might have proved
disastrous to the bridge as a structure.

Grubenmann's methods were simple.
"The braces proceeding from each abut-
ment," said Telford, "are continued to the
beam which passes along the top of the
uprights, and the lowest of these general
braces are actually united under that beam,
thereby forming a continued arch between
the abutments, the chord line of which is
364 ft. and the versed sine about 30 ft.
These braces are kept in a straight direction
by the uprights, which are placed 17 ft. 5 in.
apart. If this bridge had been formed in a
straight line between the abutments I can
see no reason why this form of construction
should not have supported a roadway of
about 18 ft. in breadth, as well as a slight
roof; because, in that case, all the weight



Mendham. Type of Norfolk Timber Bridge.

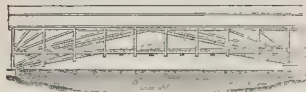
From Francis Stone's "Norfolk Bridges."



Newcastle, North Shields, and Tynemouth Railway: Willington Dean Railway Viaduct. Victorian.

arising from the braces which proceed from the middle pier would have been saved, and the roof might have been made much simpler and lighter."

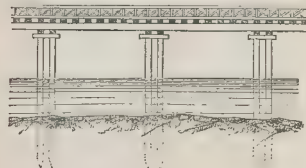
While Ulric Gruenmann was working at Schaffhausen his brother John built a bridge quite similar in kind at Reichenau, 240 ft. in a single span; and then, some years later, the two brothers constructed their Wittingen Bridge over the Limmat, near Baden. It had a span of 390 ft. The form of construction was different. Seven beams were built close upon each other, forming a catenarian arch between the abutments, with a rise of 25 ft. The beams were of oak, in lengths of 12 ft. or 14 ft., breaking joint in the manner of masonry. They were not fastened by pins, bolts, or scarfings, but were



First Arch of Schaffhausen Bridge. By the Brothers Gruenmann.
From Professor Jenkins's "Bridges."

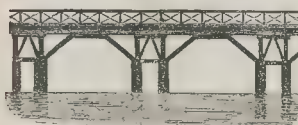
kept together by iron straps placed 5 ft. from each other and fastened by bolts and keys. The roadway intersected them at about the middle of their rise.

The influence of the Gruenmann brothers travelled to America, where it found in Bludget an able interpreter, for Bludget's bridge over the Portsmouth River was similar in principle to the bridge at Schaffhausen over the Rhine, and its span was 250 ft. Since that time the evolution of timber bridges has remained in the U.S.A., where it may be studied in work having great variety, for it ranges from the criss-cross of logs for bearing piles to the most intricate combinations of lattices and trusses. There is at times too much intricacy. "Many wooden American bridges are trusses which



The Pons Sublicius, Rome. Reconstructed by Colonel Emy.
From Professor Jenkins's "Bridges."

almost defy analysis, the designs being, however, obviously suggested by an attempt to combine at least two of the three types of bridges. No advantage whatever is gained by a combination of this kind; on the contrary, great disadvantage is almost sure to follow its adoption, namely, that it will be impossible that each part of the structure should, under all circumstances, carry that portion of the load which the designer entrusted to it. For suppose a bridge constructed partly as a girder and partly as a suspension bridge, the girder being very stiff and deep, the chain perfectly flexible with considerable dip. Let the chain and girder each be fit to carry half the passing load. It is perfectly conceivable that the deflections of the two should be so different that the girder would, under the actual load, break before the chain was sensibly



The Pons Sublicius, restored by Canina

strained, or the difference in the relative dip of the chain and depth of the girder might be such as to cause the former to give way first." (Professor Fleeming Jenkin.)

And many American bridges provoke another criticism they belong to a nation that believes itself to be free from the dangers of war in its own home territories. Think of the giant Portage Bridge, and imagine a modern shell falling upon its woodwork, which rises on a huge scaffold of timber frames over the Genesee River, 234 ft. above water level. The scaffold piers rest on masonry piles above the level of floods, and they taper upwards to a double gallery forming a support for the railroad. The general effect has the trellised fascination of a scaffolding, and we see in the design that same passion for a sort of airman'ship in light craftsmanship to which street architecture in the U.S.A. owes the sky-scraper.

In a later paper an attempt will be made to consider modern bridges in their relation to those preparations for war that turn so many countries into armed camps.

THE MUSEO BARRACCO, ROME.

By LIONEL B. BUDDEN, M.A.*

In Italy the artistic movement known as the Greek Revival left few architectural memorials. As the Latin builders were for the most part unaffected by the mediæval forms of constructive expression common to the greater part of Europe between the XIIth and XVth centuries, so throughout the period of Gallic and Teutonic Hellenism, some three hundred years later, Italian architecture pursued a traditional course. But the tendency of modern times towards a cosmopolitan style, and the international influence of the French and American ateliers have, during the last two decades, become irresistible factors in the development of Classic design, even south of the Alps; and if examples of the change in point of view and of practice are few enough, they are of profound significance, since they indicate in some degree the future possibilities of a vital manner.

The neo Grec cemetery at Milan has real breadth and imaginative force. The pavilion of the Royal Rowing Club at Venice shows a sensitive delicacy in design worthy of Burton. Between these extremes of an infinitely flexible register are other works in Rome, Florence, and Naples that reveal the same living quality of thought, the same sincerity of endeavour—works that are as far removed from archaeological scene-painting as the most modern and original products of the American schools.

To this general rule there is one conspicuous exception, the Museo Barracco, in Rome. It is largely conventional in idea, and professedly antiquarian in the inspiration of its detail. Yet since it has provided the occasion for an elaborate essay in polychromatic decoration, it is sufficiently remarkable to merit very careful consideration. Certain monumental buildings in modern Athens afford parallel instances of the application of a complex system of polychromy, but their treatment is different, though expressive of a similar mental attitude.

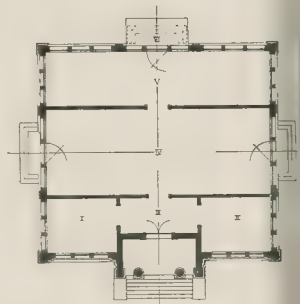
An explanation of the character of the Museo Barracco may be gained from the circumstances under which it was designed. About ten years ago the architect, Signor Alex. Koch, was commissioned to prepare designs for a small private museum of sculpture. His client was the famous Roman connoisseur, Senator Baron Giovanni Barracco. To the latter's influence, rather than to the architect's natural inclination, is due the attempt at literal reproduction of Attic detail in many parts of the work.

In 1904 the erection of the Museum was begun, and in the following year the finished work, with the admirable collection of sculpture it was intended to contain, was presented to the City of Rome by Baron Barracco. The site upon which the building stands is an island area facing the Corso Emanuele, near the Ponte S. Angelo—an area large enough

to permit of a surround of shrubs on north, south, and east sides; a low wall serves as the continuous pedestal to an ornamental iron railing encloses the garden. The isolated, and with the dull plaster fronts the neighbouring houses acting as a simple foil, the effective brilliancy of the design immeasurably assisted.

Its construction is deceptive, even on close examination. On the street façade capitals, bases, and shafts of the columns, pilasters, the podium and steps and the wall up to the fretted band are of white stone. The band itself, the window piers, and the entablature are of plaster. Under the pilaster, the cornice, and architrave to the entrance are stone, and the spaces above the fret on either side of the door head have plaster infilling, the entire side and the elevations (the latter marred by a recent addition) are of plaster, the steps alone being stone. All the doors are constructed in wood stained a bronze green, and heavily studded. Frosted glass in gilded metal frames is used for the windows.

To some extent mistakes in composition are cloaked by the brilliant colouring of the whole. In bright sunshine every detail has a rich vivid value that combines to produce a general impression of sumptuousness, and to deaden intellectual realisation of the



Plan of the Museo Barracco, Rome.

- | | |
|--------------------|---|
| I. Curator's Room. | IV & V. Permanent Exhibition Galleries. |
| II. Store. | VI. Store Extension. |
| III. Vestibule. | |

quality of the architecture. The disposition of the main Order itself in relation to the wall surface on either side of the portico is ill-considered, for the vertical lines of the pilasters produce spaces that are awkwardly proportioned; and, in addition, the entablature is made to appear to be insufficiently supported over the spaces thus formed. With this error in judgment is penetrated blunder in the elementary principles of composition. At the junctions of the portico and main face of the building all respond to the end pilasters is omitted. The recessed pilaster alone is echoed in each case, and the full-angle pilasters of the portico are intended to be read at the same time, both as responds and as integral parts of a complete feature. If mistakes of such a nature are fairly frequent in English Renaissance work—Inigo Jones and Wren having sanctified them by repeated commission—they cannot be charged with impunity in a style that demands absolute clarity of thought. Again, the purpose of the window piers is clumsily achieved through either ignorance or disregard of logical practice. From Schinkel to Alexandre Thomson the great masters of the Revival realised in their executed work the possible solutions of the aesthetic problem that here occurs. Subsidiary Ionic piers coming directly below an entablature proportioned to an Order considerably larger in scale than that of the piers themselves they found only to be practicable in the form of three-quarter, half or quarter piers in combination with the column of the Order, i.e., in the manner employed in the case of the end piers in the work under consideration. To justify their standing free and still retaining Ionic slenderness of proportion a subsidiary entablature with repressed cornice and designed in relation to their own height, must be introduced

* For correction of certain notes I am indebted to Mr. Ernest Gee, who made a careful study of the building in the winter of 1910 as Travelling Scholar of the Liverpool University School of Architecture.—L. B. B.

rectly below the main entablature. Indiscretion in detail could be multiplied, but to little profit.

It is as an exercise in colour that the sign is intended to be accepted, and as such one can it be most relevantly criticised. I have already remarked that in the convention of the colouring the work is reminiscent of several modern performances in Athens—in ritual Hansen's Academy; but the contention is bolder, harder, and certainly less weak. A broad effect is obtained from the imitation of certain main tones—the light of the tile roof, the blue of the tympanum and of the frieze to the main entablature, the dark red of the lower portion of a window piers, the bronze-green of the cornices, and the glistening white of the main architrave, columns and pilasters, walls, and steps. With these as the determining factors in the arrangement subordinate colour themes are elaborated for every minor part. Practically every member treated in some manner, though the range of pigments is very restricted—primary red, blue, bronze-green, gilt, yellow ochre, and terra-cotta.

The main entablature and acroteria—both parently influenced in their design by the Hellenistic work till recently contained the Pergamon Museum in Berlin—are given Ionian brilliancy by the lavish application of unrelated colours, under which the rather resolute character of the decorative adjuncts of the delicate profiling of the members of the cornices are alike obscured. Palmettes, egg, yellow, and red, composed with leaves of scrolls, on a variegated background of blue and yellow ochre, form, however, a composition unprecedented even in Pergamene acroteria; whilst the polychromy of the cornice is extraordinarily fresh. Fillets of white and gilt; a cyma, patterned into alternately-burning spaces of yellow and blue by white thomson (tooled to appear like carved stone), and punctuated with yellow lions' heads; and anti-rolls, terra-cotta, yellow, and red; the fascia; egg and dart moulds of blue, terra-cotta, and white; painted yellow water-veins under the soffit; and on the soffit, flat slightly sunk, a yellow-ochre fret on a white ground; finally, white dentils picked out by vermilion interspaces.

In definite contrast to this minute and intricately-conceived system comes a frieze of blue, broken only over the portico by an inscription panel—white with terra-cotta lettering. Between the frieze and an equally simple architrave of three white fasciae are nine mouldings treated in the elaborate manner of the cornices, white and gilt fillets, terra-cotta bead mould, and a small cyma-versa, on which is painted yellow and blue leaf ornament.

The rich complexity of the cornice is again noted in the capitals to the columns and pilasters. On the abaci the egg and dart motif is marked out in yellow and terra-cotta; a white ground; green is used for the fillets of the volutes, and red for the eyes, the annals being left white; blue and yellow is applied to the egg and dart above the necking, from which the latter is separated by a white bead-mould (that develops into a red and white bead and reel beyond the cushion); white anthemion on a yellow ground comprises the treatment of the necking. Thin terra-cotta lines emphasise the arries of the white columns and of the fluted faces of the pilasters. (On the unfluted faces of the latter the lines recur simply as a pattern.) Red pigment similarly distinguishes the 4-in. by 1-in. jointing of the ashlar walls of the side and rear plaster walls.

In various combinations and rearrangements the colours and painted motives already described enrich the bases of the columns and pilasters, the side-door cornices, the caps and soss of the window piers, and the fretted pil on which the piers stand. The climax reached in the treatment of the interior of the portico, which may be regarded as the *œuvre de résistance* of this whole effort in polychromatic art. A film of rich colour—gilt interwoven with blues, reds, and yellows—covers the architrave and rosettes, the cornices, and cornice of the main entrance, whilst upon either side of the door-head and above the fret level are paintings on a brown frieze, conceived and executed in the manner of the Attic vase scenes of the Vth century. Archaeological though the inspiration of the polychromy undoubtedly is, and insufficient

though the scholarship necessary for its realisation may have been, the experiment attempted is by no means valueless. If it is unreliable as an example of ancient practice, it contributes something definite to the science of modern architecture and something that could only have been obtained by material illustration. It assists towards an estimate of the possibilities of development of a whole system of colour decoration.

Close examination of the architectural detail reveals a mistaken application of many forms, and in the plaster portion of the work a coarseness in surface texture and in the articulation of members that is directly opposed to the treatment demanded by the material. Now, as the work very clearly shows, the crudity of minor indiscretions is almost completely destroyed by a veneer of pigment. It is lost in the paraded ingenuity of intricate colour themes. The main entrance affords an instance—one of many. A reproduction of the doorway under the north porch of the Erechtheion, the transposition is so faithful that even the late Byzantine door-jambes are repeated—being apparently accepted in all sincerity as part of the original design. Yet under its polychromatic cloak the blunder is not readily recognised.

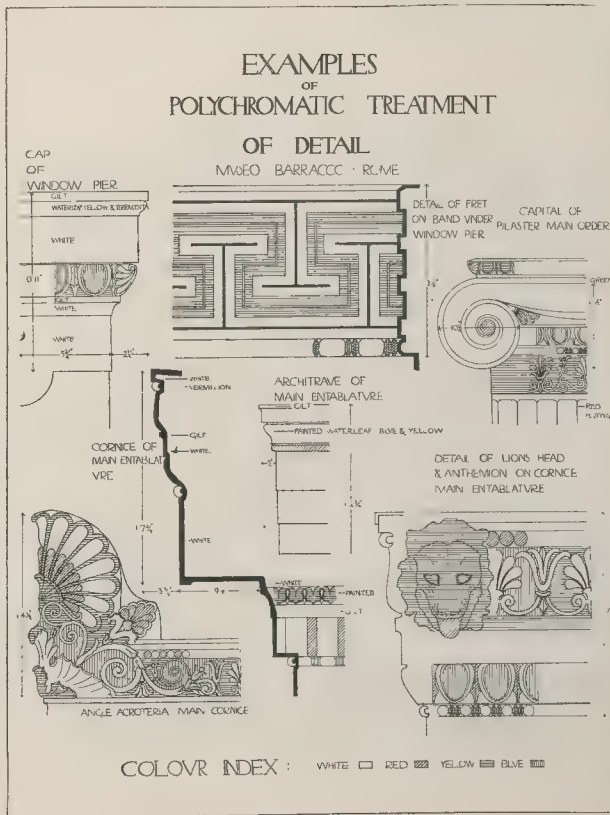
But where as impurity of form on a small scale is rendered less obvious and offensive by the studied employment of colour, precisely the converse is true in the case of larger features. Thus the unfortunate window piers are given an extravagant emphasis by a colour treatment no harsher than that adopted throughout for the detail of the building.

A real danger lies in the possible tendency the adoption of such a process of enrichment may have to subordinate the instinct for absolute form and its arrangement to the pursuit of colour effect, and so destroy the most vital and essential quality of architectural expression. To the genius of the Vth century, Athenian architects, backed by artisans whose sense of mass and line was as certain and as subtle as their own, and who

had inherited and perfected an incomparable technique, the polychromatic ornamentation of structures presented no perils. It was a process contributing only to the beauty of the architecture. Few colours were employed, but through a fine adjustment of tone and contrast the most splendid and brilliant results were obtained. Under modern conditions the attainment of such a level is practically impossible. Even in architects of distinction the requisite mental faculty is rare enough, and the technical tradition, equally necessary, has been dead nearly two thousand years. A Hansen or an Alexander Thomson many from time to time make a courageous effort to revive the beauties of the art, but their success is individual, and leads to the formation of no real school. Their imitators in general achieve little else than a vicious gaudiness or an æsthetic negativity, and in neither is the force or delicacy of the architecture assisted. Attention is merely diverted from the structural composition to the arrangement of the colour and its relative values and total effect. The degradation of architecture as a frame for sculpture is not more complete than in its use as a canvas for the distribution of colour.

In North Europe the possibilities of development in the polychromatic treatment of design are by the exigencies of climate confined to interior work. Even in small external details this rule is valid. (The splashes of gilt and red which distinguish the capitals of the Ionic colonnade to Schinkel's Altes Museum in Berlin, though intended to echo the mosaics on the inner wall, serve rather to create an impertinent interruption in the dark austerity of the building, on whose larger surfaces the weather will not permit the application of colour.) Excluding the use of ceramic tiles and the actual difference in the hues of the materials, architecture must be with us monochrome.

Both of what we gain and of what we lose by the restriction the Museo Barracco may be fairly regarded as an indicative example.



ARCHITECTURAL SOCIETIES.

Royal Institute of the Architects of Ireland.

An ordinary meeting of the Council of the above body was held on the 4th inst., at 31, South Frederick-street, Dublin. Mr. W. Kaye-Parry, F.R.I.B.A., was in the chair, and there were also present:—Messrs. F. Hayes, H. Allberry, A. G. C. Millar, F. G. Hicks, G. P. Sheridan, Lucius O'Callaghan, G. C. Ashlin, and C. A. Owen, Hon. Secretary.

The minutes of the ordinary meeting of June 12 and of the special meeting of July 26 were read and signed, and a large amount of correspondence dealt with, including applications for admission to studentship. A report from the Professional Practice Committee in reference to a proposed revision of the schedule of charges was approved and adopted. A vote of condolence with the family of the late Mr. W. H. Hill, of Cork, was passed.

COMPETITION NEWS.

Railway Staircase at Marseilles.

A competition, limited to architects practising in Marseilles, has taken place with the object of obtaining a design for a monumental staircase giving access to the Saint-Charles Station at Marseilles. The first premium of 120l. has been awarded to MM. Eugène Sénès and Léon Arnal, whose design, remarkable for its simplicity, is a flight of steps continuing in a straight line the Boulevard d'Athènes. At the sides of the imposing staircase are lions, bronze candelabra, and groups symbolical of the commerce of the city; and the whole conception is dignified and effective. The second prize, 60l., went to MM. André Ramasso and Edouard Rambert, and M. Etienne Bentz received the remaining 20l.

Proposed Statue in Havana.

H.M. Legation at Havana report that a competition has been opened by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by

sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaría de Instrucción Pública y Bellas Artes," Havana, before January 20, 1912. The sum of 100,000 pesos (about 20,600l.) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C., where also further particulars (in Spanish) may be seen.

GENERAL NEWS.

Official Delegates to the Architectural Congress.

The following Official Delegates are attending the International Congress of Architects at Rome next month:—H.M. Government will be represented by Sir Henry Tanner, I.S.O., C.B., F.R.I.B.A., of H.M. Office of Works; the London County Council by Mr. W. Edward Riley, F.R.I.B.A., A.M.Inst.C.E., R.B.A., Superintending Architect, London County Council; the R.I.B.A. by Mr. Leonard Stokes, President, R.I.B.A.; Mr. John W. Simpson, Vice-President, R.I.B.A., Secrétaire Comité Permanent International des Architectes; Mr. John Belcher, R.A., F.R.I.B.A., Vice-President of the Comité Permanent International des Architectes; and Mr. John J. Burnet, LL.D., A.R.S.A., F.R.I.B.A. The Liverpool Architectural Society is sending Mr. Arnold Thornely, F.R.I.B.A., the President of the Society; the Devon and Exeter Architectural Society, Mr. James Jerman, F.R.I.B.A., the President of this Society; the Dundee Institute of Architects, Mr. W. Fleming Wilkie, F.R.I.B.A., President of the Dundee Institute; the Manchester Society of Architects, Mr. Percy S. Worthington, F.R.I.B.A.; and the British Fire Prevention Committee, Mr. Edwin O. Sachs, F.R.I.B.A., Chairman of the Committee.

Science Museum.

Mr. Francis Grant Ogilvie, C.B., LL.D., Secretary for the Science Museum and Geological Survey and Museum, has been

appointed Director of the Science Museum. Mr. Ogilvie graduated as B.Sc., Edinburgh, he was Director of the Edinburgh Museum of Science and Art, 1900-3, and Prior Assistant Secretary, Board of Education, 1903-10.

Ordnance Survey.

Lieut.-Colonel C. F. Close, C.M.G., has been appointed Director-General of Ordnance Survey in succession to Col. S. C. N. Grant, C.M.G., R.E.

Huddersfield Memorials to King Edward VII.

Mr. P. Bryant Baker is at work on a bronze statue of King Edward, which will be erected in Huddersfield. The late King will be represented in his Garter robes, and will be emblematic bronze tablets. A from the statue, a sum of 24,000l. has been subscribed to endow a wing in the Huddersfield Infirmary.

King Edward VII. Memorial, Newmarket.

Sir Ernest Cassel has acquired and has presented to the Newmarket Urban District Council, the Grafton House property in H and Fitzroy streets. The property, extending over 2½ acres, belonged to the late King and will be preserved as an open space dedicated to his memory.

British Museum: Report for 1910.

In his annual report upon the general progress at the Museum, in Bloomsbury, Mr. Kenyon states that the total number of visits in 1910 was 739,837, as compared with 708,836 in 1909, and the number of visits to the Reading Room was 219,274, an increase of 1,500 and the third highest recorded, the daily average being 726. The report refers to the purchase of a large collection of the late Sir Francis S. Haden's engravings, and of the Wegener collection of ancient Chinese paintings, to the Salting bequest of prints and drawings, and to the acquisition of the stone sarcophagus of Qem-Pu, 200 B.C., from Memphis, decorated, both within and without, with figures of the gods of the dead and scenes and texts of the Am-Tuat, or guide to the after world. The number of visits made by the public to the Natural History Museum was 515,562, a decrease of 19,554 as compared with the preceding year.

A Proposed New Art Gallery for London.

Negotiations are in progress for the purchase of premises in Old Bond-street as a gallery for the exhibition of works by members of the junior art clubs and societies. The premises stand on the east side of the street, and comprise what in the early years of last century was known as the Western Exchange; there is a rare coloured print of the spacious showrooms in the (old) Garden Collection.

The London Museum.

Mr. J. Seymour Lucas, R.A., has been known for many years as a collector of ancient costumes, many of which have been introduced from time to time into the roman pictures of this popular artist. Mr. Lucas has been persuaded to sell his collection to the London Museum, where they will be set to advantage in a few months' time.

A Patents Exhibition.

Steps are being taken for the establishment in London of a permanent exhibition of current patents, to which the public will have free access, and where they will be conducted through the different sections by experienced demonstrators and salesmen.

Carnegie Libraries for Manchester.

The Free Libraries Committee of Manchester have recommended the City Council to accept an offer made by Mr. Andrew Carnegie to provide 15,000l. for the purpose of erecting branch libraries in the suburbs of the city. If the report is adopted, it is probable that sites will be chosen in Withington, Chorlton-cum-Hardy, and Didsbury.

St. Andrews University.

At the forthcoming celebration of the 500th anniversary of the foundation of the University, the Senatus Academicus will confer the honorary degree of LL.D. upon Lord Balcarras, M.P., Sir George Frampton, R.A., Dr. Kenyon, Director and Principal Librarian, British Museum; Colonel Praeger, F.R.S., Director, Kew Gardens; Dr.



Chimneypiece in the Great Hall, Charterhouse.

From Mr. Godfrey's "A History of Architecture in London." (Mr. B. T. Batsford.)

Director, H.M. Geological Survey; Mr. Watts, F.R.S., Professor of Geology, Imperial College of Science; and Dr. Woodward, F.R.S., Keeper, Geological Department, British Museum.

The Trades' Training Schools.

The classes of the Trades' Training Schools, 3, Great Titchfield-street will reopen on September 11. Full particulars may be obtained from Mr. H. Phillips Fletcher, R.I.B.A., the Director. The Schools, which are under the jurisdiction of the Craftsmen's Companies of Carpenters, Joiners, Inter-Stainers, Plasterers, Tylers and Bricklayers, and Wheelwrights, provide instruction for those engaged in the various trades; the advantages of obtaining skilled tuition at minimal fees should induce every apprentice and workman to join the class for which he is eligible.

Westminster Abbey.

The work of restoring Westminster Abbey to its normal appearance has been completed. The Office of Works. Electric lighting, which was installed for the Coronation, is now in use.

Architects' Institute of the United Kingdom.
By invitation of the Hants, Wilts, and Dorset Branch, the annual country meeting of the Institute will be held on September 14-5 at Portsmouth, under the presidency of Mr. John Marks, of Messrs. Orgill, Marks, & Son. The Council will hold their autumn meeting on September 14 in the Town Hall; on the following two days visits will be paid to Winchester, Southampton, and the Isle of Wight.

Timber Cottages.

The Local Government Board has notified the Billericay Rural District Council that it will be prepared to consider proposals that timber-built cottages should be built for the use of workmen. It appears that there is some overcrowding in the district, the cause being, according to a local Councillor, the coming of so many London pensioners and tradesmen.

The Bridge Collection.

Mrs. E. E. Bridge, of Manor House, Piddletrenthide, Dorsetshire, is about to dispose of a collection of relics and works of art, owned by J. Bridge and J. Gawler Bridge, partners of the firm of Rundell & Bridge, of No. 32, Ludgate-hill, crown jewellers and gold-

smiths to George III. and his three successors on the throne. The collection includes some old silver and Sheffield plate, furniture, miniatures, and paintings, statuettes, models, and bronzes by Nollekens, Bailey, Canova, and Flaxman, and what are described as being the wrought-iron railings and scroll lamp-bracket from the former tomb in the choir, Peterborough Cathedral, of Mary, Queen of Scots, and another from the tomb (by Torrigiano, in Westminster Abbey) of the Lady Margaret, Countess of Richmond and Derby, mother of King Henry VII.

French Architecture Abroad.

Since the International Congress at Antwerp French architects have received numerous commissions from foreign places, notably from the American Republics. French professors seem to be in demand, too, in the West, and their presence there is likely to ensure further business relations between the countries. Is it possible that, by the judicious adaptation of British ideas to the requirements elsewhere, our own architects may secure some of the work of the future?

CORRESPONDENCE.

The Road Board.

SIR,—I notice in the last issue of the *Builder* a paragraph re the work of the Road Board. As a matter of fact, the Road Board are doing a great deal of very useful work in a very quiet manner, and their means, or rather the means at their disposal, are, as you say, very limited.

There are two aspects of the contribution question. The local authorities have initially the onus of maintaining their own roads, and the Road Board would be wrong in taking this responsibility off their hands, even in individual cases. It would almost become a competition who could make their roads the worst and show the greatest need for assistance. As the applications for assistance exceed the funds of the Board by about six to one, under the circumstances the policy of helping those who help themselves is a sound one. One advantage of the contribution system is that it ensures, at the least possible cost to the Board, their advice in the matter of roadmaking being listened to—a most important matter. The Board have under their personal observation almost every experimental section of road in the kingdom, and it

is becoming evident that the old methods of roadmaking (and maintenance also) were so extravagant that in a few years the annual saving from the improvements effected by the spreading of better information and the experimentally-established improved methods will represent so great a sum as to constitute in itself a potential fund by which the other more obviously-needed improvements can be carried out. It is a fact that an ordinary country road can be surfaced with macadam at about 1s. 4d. per square yard, with an extra 4d. a yard for tarring, total 1s. 8d., as against such figures as 2s. 4d. to 4s. often expended under identical conditions with no better results.

The position of the Road Board is that of a consultant called in to manage a badly-managed business; his first job is to cut down all extravagant and useless expenditure and add the savings so effected to his other resources for the ultimate improvement of the position. It is obviously bad management to spend money in building and maintaining new roads and extensions before the best method of road building and maintenance has been settled.

I believe that it is now ascertained that a road suitably built and with a waterproof surface, i.e., tarred, is, so far as rubber-tyred traffic (and nearly all motor traffic is rubber-tyred) almost a permanent job. I have heard that forty or fifty years is its estimated life. It is the horse vehicles and iron-tyred vehicles, including traction engines, that knock such a road to pieces, but even under average conditions the durability of roads under the aegis of the Road Board is being enormously increased.

With the colossal sums to be saved by proper construction being annually lost—irretrievably lost—it seems to me that there is no question as to the wisdom of the present line of action, and I think it is deplorable that the Press should take the superficial view they do as to the field for the activity of the Road Board.

F. W. L.

BOOKS.

A History of Architecture in London. By WALTER H. GODFREY. With 250 illustrations, maps, and lists of buildings. (B. T. Batsford. 7s. 6d.)

SINCE the time of Stow books on London have multiplied so rapidly that the fountain



Interior, The Orangery, Kensington Palace.



Vestry, St. Lawrence Jewry.

(From Mr. Godfrey's "A History of Architecture in London" (Mr. B. T. Batsford).)

of knowledge on the subject would have run dry but for the fact that something new can be said always about the past of a great city. During the centuries which have elapsed since the first encampment on the banks of the Thames the British race has shared enormously in the progress of the world, and while much has been given in the way of enterprise, much of artistic importance has been derived from other countries. The capital city of the Empire reflects, of course, changes in thought and the application of ideas; so the London of to-day may be likened to a vast museum containing evidence of almost every variety of artistic influence. In one decade there will be brought to light some early British or Roman remains which will alter or confirm the opinions of archaeologists; in another decade will arise such a building as the Byzantine Cathedral at Westminster to bring to Londoners the possibilities of an hitherto unrepresented style of architecture.

Such things would only appeal to the limited few if it were not for the guidance of those who devote time and energy to the task of explanation. London has been fortunate in its interpreters, and whether we read the whole-hearted phrases of Johnson, the incidental eulogies of Lamb, the systematic analyses of Besant, or inspired dissertations by such brilliant essayists as Mr. Henry James and Mr. Austin Dobson, we are conscious of the exceptional attractiveness which London possesses. If, however, we wish to penetrate intelligently into the architectural history of the Metropolis we may be pardoned if we choose as cicerone not a man of letters, but an architect well versed in the material side of the subject.

Mr. Godfrey has brought knowledge and

enthusiasm to his work, and he has diligently set down the very facts required by those who would learn or recapitulate. Wisely, he introduces his chapters with a glance at the remains of Grecian and Roman buildings, for "within a radius of a few miles of Bloomsbury lie enough examples of the work of past ages to afford a glimpse into the continuous history of architecture from 500 B.C. to A.D. 1900." and the general reader must be given an insight into the essentials of Classic architecture. The British Museum and South Kensington are rich in relics not only of Old London, such as the front of Sir Paul Pindar's house, once in Bishopsgate, and the panelled room from Clifford's Inn, but contain objects of extreme value and interest of other countries, of ancient days. Some early historical notes, therefore, are of importance in the story of London's architecture.

Norman architecture in London, illustrated by the Keep of the Tower and by the Temple Church, is the real beginning of the book, and from that period to the XIXth century Mr. Godfrey is the able guide who introduces us to the things we might pass by, perhaps, in ignorance—a hooded doorway here, a fine staircase there, each with its message of design, brings forward the richness of London in the details of architecture.

The book is addressed partly to a popular audience, and it fulfils its purpose admirably. There are occasional notes on construction, however, which will be of service to architects.

Mr. Godfrey has not hesitated to go outside the radius of London for illustrations. For instance, he includes Hampton Court, Waltham Cross, and Eltham Palace. Generally, however, the examples chosen are all within easy reach of the pedestrian, and no more profitable hours could be spent than

those devoted to the examination of buildings and decorations referred to by the author.

BOOK RECEIVED.

THE CATHEDRALS OF CENTRAL ITALY.
T. Francis Bumpus. With 51 illustrations.
(London: T. Werner Laurie. 16s. net.)

FIFTY YEARS AGO.

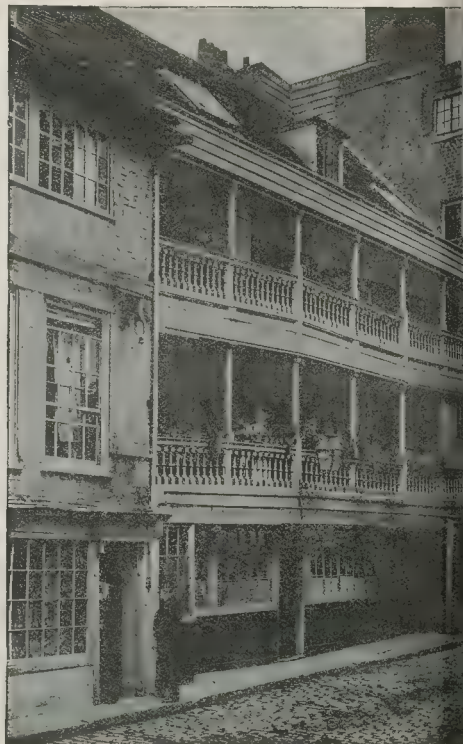
From the *Builder* of September 7, 1861.

St. Mary Redcliffe, Bristol.

THE restoration of this noble church proceeds steadily and satisfactorily, though slowly, and more show is now made by comparatively small expenditure than was first the case. Amongst those who have interested themselves in distinct portions of the work, the Freemasons of the city of Bristol had undertaken the restoration of the north-east corner of the Lady Chapel, on the 28th ult. a grand assemblage of brethren took place on the occasion of laying the last stone of the part completed by them. They met, to the number of 500, in Exchange (Wood's fine building), marched thence in full dress, with band and music, to the church, where a choral service was performed and a sermon preached by the Rev. Brother Watkinson, Provincial Grand Chaplain, the church being crowded. The procession was then reformed and proceeded to the outside of the east end of the church, where the stone was laid by Masonic ceremony.



Friends' House, Croydon: Entrance Doorway.



The George Inn, Southwark.

From Mr. Godfrey's "A History of Architecture in London." (Mr. B. T. Batsford.)

EDITORIAL SUMMARY.

The suggestions drawn up by the Royal Institute of British Architects as a result of the Town Planning Conference last year form the subject of the leading article: "Civics and the Architect."

In the following article (p. 264) reference is made to the Blue Book recently issued on the Census of Production" (1907).

Notes (p. 265) include: "Architecture for the Masses"; "The Natural History and New Science Museums"; "St. George's Barracks"; "Rural Housing."

In his fifth article on "The Story of the Bridge" (p. 265) Mr. Shaw Sparrow traces the evolution of the timber bridge. Examples of constructive carpentry, in which mechanics and fine art were allied, are described.

Mr. Budden gives the history of "The Museo Barracco, Rome" (p. 268), an interesting modern example of polychromatic decoration in architecture.

Under Correspondence (p. 271) will be found letter on the work of the Road Board.

Mr. Godfrey's book on "A History of Architecture in London" is reviewed on p. 271.

Details of the Stockport Police Courts Competition appear on p. 273, and other competition news is given on p. 270.

The Monthly Review of Construction opens with a note on the "Second Report of the Joint Committee on Reinforced Concrete" (p. 275), this is followed by "Some Continental Ideas of Slating" (p. 276), and Notes.

In the Building Trade Section (p. 281) are notes on "Recent Workmen's Compensation Cases," "Increment Value," "Concrete Plant for Cold Weather," "Changes in Rates of Wages," "An Indian Mortar Mill," "Labour Disputes," and General Building News.

On p. 284 are illustrations of new buildings in connexion with the Hackney Union Infirmary, and an article on "The Royal Commission on Sewage Disposal."

MEETINGS.

FRIDAY, SEPTEMBER 8.

Institution of Municipal Engineers at Leam. - Victoria, 15, London Bridge, 9.30. Phoenix Ironworks, 11.0. At 10 leave for Salford, where Air Compressing Station, Erectors, and Refuse Destructor House, under construction, will be shown.

MONDAY, SEPTEMBER 11.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London Wall). - Paper by Mr. C. S. Willis on "Hampson Court: Its Architecture and Associations." 8 p.m.

STOCKPORT POLICE COURTS COMPETITION.

THE result of this competition and the assessor's report were given in our issue of August 25, p. 216.

Professor Reilly adjudicated on the eighteen designs submitted by invited architects from all parts of the country, and the premiums were awarded as follows:—

First—Messrs. J. Theo. Halliday and Claude Paterson, A.A.R.I.B.A., of Stockport and Manchester.

Second—Messrs. Appleyard & Quiggin, of Liverpool.

Third—Messrs. Stott & Son, of Stockport and Manchester.

The competition differs in many respects from the ordinary, and reflects indications of much-needed improvements. We welcome, in the first place, a successful design which is based on monumental academic principles. Let us hope that the latent yearning for a more noble civic architecture which has for some time been making itself felt is at length going to bear fruit. Our large buildings have been too long the object of ridicule of American and Continental architects. We need an architecture that is permanent and lasting and Classic, in the true sense of the word, not a mere fashion of the moment that relies on meretricious tricks of draughtsmanship rather than breadth of conception and purity of detail. We have had enough of this paper stuff, enough of these short cuts to notoriety. The younger generation is surfeited with these pseudo-classic forms and ephemeral mannerisms.

There is no denying the influence of the Liverpool School of Architecture in this competition, particularly in the case of the first two designs, while many of the competitors have undoubtedly had its Sketch-Book in their hands. The part that the School has taken in the growth of monumental architecture in this country is too well known to need further comment.

Another new starting-point is a change in draughtsmanship. Instead of the coarse, thick line and blackened windows of recent years, it is gratifying to find a set of drawings of such refined and delicate rendering as that of Messrs. Halliday & Paterson. The elevations and sections are drawn in pencil and shaded. This, in fact, seems the only reasonable way in which to portray monumental architecture, and should, in competitions of this style, become more general.

It is satisfactory for once to find that the winning design is so pre-eminently the best that it leaves no loopholes for the assaults of discontented competitors, and both the assessor and successful authors will be spared the abuse which has been so sadly characteristic of recent competitions.

The problem was one of such complexity that only a small number of the competitors can be said to have arrived at a thoroughly satisfactory conclusion. A site of ample area has a frontage to Wellington-street, but the whole of the rear portion is at a depth of

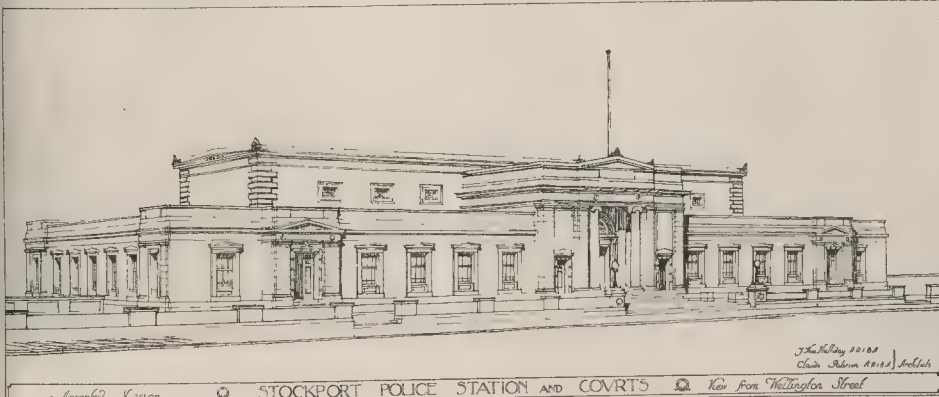
25 ft. below the street level. Only a few of the competitors took full advantage of the architectural possibilities this afforded.

The winning plan is simple, straightforward, and workable. It was unfortunate that the conditions necessitated that the two main courts should vary in size, but, in spite of this, the plan is well balanced. Flanking the spacious entrance-hall are, on the one hand, the rooms for barristers and solicitors, and, on the other, those for witnesses. In one wing is a fine range of rooms for magistrates and jury, with a separate entrance, and in the other the police offices. The children's court is on the upper floor, while the cells are particularly well arranged at the lower level. The back elevation, of which a splendid view will be obtained, is unquestionably the most distinguished feature of the design. At the lower level is the police parade-room, a charming composition of five arches, with window infillings after the Adam manner, and a strongly rusticated central door. Behind this piles up the great central mass, with its fine wall surfaces and the bold line of the crowning cornice. The front elevation is, necessarily, owing to its lesser height, not quite so imposing though quiet and dignified. The central portico is flanked by lower wings, stretching out to the extreme ends, and behind the whole rises up the main mass, containing the courts. The central portico might be distinctly improved, and is the weakest part of the design. The pediment placed on a low attic is rather meaningless, and Doric columns might, considering the purpose of the building, be well substituted for the slender Ionic.

It is surprising that there is no echo in any of the designs of Old Newgate, that supreme example of architectural fitness, the grim, forbidding aspect of its walls having been termed one of the strongest deterrents to crime.

The designs placed second and third were, in comparison with the first, distinctly disappointing, particularly as regards the plans. Messrs. Appleyard & Quiggin's main front had quite a strong monumental feeling, but the 2-in. detail was immature, and did not do full justice to the ideas embodied in the small-scale elevation. The design of Messrs. Stott & Son had an ingenious arrangement at the main entrance, whereby two flights of steps led up to the courts and a central flight down to the charge-room. This would involve a somewhat promiscuous mixing of the various elements of society! The 1/2-in. detail was one of the best drawings in the room, being delicately rendered with pencil and wash.

The names were not attached to the other sets of drawings, so that we can only conjecture as to their authors. Two designs we judged those of Mr. S. B. Russell, and Mr. T. E. Cooper, and we fail to understand why one of these did not receive one of the premiums. The principal defects of an otherwise excellent plan were the extreme meanness of the main entrance, and the fact that some of the cells overlooked the parade-ground. The front elevation was not happy in its proportion, and was rather coarsely drawn, but



Accepted Design

STOCKPORT POLICE STATION AND COURTS

Kar for Wellington Street

the back took good advantage of the possibilities of the site. One design had a scholarly and dignified Doric front, charmingly portrayed, but it was unfortunately marred by a somewhat quixotic magnification of the ventilating flue into a huge shaft (shall we say tower?), which we fail to reconcile with the quiet Greek façade below it.

The main point is that the right scheme has won, and that it will raise the level of architecture in Stockport, and promises to be, in our opinion, the most noteworthy modern building in a town which has promoted quite a large amount of architectural energy of recent years, and we venture to congratulate the Corporation on having secured an unusually fine design.

ILLUSTRATIONS.

Edington Church, Wilts.

THIS church, dedicated to SS. Mary, Katherine, and All Saints, was connected with a small monastery of the Bonhommes, founded by William of Edington, who preceded William of Wykeham in the Bishopric of Winchester. It was commenced in 1532, and completed in nine years with the exception of the south porch, which was added a century later.

The church is cruciform in plan with a low central tower, and, in common with most monastic churches, a large chancel, which is more elaborate internally and externally than the rest of the church. The church is built of Bath stone, and contains fragments of XIVth-century glass, three canopied tombs of the XIVth, XVth, and XVIIth century, and a much-restored XVth-century screen. Of the monastery which lay to the north of the church there now remain the Prior's House, gardens, and fish-ponds.

These drawings by Mr. T. F. W. Grant,

A.R.I.B.A., were awarded this year the Measured Drawings Medal and 10*l.* 10*s.* of the Royal Institute of British Architects.

London County Hall.

THE County Hall, with which progress is being slowly but surely made, will attract more attention in the course of next year and thenceforward than it has done up to the present, although the operations of demolishing, excavating, and laying the foundations have not failed to interest passers-by since the work was started. Mr. Ralph Knott hopes that the superstructure will be begun during March, and as the building takes shape day by day citizens and visitors will find something more definite to appreciate or criticise. Meanwhile the river wall presents a formidable appearance. Mr. Leathart's drawing depicts one of the pair of bronze chain supports placed on each of the granite blocks flanking the central projecting portion of the Embankment front. The horses' heads, of which there are four, are slightly varied in design alternately, and have sweeping wings which are skilfully worked to a square measuring 3 ft. 6 in. Mr. Ralph Knott, the architect, is responsible for the design, and Mr. Gilbert Bayes is the sculptor of the supports.

An illustration of the revised design for the County Hall appeared in the *Builder*, September 10, 1910.

The Story of the Bridge.

THE illustrations of Bridges are in connexion with Mr. Shaw Sparrow's fifth article, which begins on p. 265.

King Edward Memorial Hospital, Ealing.

THIS hospital, which was recently opened by H.R.H. Princess Christian, is erected on a site fronting Mattock-lane. The pavilion, which is placed axially north and south, is two stories in height and contains on each floor eighteen beds

and one single-bed ward. The operating theatre adjoins the present and future ward and is connected thereto by a glazed corridor. The administration block fronts Mattock-lane and is three stories in height; the upper floors contain recreation-rooms and bedrooms for matrons, nurses, and servants. To the south of this block is a small casualty ward, a receiving-room, and beyond the kitchen office with boiler-house underneath. The sewer blocks are connected by a covered way, with the exception of the part before mentioned. A small provident dispensary is placed on the western extremity of the site, and behind it a space is reserved for the mortuary.

Provision is made to extend the hospital to accommodate fifty additional patients; this would entail completing the administrative block on three floors to the extent shown in outline on plan. The remaining parts of the hospital are designed on a scale sufficient to meet future requirements.

The building was erected at a cost of 17,000 by Mr. Walter Dickens, builder, Ealing, from the designs of Messrs. Hall-Jones & Cumming. The heating and electric lighting were carried out under the supervision of Messrs. Doll & Williamson.

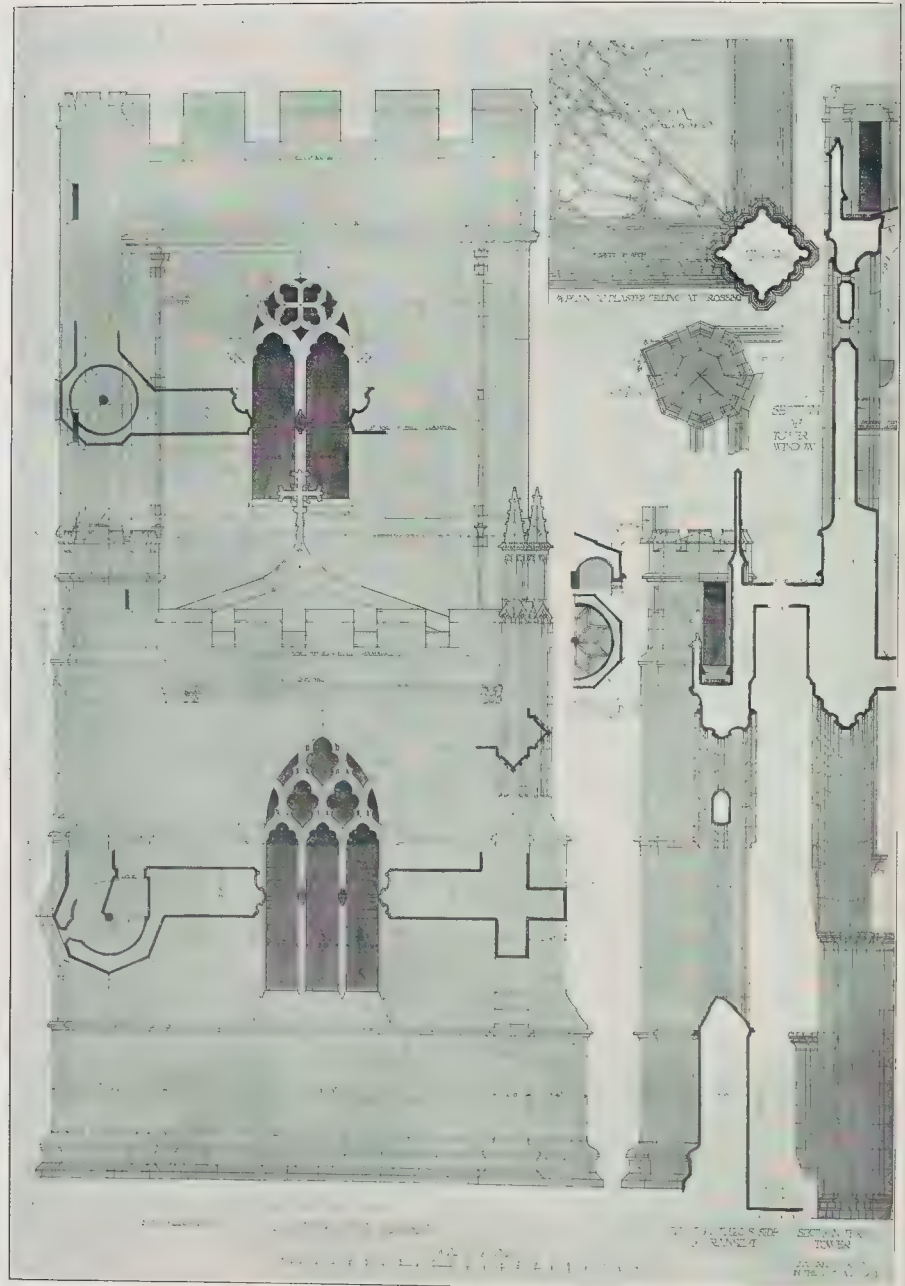
ROAD REPAIRS.

Visitors to London and residents themselves have not failed to note the inconvenience caused by many roads being "up for repairs. Not everyone will give a thought to the cause of the trouble, which is, to a large extent, the unusual summer heat. Local authorities, prompted by their Finance Committees, are well aware of the extra expenses incurred, all of which, however, must be attributed to the effects of the sun in the year. For instance, Gloucester-place, which is costing about 4,000*l.* to repair, has provided for a long time a test for spring-tyres, and human endurance.



King Edward Memorial Hospital, Ealing.

Messrs. F. Hall-Jones & Erskine S. Cummings, A.R.I.B.A., Architects.



Springer & Co., Ltd., Printers, 4 & 5 Fleet Street, E.C.

EDINGTON CHURCH, WILTS.—DRAWN BY MR. T. F. W. GRANT.

R.I.B.A., 1911, Measured Drawings Medal and £10 10s.



Photo by Frith.

BRIDGE OF BOATS AT COLOGNE.



Photo by Frith.

SION BRIDGE AND MOUNT ARDON.

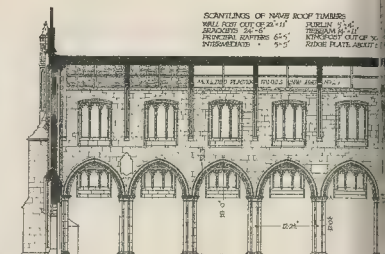
Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

"THE STORY OF THE BRIDGE."—V.

EDINGTON



HALF CROSS SECTION

HALF CROSS SECTION THRO' NAVE
(FOR DETAIL OF THIS SEE DRAWING NO. 2.)

SCANTLINGS OF NAVE ROOF TIMBERS
WALL POST CUT OF 24" x 11" PURLIN 1 1/2" x 4"
BRACKET 15" x 4" BRACKET OF 12" x 4"
FLOOR JOISTS 4 1/2" x 12" ROSE PLATE 6 1/2" x 12"

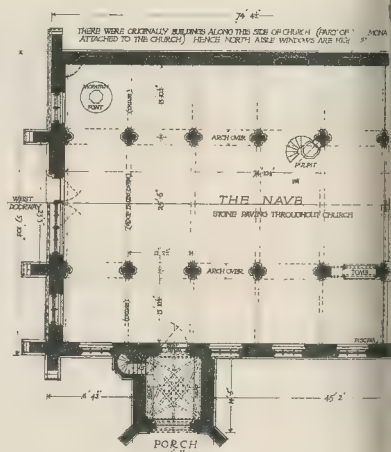
(FOR DETAIL SEE DRAWING NO. 2.)

THIS CHURCH, DEDICATED TO SS. MARY KATHERINE AND ALL SAINTS, WAS BUILT BY WILLIAM OF EDINGTON WHO PREACHED WILLIAM OF WOODHAM IN THE ROSKOPIC OF WINCHESTER. — A MONASTERY OF THE BERNARDINES WAS ATTACHED TO THE CHURCH BUT OF THIS ONLY THE PRIORS HOUSE (NOW A PARISH HOUSE), GARDEN WALLS AND LARGE PERGONDS REMAIN. CHANCEL BUILDINGS WERE ATTACHED TO THE CHURCH. — LATER FOR THE PORCH, ADDED A CENTURY LATER, THE WHOLE CHURCH WAS BUILT BETWEEN 1250 AND 1260. THE PLAYERS DANCE, TO THE DOOR OF NAVE AND NORTH TRANSEPT AND UNDER THE TOWER DATE FROM 1655. — THE ROOF OF BOTH AISLES AND SOUTH TRANSEPT ARE CORNICE. — THE CHANCEL ROOF, NOW A 16TH CENTURY PLASTER CEILING, WAS ORIGINALLY SIMILAR TO THAT OF THE NAVE, THE WALL POSTS RESTING ON THE CORBELS OVER THE NICHS. — THERE IS SOME ORIGINAL STAINED GLASS IN SOME OF THE WINDOWS CHIEFLY IN THE CLERESTORY AND NORTH TRANSEPT. — THE CHURCH WAS REDESIGNED IN 1850 BUT WITH THE EXCEPTION OF A FEW MILLIONS, A SMALL ANGLICAN OF WINE OF TRACERY AND SOME BEING INTRODUCED TO THE CHANCEL, THE ORIGINAL WORK REMAINS.

SCALE OF FEET



THESE DRAWINGS WERE ALL MADE ON THE SPOT, JULY, AUGUST, SEPTEMBER, 1900.



GROUND PLAN



ELEVATION OF NORTH SIDE

R.I.B.A., 1911, Measured Drawings Medal and £10 10s.

EDINGTON CHURCH

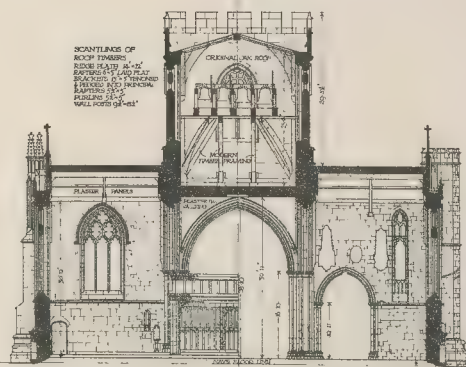
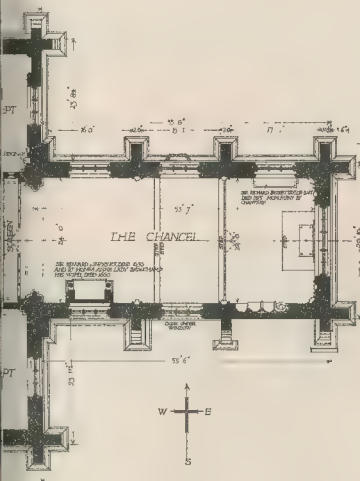
WILTSHIRE:



(FOR DETAIL SEE DRAWING NO. 1)



ELEVATION OF EAST END
(FOR DETAIL SEE DRAWING NO. 1)



HALF SECTION THRO' N. TRANSEPT, HALF SECTION THRO' N. TRANSEPT
(LOOKING EAST) (LOOKING WEST)



ELEVATION OF SOUTH SIDE

PHOTO LITHO. SPRAU, J.E.C. 174, 435, EAST WERE RD. STREET FETTER LANE E.



GENERAL VIEW.



PRINCIPAL ENTRANCE.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

KING EDWARD MEMORIAL HOSPITAL, EALING.—MESSRS. F. HALL-JONES & ERSKINE S. CUMMINGS, A.R.I.B.A., ARCHITECTS.



The NEW LONDON COVNTY HALL.

Bronze chain supports on Embankment front.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

CHAIN SUPPORTS IN BRONZE.—MR. RALPH KNOTT, ARCHITECT; MR. GILBERT BAYES, SCULPTOR.

DRAWN BY MR. J. R. LEATHART.

MONTHLY REVIEW OF CONSTRUCTION.

SECOND REPORT OF THE JOINT COMMITTEE ON REINFORCED CONCRETE.

NCE more the thanks of engineers, architects, and others making employment of reinforced concrete are to the Joint Committee organised by the Royal Institute of British Architects. Putting aside at an early date the prece which most engineers then cherished of reinforced concrete as a structural trial, the Institute were the first scientific in this country to recognise officially obvious claims of that material. Though their first Report, issued in 1907, not free from defects and omissions, it nevertheless possessed the great merit of setting in simple and intelligible form a series of data and rules for the computation of beams and columns which have been of practical value not only to architects, but also to public authorities throughout the United Kingdom, and to many of the firms have taken up reinforced concrete work in the last four or five years.

The second Report* is virtually a revised one of the first document, the chief additions and additions being in the data under the head of "Materials," in the "Methods of Calculation" (for beams), and in the section on "Pillars and Pieces under Thrust." A noteworthy section has been added on "Shear Reinforcement" (beams). We are glad to find that all of the modifications suggested at recent times in our columns have been in the text of the present issue.

As a matter of convenience to readers we have below with the various modifications a new matter *seriatim*, giving page numbers and other references for aiding identification.

In the first place, it may be noted that the constitution of the Joint Committee has been slightly altered by the substitution of Mr. Gibson Fleming for Colonel Mayne Major Paul, representing the War Office, by the inclusion of Messrs. F. Capon E. F. Etchells as representatives of the London County Council, and of Messrs. C. F. H. and W. G. Kirkaldy as representatives of the Concrete Institute, the former of these having previously been an unofficial member of the Committee.

The "Prefatory Note" is virtually identical with the section entitled "Report of the Committee" in the first Report. One of our readers will welcome the alteration of paragraph (e), p. 6, to read:—"In all cases a cover of $\frac{1}{2}$ in. on slabs and on beams is sufficient. It is undesirable to make the covering thicker." The corresponding paragraph in the first Report ended 1 in. on slabs and $1\frac{1}{2}$ in. to 2 in. on beams, a quite unnecessary requirement was not only bad from the practical point, but also inconsistent with the provision, given later in the same document, for the placing of reinforcement not more than $\frac{1}{2}$ in. from the surface of the concrete at any point, nor 1 in. in beams and $\frac{3}{4}$ in. in floor slabs.

Under the head of "Materials" an important addition in the form of a footnote (6) is:—"Coke breeze, pan breeze, boiler ashes ought not to be used for concrete. It is advisable not to use slinker or slag unless the material is freed with great care." These provisions are a welcome recognition of the standard in our columns against the persistent use of the residual products mentioned by writers who relied upon fire-resistance apparently were ignorant of the deleterious influence of coal residues on steel and concrete.

* London: The Royal Institute of British Architects,

of the instability of slag, to say nothing of the injurious elements usually contained in slags.

In Clause (7) occur the somewhat curious recommendations that "the proportions of the cement, sand, and aggregate should be separately specified in volumes" and that "the amount of cement added to the aggregate should be determined on the work by weight," cement being taken at 90 lb. per cubic foot. As weight is to be adopted finally, it would obviously be better to specify it in the first instance instead of asking the contractor to translate a percentage into weight by the aid of a coefficient, which is merely a rough approximation. The weight of Portland cement per cubic foot varies considerably with the specific gravity of the clinker and the fineness of grinding, and all architects and engineers who are wise will adopt the precaution of specifying the weight of cement that is to be added to stated volumes of sand and aggregate, for a given weight means a definite quantity of cement, and a given volume means cement and air in uncertain proportions.

Clause (8) paragraph (b) now states that the yield point of steel used as reinforcement should be "not less than 32,000 lb. per square inch," a provision more satisfactory and more exact than that in the former Report, where the elastic limit of from 50 to 60 per cent. of the ultimate stress was adopted as a criterion.

Paragraph (b) in the same clause is amended by omission of the unpractical and unnecessary "wash of thick Portland cement" previously recommended for the painting of steel bars before use.

Clause (9) now contains the timely advice that "No concrete which has begun to set should be used"—a point of vital importance, as known by all who have had any experience of reworked concrete.

The paragraph referring to hand-mixed concrete is the same as before. It would be improved by qualification to the effect that, as hand-mixing is less efficient than machine-mixing, the proportion of cement should be increased to make the concrete equal to that of material mixed by machine.

A footnote to Clause (10) emphasises the desirability of placing the full thickness of concrete in floor slabs in one operation.

In Clause (13) a very important and welcome alteration is to the effect that the strength of 1:2:4 concrete should not be less than 1,800 lb. per square inch at twenty-eight days, or 2,400 lb. per square inch at ninety days. The suggestion in the first Report that concrete of this relatively inferior composition should attain the compressive strength of 2,400 lb. in twenty-eight days has led to considerable misapprehension among architects and local authorities, which has tended in some measure to discourage the use of superior concrete.

Further attention to data connected with the strength of, and working stresses for, concrete materials are given in the succeeding section of the Report, entitled "Methods of Calculation," with which we will now deal.

In Clause (1) a footnote is added to the effect that the customary reduced estimate of floor loads should not be followed in the case of buildings containing heavy machinery, where the actual loads should be taken in full.

Clause (3), under the sub-heading "Beams," has been entirely rewritten, and is a great improvement on its predecessor. The clause now recommends that the bending moments for beams "must be calculated on ordinary statical principles, and the beams and slabs designed and reinforced to resist these moments." It also provides that where the

maximum bending moments in beams or floor slabs continuous over three or more equal spans and under uniformly distributed loads are not determined by exact calculation, the bending moments should not be taken at less than $+\frac{wl^2}{12}$ at the middle of the span, and $-\frac{wl^2}{12}$ at the intermediate supports.

This is a perfectly explicit statement in every way preferable to the former somewhat ambiguous wording, which was apt to be interpreted either as sanction for the moments $+\frac{wl^2}{24}$ at the middle, and $-\frac{wl^2}{12}$ at the supports, or as sanction for taking $+\frac{wl^2}{12}$ at the middle and $-\frac{wl^2}{24}$ at the supports.

It is now made clear that the value $\frac{wl^2}{12}$ is to apply throughout, but we should prefer the adoption of $\frac{wl^2}{10}$, in accordance with the practice of the best authorities and experts.

A new sentence in paragraph (c), p. 11, on stress distribution in reinforcing bars, points out that:—"In the case of steel of large section it may be necessary to consider the stress as varying across the section." While agreeing with this interpolation, we hope it may not often be needed, for the use of reinforcement in the form of large sections is quite contrary to the canons of reinforced concrete design.

Clause (5), entitled "Working Stresses," includes some welcome emendations. The first is that working stresses tabulated for concrete are on the basis of the crushing strength of 1,800 lb. per square inch at the age of twenty-eight days, instead of 2,400 lb. per square inch at the same age. The second is the abandonment of the unnecessary restriction of the limiting compressive stress in columns to 100 lb. less than that permitted in beams. No satisfactory reason has ever been assigned for the previous limitation, which seems to have been adopted at first by the Committee as a safeguard and in compliance with the recommendations of some American writers. The French Commission make no distinction of the kind. The third is that for steel in tension, with the tenacity of 60,000 lb. per square inch, the working stress is fixed at 16,000 lb. instead of 15,000 lb. to 17,000 lb. The new limit, being exactly half the stress at the yield point, is strictly logical. The fourth is that the compressive stress for steel is fixed at fifteen times the stress in the surrounding concrete, this numerical factor being governed by the value $E_s/E_c = 15$. The fifth is the specification of 12,000 lb. per square inch for the working stress of steel in shear. No recommendation was made in the first Report with regard to compressive and shearing stresses in steel. The sixth is an important improvement, for the working compressive stress in concrete mixed in proportions other than 1:2:4 may now be taken at one-third the crushing strength at the age of twenty-eight days, instead of one-fourth for beams and one-fifth for columns. In the case of steel the allowable tensile stress may be taken at one-half the stress at the yield point, but not exceeding 20,000 lb. per square inch.

The foregoing alterations will give considerably increased scope to designers of reinforced concrete structures, while guarding against the adoption of excessive compressive and shearing stresses in steel, as sometimes taken in the past. There is one point, however, which we are sorry to find has been left unaltered, namely, the limit of 60 lb. per square inch for concrete in shear in beams. Concrete in simple shear is quite capable of withstanding stress up to at least 50 per cent. of its compressive strength. The Joint Committee evidently have in mind, not shearing stress itself, but shearing stress as the measure of

indeterminable tension on diagonal planes in the concrete of beams.

Considering this aspect of the case, we cannot afford to disregard the results of well-authenticated tests which show that for concrete mixed in the proportions of about 1:2:4, the shearing stress of 100 lb. per square inch, or a little more, should be taken as a limit not to be overstepped without the risk of failure by diagonal tension.

Consequently the working stress, regarded as the measure of tension on diagonal planes, should not be more than 25 lb. or 30 lb. per square inch. In Clause (4), paragraph (b), p. 11, the Committee say:—"The resistance of concrete to tension is neglected, and the steel reinforcement is assumed to carry all the tension." Therefore, as the stress now in question is really tension and not shear at all, the resistance of the concrete ought logically to be neglected and steel applied to carry the stress. This is the practice of expert designers, and we should like to see it officially adopted, concurrently with a wider limit for simple shear considered on its own merits.

Turning now to beam equations, we regret to notice that, despite the statement of permissible stress for steel in compression, no formulae are included for the guidance of persons wishing to design beams with reinforcement in compression as well as in tension. Such formulae are clearly demanded for the three classes of beams covered by the series of equations relating to tension reinforcement only. Their omission in the second, as in the first, Report is distinctly unfortunate.

The equations now given in remodelled form on pp. 12 to 14 provide completely for the calculation of T-beams, where the neutral axis falls outside, T-beams where the neutral axis falls within the slab, and rectangular beams, a very convenient feature being the adoption of the standard notation proposed by the Concrete Institute. Another noteworthy improvement is the adoption of a more simple sectional area in the first class of T-beams as the basis for computing the proportionate area of tension reinforcement.

As before, the equations are based on the straight-line theory, and so involve nothing fresh from the theoretical standpoint. The only objection to them is the unnecessarily complicated aspect they present to the eye, and the labour their employment will involve in practical work.

It would be perfectly easy to express the same meaning in much more simple terms. As an example we take the equation, on p. 13, for the tensile resistance moment of a T-beam, where the neutral axis falls outside the slab. As written in the Report the equation is:—

$$R_t = b d^2 \left(s_1^3 + 4 m r s_1^2 - 12 m r s_1 + 12 m r \right) / 6 m (2 - s_1)$$

Now this can be put more conveniently in the same notation as follows:—

$$R_t = b d^2 \left[t r \left(1 - \frac{3 s_1 r_1}{6 r_1 - 3 s_1} \right) \right]$$

In the simplified form numerous repetitions of m , r , and s_1 are avoided, the result calculated for the term within square brackets is applicable to beams of any dimensions, and for approximate computations the value of the term within the small brackets, representing the proportionate length of the arm of leverage of internal forces, can be assumed at, say, 0.9, which is a fair average for ordinary beams. Moreover, the simplified equation lends itself conveniently to the preparation of tables and diagrams containing values from which the exact resistance moment for beams of any dimensions can readily be obtained by multiplication into the quantity $b d^2$.

No doubt those who are quite at home in mathematical exercises can perform the work of simplification for themselves, while there are many others who would be grateful to the Joint Committee for a simplified series of working rules.

The new section, entitled "Shear Reinforcement" (p. 14), deals with the important question of web reinforcement for beams. Subject to the reservation that 60 lb. per square inch as the working stress for concrete in shear does not provide an adequate factor of safety in respect of diagonal tension in beams, the procedure recommended is quite satisfactory, and the inclusion of rules for web reinforcement fills up a gap that was left open in the preceding Report.

We are glad to observe also that the section on "Pillars and Pieces under Direct Thrust" (p. 15) has been amplified by equations and data taking into account the valuable aid rendered by lateral reinforcement, which, properly disposed, raises the ultimate strength and increases the security against sudden failure by reducing (not preventing, as inadvertently stated in the Report) the lateral expansion of the concrete. The stipulation that an ample proportion of longitudinal reinforcement shall also be applied is wise, for, however great may be the value of lateral binding as auxiliary reinforcement, the longitudinal bars are always of primary importance both theoretically and practically.

The table of factors on p. 17 for different forms of lateral reinforcement will be found useful as a guide, but it is not improbable that the values there given may require modification when further experiments have settled more definitely the relative efficacy of helical, circular, and rectilinear binding for the core of reinforced concrete columns and struts.

The new subsection on "Working Stresses" (p. 18) contains features that should be widely appreciated. The recommendation of the safety factor of 4 at ninety days for all pillars is a further example of the recognition accorded elsewhere in the Report of the fact that concrete cannot be fairly judged by its strength at the tender age of twenty-eight days, and the table of working stresses makes quite plain the intention of the Committee that higher stresses are permissible for qualities of concrete superior to 1:2:4 mixtures. The specification of cement by weight in the same table is another commendable feature, as also is a footnote conveying the much-belated explanation in respect of 1:2:4 concrete at the age of twenty-eight days that "the limit of 2,400 lb. per square inch given in the previous Report of the Committee was adopted on the assumption that the cubes would be rammed with iron rammers under laboratory conditions."

The absence of this explanation has caused not a little inconvenience to reinforced concrete specialist firms during the past three or four years, especially when dealing with architects and engineers, who, with the object of being perfectly safe, have adopted the practice of interpreting literally the wording of the first Report.

The present Report concludes with a series of appendices, discussing various theoretical points raised in the text, and at the end is a tabular statement of the equations for singly reinforced beams. At the beginning of the pamphlet the notation adopted throughout is printed on a folding-plate which can be opened for reference while formulae are being studied.

Taken as a whole, this second Report marks a great advance, making clear several points previously capable of varying interpretation, and setting a more liberal standard for the employment of reinforced concrete, while providing reasonable safeguards for the protection of architects and their clients. It is to be hoped that when the Committee of the Institution of Civil Engineers have advanced to the stage of being ready to formulate recommendations, the Institution will be prepared also to co-operate with the Joint Committee in the establishment of regulations, and so obviate the inconvenience, at present threatened, of two independent and possibly conflicting codes dealing with reinforced concrete work.

SOME CONTINENTAL IDEAS OF SLATING.

By H. Y. MARGARY.

ON the Continent of Europe in general, and in France, Belgium, and parts of Germany in particular, there is, and has been from early times, a great love for slatted roofs. This elaboration applies not only to the way in which roof surfaces are built up by means of gables, dormers, turrets, chimneys, etc., but also extends to the texture of the roof surfaces themselves, these countries some charming effects produced by means of slates laid in a manner resembling the scales of a fish. There is a great variety of ways in which this can be produced. Three of these are shown in Fig. 1, that at A being perhaps the most known in this country; but the fact that each slate is fixed by one nail only renders a roof slated by this method somewhat noisy in a high wind, while it is also the case that the slates hang vertically upon the rafters. This arrangement does not seem to please the continental architect, who prefers general lines of his slating to run obliquely in gentle curves across his roof surface, as suggested in Fig. 2. For this reason more often uses slating of the types shown at B and C, Fig. 1. A doubling course of the eaves is required when slating as at A is used, but this is unnecessary with the other two types.

Interest is added to a roof by laying on two or lower courses with the edges of slates running in a different direction to the remainder of the slating. The simplest way to do this is to commence by laying a slat at a right-hand verge with the tail of the slat hanging the tilting fillet, as shown in Fig. 1, B, a piece of slate being laid beneath it where the roof boarding will be otherwise exposed. The remaining slats of the course are laid with the edges lap about 3 in. beyond the nail holes of the slates previously laid, the upper corners of slates being arranged to form a curve mentioned above.

Fig. 1, C, shows the slating commenced on a valley board, the right-hand slat of first course being cut so that it fits upon the valley board as hereafter explained.

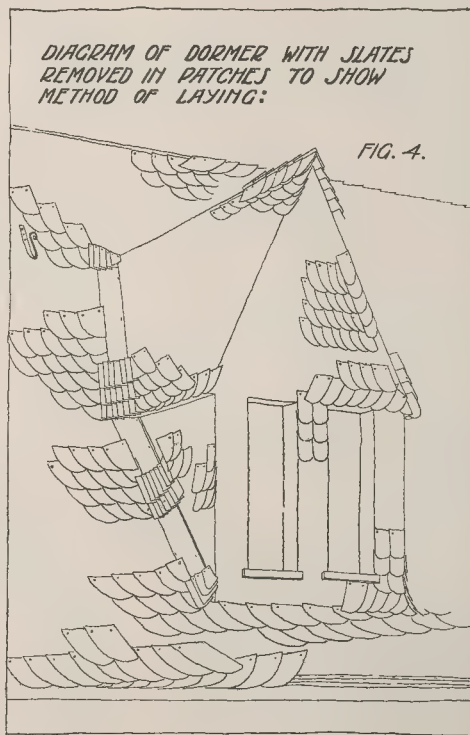
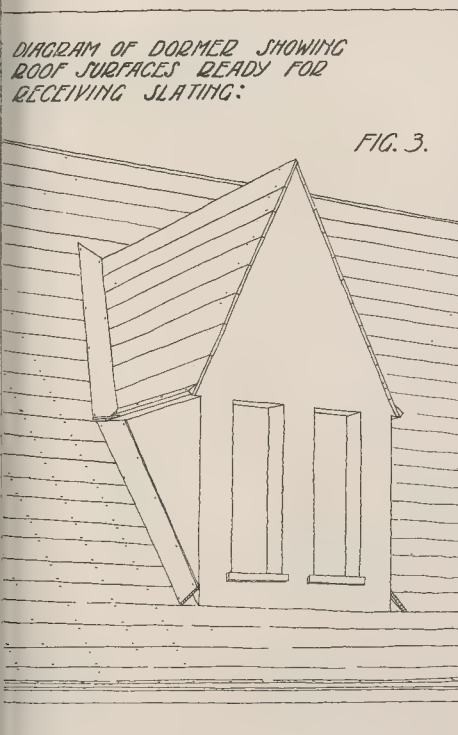
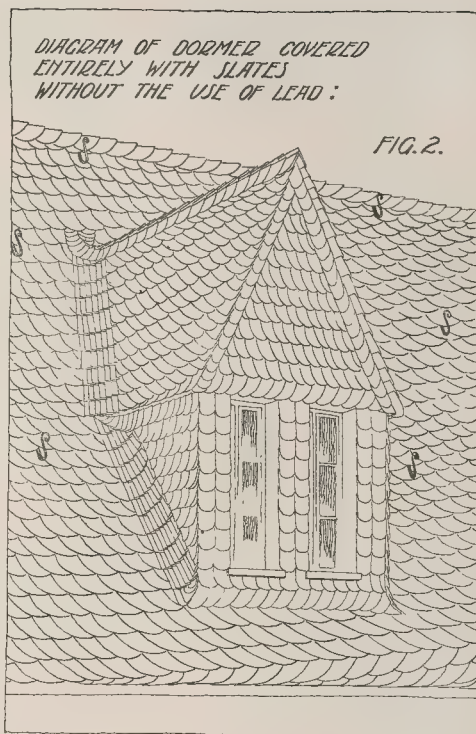
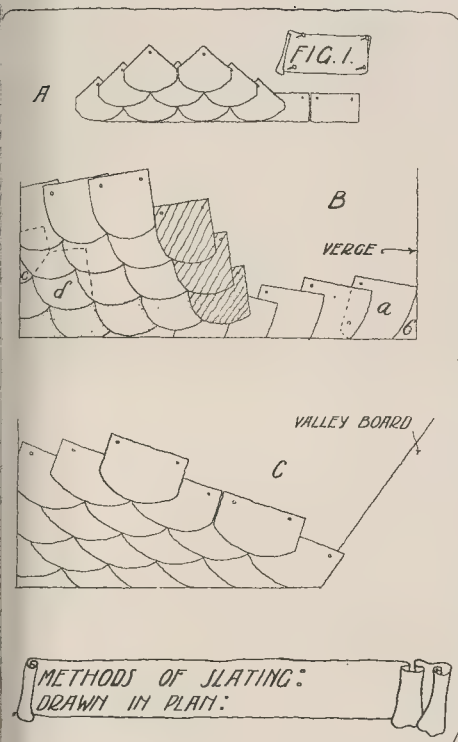
The second course is then laid so as to give a lap that is nowhere less than 3 in. Where the slates come against the eaves or verges they are cut off as shown.

Inconveniently small pieces will be obtained at the verges by cutting the slates only, but these may be avoided by cutting the end slate, as shown at C, Fig. 1, to the shape of the dotted outline, and cutting a corresponding portion off adjoining slate D.

It should be noticed that the slates may be laid in courses either across or up the roof, as indicated by the dotted and shaded shading respectively at Fig. 1, B.

It is usually most convenient to lay courses across the roof except near the verges, where, by laying the slates up the roof, any cutting and adjusting such as is shown at C and D is more easily performed.

Some charming effects are produced by forming all intersections of roof surfaces entirely in slate, i.e., without the use of lead, zinc, or other similar material. Fig. 3 shows a dormer treated entirely in slate. Fig. 3 shows the same dormer boarded ready to receive the slating. The dormer gable and cheeks may be of brick, batten, studding, or any other suitable material, making no difference to the method of hanging the slates, save that battens or fixings are necessary when the dormer is formed of any material that will not take the slates. It will be seen that boards are used across the valley at an angle of 45° to those between the main roof and dormer cheeks being cut to fit under the dormer eaves, and those between the main roof and dormer roofs having their upper ends mitred. These valley boards are from 6 in. up to



Some Continental Ideas of Slating.

in width according to the nature of the curve desired in the finished slating. The slates when laid are arranged as

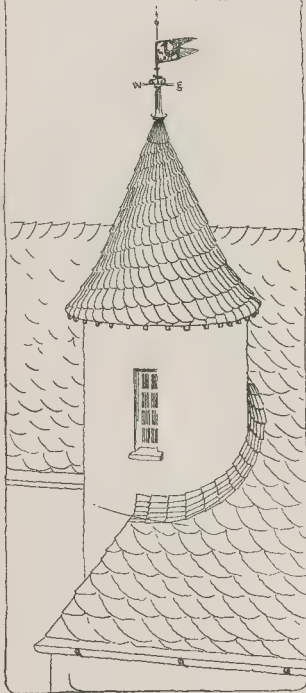
SECTION THROUGH VALLEY.

FIG. 5.

shown in Fig. 4, narrow strips being used, as these conform readily to a quick curve. Fig. 5 is a section through a valley, showing

DIAGRAM SHOWING SLATING TO CONICAL TURRET ROOF & CIRCULAR VALLEY:

FIG. 6.



the arrangement of slates. The slates of the main roof are tilted up upon the valley board, and the valley slates lap over them,

ARRANGEMENT OF SLATES AT HIPS & RIDGE

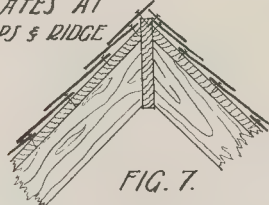


FIG. 7.

while the slates of the dormer roof or cheek overhang the valley slates.

When a valley is curved on plan, as in

FIG. 8.

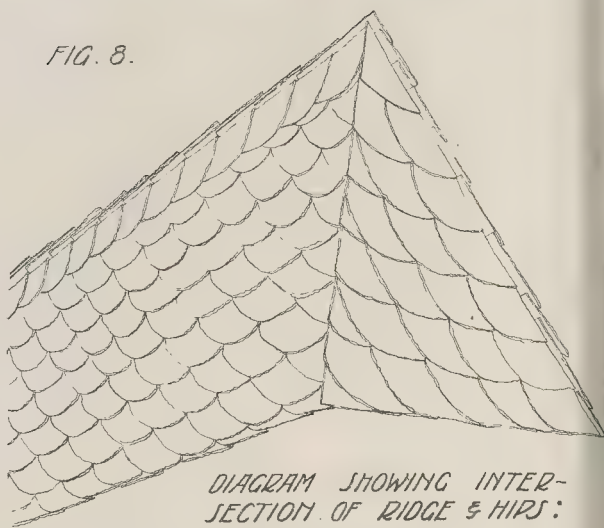


DIAGRAM SHOWING INTERSECTION OF RIDGE & HIPS:

Fig. 6, it is still carried up in a curve from the main roof surface, but in place of a valley board, which would be difficult and wasteful to cut and fit, short fillets are employed. These are nailed at 45 deg. across the valley, radiating from the centre of a circular turret, or, if the plan of the turret be other than a circle, normal to the curve on plan, the spacing being the gauge of the slating. On a turret roof the general arrangement of slates is the same as on a plane roof, but, of course, the slates must decrease in width and length, and the curved edge must be flattened towards the top so as to ensure a proper lap at every point, and so that the slates conform more closely to the increasing sharpness of curvature. If the slates were carried right to the top of the cone they would be so narrow that there would be insufficient horizontal laps to keep out the rain. For this reason lead is bossed over the upper part of the roof.

Ridges are formed of slates of the same thickness as the rest of the slates laid horizontally, as shown in Figs. 2 and 4, the top edge of the slates on one side being carried up higher than that on the other side so that the joint between them is covered, thus preventing the passage of rain. Fig. 7 shows a section of this. The same arrangement may be applied to hips, but it is simpler to cut the slates at the hips on one roof surface so as to overlap the slates on the adjoining surface, as shown in Fig. 8. Fig. 2 shows the intersection of a ridge and roof plane. Narrow ridge slates are used in this position so that they may be worked up in a curve over the mitred ends of the valley boards. As the curve ascends the angle between the two sides of the roof is flattened out so that

the uppermost slates lie flat on the main roof, where they are covered by the slates of the main roof.

For slate hanging the general arrangement of the slates is the same as for roof slating but the lap may be diminished if required.

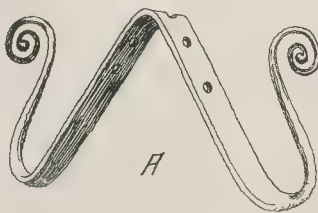
Each course of slates on each mullion, Fig. 2, is composed of two slates, one rather wider than the other, so as to bring the joint to the centre of the mullion.

A straight course is shown below the valley of the dormer gable, but, of course, the gable may terminate with a moulded cornice with a barge board, as desired.

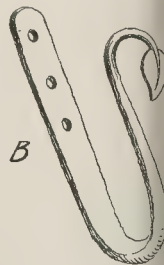
The slating on the dormer cheeks projects an inch or so beyond that of the gable wall so as to form a weather-resisting joint. Where the gable wall intersects the main roof the lower edge of the slate hanging is tilted forward, and is cut at each end to beneath the projecting edge of the slates to the dormer cheeks.

It is a prevalent custom to fix iron hooks in rows along the roof. These are fixed to the roof boarding by means of screws or nails preferably over rafters. Fig. 9 gives sketches of these hooks, A being designed for fixing at the ridge and B for fixing low down upon the roof surface. The beauty of a roof is considerably enhanced by the hooks, which are often beautifully wrought. The commonest form is made from a strip of iron with the exposed end worked into a scroll. The hooks serve as a fixing for the slater's scaffold when the slating is first laid and subsequently when repairs are necessary.

Fig. 10 shows a method of slating round chimney-stack without the use of lead. Here the front face and flanks of the stack are treated in the same way as a dormer, but the



A



B

FIG. 9.

ingement of valley boards and slating at back of the chimney calls for some planation. The upper ends of the valley rds *a a* are cut so that when fixed they at an angle of 45 deg. to the horizontal. o fillets such as *b* are spiked to the back he chimney at an angle of 45 deg. to the izontal, the upper edge of the lower end ng kept below the upper edge of the rd *a* by a distance equal to the thickness the roofing boarding so that when the ace *d* is formed its lower edge will be h with either upper edge of *a*. Next two ts are nailed to the roof at an angle of east 30 deg. to the horizontal, and the ace *d* is formed by nailing narrow boards ween the fillets *b* and *c*. The angle ween *d* and the main roof surface is d off by means of a tapered valley board. An arrangement of surfaces is thus ained, which tilts away from the back of chimney-stack, and is so gently eased t the slates may be easily laid upon them s to throw off the water.

t is best to form a gable at the back of y wide chimney-stacks with the valleys ned as already explained.

he ridge in Fig. 10 is formed as already lained.

he first two or three courses of slates at back of the stack are usually formed of row slates, but the remainder may usually of the same kind as used for the main roof, rather a larger lap.

ig. 11 gives a general idea of the appear- e of a stack with the surrounding slating hed off.

rojecting course of bricks or slates may sed to cover the upturned edges of the

slating round a stack, but when the stack is rough-cast the upturned edges of slate are covered with this material.

The explanation of these slating details is somewhat lengthy, but once the slater has seen work carried out as described above he will find no difficulty in actually performing the work himself.

CONSTRUCTION NOTES.

Mr. H. BURCHARTZ has made Frozen and experiments to determine the Rethawed effect of frost, if any, on the Mortar and subsequent hardening pro- Concrete. perties of cement, mortar, and concrete, these having been previously mixed ready for use:—

Cement.—Tests were made on two samples of cement, which had been prepared in the dry and wet ways respectively. The cements were mixed with water to a stiff paste, and the time taken for hardening to begin and for complete setting under the conditions stated below:—

(1) The cements were allowed to set under normal conditions.

(2) The cements were kept at nearly as possible at a temperature of 0° C. = 32° F.

(3) The cements were subjected to a temperature of -10° C. for three hours.

(4) The cements were subjected to a temperature of -10° C. for twenty-four hours.

(5) The cements were subjected to a temperature of -10° C. for seventy-two hours.

These frozen samples, viz., (3), (4), and (5), were, at the expiration of the hours stated, broken up with a hammer, and, after being allowed to thaw, were stirred for three minutes. The times for hardening and setting were measured from this point forward. It was found that preliminary freezing did not affect the times of hardening and setting. The samples

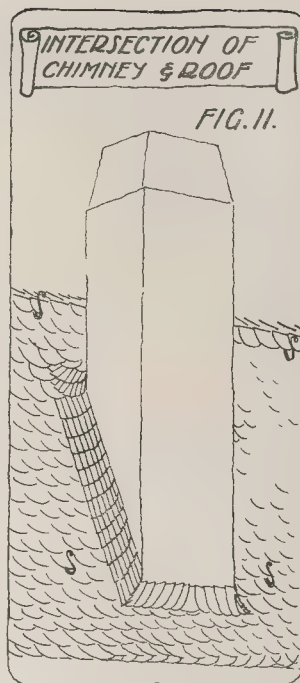


DIAGRAM SHOWING INTERSECTION OF CHIMNEY & ROOF SURFACE:

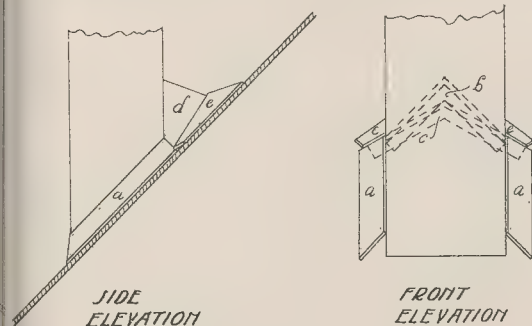
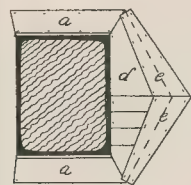
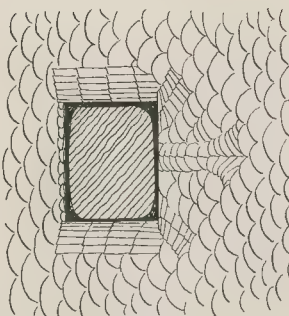


FIG. 10.



PLAN SHOWING BOARDING



PLAN SHOWING SLATING

kept at 0° C., however, were about four times as long as the others in reaching each stage. During the tests the temperature and humidity of the air were carefully noted. The same cements were used to make mortar and concrete.

Mortar and Concrete.—The mortar consisted of 1 part by weight of cement to 3 parts by weight of standard sand. The concrete was made up of 1 part of cement to 5 parts of gravel. Two classes of each were prepared, sufficient water being added to make the mixture in the one class (1) "earth damp," and in the other (2) "wet."

Test pieces were made (1) immediately after mixing, and (2) after subjecting to a temperature of about -14° C. (equal to 8-8° F.) for (a) three hours, (b) twenty-four hours, (c) seventy-two hours, and subsequently thawing. The test pieces were allowed to set under damp sand, some for seven days, and the remainder for twenty-eight days, and then tensile and compression tests were made.

The results showed that cooling for a few hours only had a negligible effect on the hardening of mortar and concrete, but that the rate of hardening was much lower after a prolonged freezing, this being strikingly accentuated for the "earth damp" over that for the "wet" mixings.

Testing Concrete and Materials for Reinforced Concrete.

The testing of reinforced concrete is under consideration and will form the subject of a later report.

Although the classified list of aggregates includes crushed slag, clinker, and coke breeze, we are glad to see a note to the effect that these are not recommended for reinforced concrete. The point is one which we have emphasised on several occasions during the past four or five years.

The accompanying diagram gives the result of a series of tests denoting the percentage of voids in various kinds of aggregates and sand. This diagram is interesting, but cannot be accepted as a guide in practical work where fragments and particles exhibit wide variations from time to time.

The deleterious effect of dust in sand is

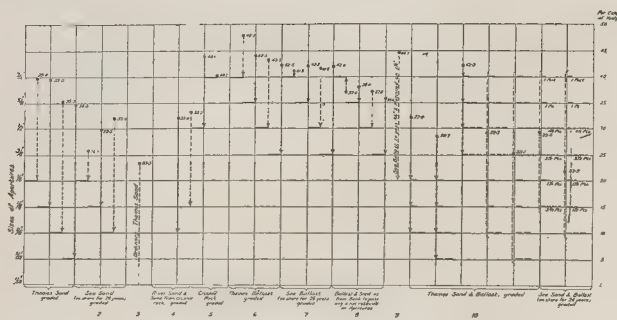


DIAGRAM SHOWING PERCENTAGES OF VOIDS IN VARIOUS BALLASTS AND SANDS

EXPLANATION.—Each horizontal thick line represents the percentage of voids which

falls on the line. Numbers above figures are the percentages of voids in the sand.

The figures above figures are the percentages of voids in the sand.

clearly demonstrated by tests quoted in the report. According to these the compressive and tensile strength of 1:3 mortar made with granite and whinstone crushings, including all dust, is remarkably lower than that of mortar in the same proportions, but made with standard sand.

While accepting the tests for cement contained in the latest revision of the British Standard Specification, the committee advocate the adoption of crushing tests on 3-in. cubes of 1:3 mortar, the crushing strength to be not less than ten times the tensile strength at twenty-eight days required by the Standard Specification.

The standard recommended for steel may be thus summarised: Tensile strength, 60,000 lb. per square inch; yield point, 34,000 lb. per square inch; contraction of area at fracture, 45 per cent.; or elongation of bars not more than 1 in. diameter 25 per cent., on a length of eight diameters, the elongation for larger bars being fixed at 30 per cent. on a length of four diameters. The usual cold bending test is also included.

For determining the crushing strength of concrete the Committee recommend that tests shall be made on six 4-in. or 6-in. cubes in every case, three cubes being moulded in the laboratory and three on the works under construction, the concrete to be taken from the actual mixing plant.

It should be noted that the cubes can be made in metal moulds and the concrete worked in by pumping and tamping and afterwards gently rammed. Differences of manipulation will certainly be followed by variable results, and unless some standard mechanical contrivance can be adopted for filling the moulds we fear that misleading results will be unavoidable.

One very commendable suggestion is that specifications should provide for a provisional sum to be expended in the various tests required.

Rendering Linoleum Fireproof.

Mr. F. Fritz, investigating the properties of linoleum, has found that certain attempts to render linoleum fireproof by substituting asbestos, kieselsäure (sometimes spoken of as "fossil meal"), etc., for the cork-powder have not met with any appreciable success. On the other hand, good results have been attained by adding to the ingredients of the linoleum substances which when heated emit gases that would extinguish a flame. Suitable proportions he finds are:—Twenty parts by weight of cork-powder, 17 of linoleum cement, 8 of sodium bicarbonate, and 4 of ochre. The addition of the sodium bicarbonate does not have any apparent injurious effect upon the finished linoleum, and the temperature at which it decomposes is far above that of the kneading process. It is unnecessary to impregnate the jute basis with the salt, though in certain cases the fabric may with advantage be soaked in a weak solution thereof, and then dried. To find out how much "linoleum cement" is contained in a sample Mr. Fritz recommends a modification of the method suggested by Messrs. Ulzer and Baderle.

The last named technicians estimate by heating the finely-powdered material with benzene in a sealed tube at 150° C.; but

Mr. Fritz finds that the "cement" is not completely dissolved by this treatment, and that better results are obtained if, after heating, the residue is extracted with a mixture of benzene and chloroform.

The nature of the residue may be qualitatively, and in some measure quantitatively, determined by a subsequent microscopic examination.

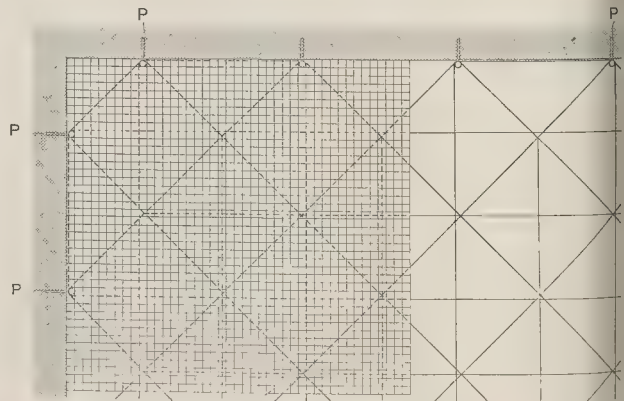
Testing Materials of Construction.

WITH a few notable exceptions, the testing of structural materials has not been undertaken systematically in this country, either by Government or by scientific societies. There was once, and perhaps may still be, a comatose British section of the International Association for Testing Materials, but for some reason this organisation never seemed to flourish. In the United States a similar branch has blossomed out into an independent society of continued vitality and activity. This is shown by the annual meeting held under the presidency of Dr. H. M. Howe at Atlantic City in July last, when 450 members and visitors were present, the total membership of the Society being 1,400 at present. A new stage of development is indicated by the evidences of systematic work conducted by numerous committees and sub-committees by whom various classes of material have been under consideration during the past year. Many important progress reports, completed specifications, and papers were submitted at the annual meeting.

Sound-Resisting Walls and Ceilings.

A METHOD recently devised in Germany for rendering walls and ceilings capable of effective resistance to sound transmission is illustrated diagrammatically in the accompanying sketch.

Under the ceiling or soffit of the floor, or parallel to the wall, as the case may be, a network of wire is stretched tightly by means



Sound-Resisting Walls and Ceilings.

of pulleys, secured as at a into the adjacent walls, and not touching at any point the surface to be protected against sound. Then upon the wirework is plastered a composition formed of strong glue, plaster of Paris, and granular cork, so as to make a flat slab between wall and the wall or ceiling is a cushion of confinement.

The inventor points out that the arrangement is advantageous in the case of ceilings of fire-resisting floors which, although otherwise excellent, are characterised by excessive sonority. He also draws attention to the fact that sounds are often transmitted from one part of a building to another, and from adjoining buildings through contiguous walls. This contention is undoubtedly correct, and those who undertake to provide against the conduction of sound will do well not to neglect their efforts to the treatment of floors.

The method described is good in respects:—(1) The absence of contact between the protective and protected surfaces; (2) the colloidal nature of the composition recommended for plastering.

Reinforced Concrete Notes.

THE use of reinforced concrete is rapidly extending, encroaching on the province of other materials. Several years ago reinforced concrete was tried in the form of sleepers by an English railway company, and the result was satisfactory. Now the companies—the London and North-Western, Great Northern, and the Great Eastern—have utilised reinforced concrete for fence posts. A well known, creosoted wooden posts require renewing, their life not being more than twenty years. On the other hand, reinforced concrete has a much longer life, being in fact practically imperishable, so that, even if its cost is greater, its advantages counterbalance its first economy. The cost of such posts runs at about 6½d. a foot lineal, and in cases where cement, iron, and sand are cheap locally the cost of reinforced concrete posts is less than that of creosoted wooden ones. Similarly for the use of reinforced concrete is a boon to the farmer. Posts, drinking-troughs, channels, and a variety of other parts about the farm can easily be made by the farmer himself in his spare time, and especially in the case of cast drinking-troughs greater cleanliness is obtained.

Economy in Building by Use of Terra-Cotta.

THE use of terra-cotta in the State Educational building, Albany, N.Y., in place of marble in the decorative features, it is claimed, enabled a saving of 100,000 to be made in this building. The plain parts of the building and the shafts of the twenty-eight columns which are employed have been executed in marble, the decorative parts, including large Corinthian capitals, have been made of terra-cotta glazed to a colour to match the marble work.

The cost of these capitals, which are 80 to 10 ft. high, is said to have been 89¢ each, against an estimated cost of the same in marble of 480¢ each, a saving on the capitals alone of roughly, 11,000¢.

THE BUILDING TRADE.

RECENT WORKMEN'S COMPENSATION CASES.—I.

Arriving At and Leaving Work.

WE have from time to time suggested certain principles which would assist in enabling employers and workmen to determine when the employment commences and ceases, and, consequently, when they are within the Workmen's Compensation Act. We may refer in particular to the articles in the *Builder*, number 2, 1907, and August 27, 1910. Recent cases serve further to illustrate the principles enunciated in the November 2, 1907. We then laid it that, "although not absolutely at the place where his work has to be performed, a workman arriving at or leaving premises which are under the control of the employer for the purposes of getting to or from his work will be deemed still to be in the course of his employment if he is furthering the employer's interests," and in that case and the article of August 27, 1910, illustrated that proposition by reference to decided cases.

In two recent cases make the matter clearer. In *Gilmour v. Dorman, Long & Co., Ltd.*, a workman employed at steel works elected to go to his work across a footpath which traversed some land of his employers, but which necessitated his walking no part of his journey to the works along a railway line. He slipped and was injured on the land belonging to his employers. The Court of Appeal held that he was injured "in the course of his employment." The employers could not authorise him to reach by a route which necessitated trespass on the railway line and there was an alternative way he could have selected. The Court of Session have come to a similar conclusion in the case of *McLaren v. Caledonian Railway*, where a man in the employ of the railway company started to traverse the railway instead of walking down a road which connected two places at which he was employed. These cases well illustrate the meaning of our article August 27, 1910, that a man, if he approaches or leaves by a route within the contemplation of parties will be within the contract of employment, but not so if, for his own convenience, he is taking an unauthorised route over his employer's premises.

Continuous Employment, or Employment Implying Residence on Premises.

When the employment is continuous, or involves residence on the employer's premises, the principles apply. We treated on this subject of the law in articles January 9, 1909, and 13, 1910, but one or two recent decisions further illustrate the problem. If an employee has to return to the premises, and is injured by the recognised means of access to the premises, he will have met with the accident "in the course of his employment." In *Moore v. Manchester Liners*, the Court, August 13, 1910, provided, that he had not committed a breach of contract by being absent at a wrong time or on leave. If he is away with leave, but is on his own business, it is essential to prove that at the time the accident occurred, he reached his employer's premises or some place of access to the same under their contract. The accident will not arise out of his employment (see the decision of the House of Lords in *Kitchinham v. Owners of the S.S. "Thamesburg"*). If he is on his employer's premises he is continuously under the Act, provided, of course, that he runs no unnecessary risk outside the scope of employment.

INCREMENT VALUE.

Some recent correspondence in the *Times* on the Administration of the Finance Act 1909, very uncertain nature of increment value has been exemplified by the divergent expressions. One correspondent, writing to the House of Commons, has even gone so far as to declare that house property, apart

from the land upon which it is built, can never increase in value, and that as long as the cost of labour and materials remain the same, the supply being unlimited, demand can have no effect on its value. He argues from this that land is the only factor that can appreciate, and the value of the perishable article, the house, having been found, the value of the land can easily be determined.

There is unfortunately too much ground for thinking that the valuation officers proceed on some such view as this in making their valuations. They consider the bricks and mortar to be perishable, and when an occasion arises treat any difference shown between the original valuation and the valuation on the occasion as attributable to a rise in the value of the land. This may be very well on paper, but how does it strike the ordinary builder? Lord Sheffield has pointed out that fashion may affect the value of house property quite apart from any fluctuation in the value of the land, and we think all builders will endorse his view. Under the Finance Act fashion or demand is attributed entirely to site value, but we think the fallacy of any such contention may be exposed by considering the case of houses of a particular character. Of late years there has been a demand for houses of any definite period, such as Elizabethan houses, Georgian houses, etc. Houses in the neighbourhood of such a house of character may have depreciated, but a fancy price will be given for a house of genuine antiquity. What has the value of the land to do with this? The land, owing to encroachment of buildings of an undesirable character, may have depreciated, but the demand is for the house itself. Yet if the principles above enunciated be applied to such a property a sum for depreciation must be written off, which would leave hardly any value at all, and the high price obtained for something in the nature of a curio would be attributed entirely to the land. Such a case shows the injustice of this principle of taxation, and it is highly erroneous to exclude the question of demand. A house may be suitable for some particular purpose, and its adaptability to this purpose forms part of its value entirely independent of the value of the site. There appears considerable risk that the depreciation written off buildings will in every case be added to the site value, in which case owners of a wasting property will be taxed not on increment, but on depreciation. The whole subject certainly calls for a strict and impartial inquiry at the hands of competent persons.

CONCRETE PLANT FOR COLD WEATHER.

ALTHOUGH severe frost rarely prevails in Great Britain for long periods, the plant and arrangements described below will probably furnish some useful hints to contractors engaged in concrete work both in winter and in summer.

The methods in question were adopted by the Newton Engineering Company of Milwaukee for building a three-story warehouse,

64 ft. by 112 ft. in plan, having a reinforced concrete skeleton with brick curtain walls.

We give a sketch plan showing the arrangement of the plant, which comprised an electrically-operated concrete-mixer discharging directly into the bucket of an electric hoist consisting of a sectional steel tower with guides and head-frame for operation of the bucket-shaped cage. A special feature of the hoist was the manner in which the lower part was carried horizontally so as to cause the cage to pass under the outlet of the mixer so as to receive the concrete without involving the use of intermediary appliances. In addition to saving the cost of unnecessary handling this method possesses the recommendation of reducing to a minimum the period elapsing between the mixing and deposition of the material.

The electrically-driven gear for operating the concrete hoist was provided with an extra winding drum for transporting trucks of material running on the 24-in. gauge track shown in the plan, and for rendering other aid.

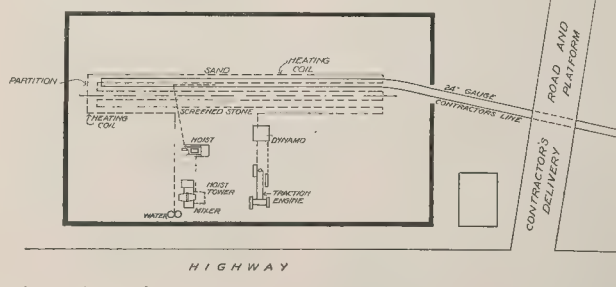
Beyond the concrete plant proper the contractors provided a 5-h.p. electric hoist for dealing with materials, such as brick, mortar, timber, and steel. In addition an electrically-driven circular saw bench was laid down for preparing timber used in the construction of moulds.

As electric power was not available on the site of the works the contractors generated the requisite current by the aid of a 13-h.p. dynamo, driven by a 20-h.p. traction engine.

Materials were brought to the site by a road shown at the right-hand of the plan, the waggons being driven up an inclined timber platform through trap-doors in which their contents could be discharged into trucks running on the contractor's track beneath, the latter being laid on an inclined trestle. The trucks employed were of special design, discharging by a hopper bottom and a side outlet. The contractor's line inside the building was carried by a trestle similar to that outside and close to a partition dividing sand from aggregate.

When the truck was used for delivering gravel a screen was attached below the bottom outlet, the result being that sand found its way through the pebbles to one side of the partition, while the screened pebbles rolled over and collected on the other side. In order to prevent the sand and aggregate from freezing steam pipes were laid on the ground beneath the material heaps, and supplied from the boiler of the traction engine. Exhaust from the coil was led into the vessels used for the supply of water to the concrete-mixer.

The procedure followed by the contractors was generally as described below. While the moulds and brick walls for each story were being erected, concrete materials were delivered and transported on the contractor's track to the interior of the building. The steam coil was kept hot so that the sand and stone should be thawed and remain warm until sufficient was collected for the concrete of an entire floor. When all was ready the operations of mixing and depositing concrete were commenced and continued without cessation until the entire floor was completed, thus obviating the bonding of old and new work. As the flooring was



Concrete Plant for Cold Weather.

completed the surface was protected by canvas, this protection, in conjunction with the use of salamanders below the moulds, salt in the water, and warmed materials, eliminating all the troubles usually accompanying the execution of concrete work in frosty weather.

While the building was under construction the temperature for at least fifty days was below 15 deg. F. all day, and sometimes fell to below zero. The erection of this building under severe weather conditions with results stated to compare favourably with those obtained in warm weather shows that with suitable precautions reinforced concrete work is entirely practicable at low temperatures, but it must be borne in mind that the cost is considerably above the average.

CHANGES IN RATES OF WAGES: BUILDING TRADE.

THE eighteenth report of the Board of Trade on changes in rates of wages and hours of labour contains some statistics of considerable interest at a time when public attention has so forcibly been drawn to the question of the workman and his hire. In considering the figures presented in these reports it is essential to bear in mind that the changes in wages referred to are changes in the rate of remuneration of a certain class of workpeople apart from any change in the nature of the work performed. Thus the figures relate only to changes in rates of wages quite distinct from earnings.

In the fifteen years 1896-1910 there have been eight years with rising and seven years with falling wages, but the net effect has been an increase of 353.985*l.* in an ordinary week's pay.

1908 and 1909 were years of falling rates of wages representing respectively decreases per week of 59.17*l.* and 68.92*l.*, but 1910 showed an improvement, with a net increase of 14,534*l.* These being general figures, we may turn more particularly to the building trade.

The report states:—"Employment in the building trades continued slack in 1910, and although the percentage of trade union members unemployed showed some improvement on the previous year, the industry generally remained depressed."

This statement supports our comment (the *Builder*, May 26) on the Budget statement of the Chancellor of the Exchequer, when he represented the building trade to be participating in the general prosperity of the country, and, as we contended, took too favourable a view of the conditions prevailing in this trade.

In the year under review, 1910, the net result of changes in the rate of wages is an increase per week of 37*l.*, as compared with a decrease in 1909 of 71*l.* The number of workpeople affected by any change was, however, only 4,970, or 0.5 per cent. of the number employed. The changes were effected as to 27 per cent. of the persons involved by conciliation and arbitration, and it is particularly worthy of attention that, as regards 4,752 persons, the changes were effected without strike, and only as to 218 persons after a strike.

The net result of changes in hours of labour was a reduction of 4,208 per week, and 12,918 workpeople were affected. The changes were attained by conciliation or arbitration as to 21 per cent. of the persons involved, and only in the case of 109 persons was striking resorted to before the settlement was attained. In this respect the building trade—a most depressed industry—continues to show a good example to far more prosperous trades.

This report does not deal with the amount of employment or unemployment. The figures published in the *Board of Trade Labour Gazette* for July showed some improvement, but the returns made to the Board of Trade, as we have pointed out frequently and as was recognised in the Actuarial Report on the Insurance Bill (see the *Builder*, May 26), only apply to certain classes employed in the building trade, and are an imperfect guide as to the conditions prevailing in the trade as a whole.

A DECEASED BUILDER'S ESTATE

The late Mr. George Boxall, of Hazelhurst, Pangbourne, Berks, builder and contractor, has left estate of the gross value of 24,157*l.*



An Indian Mortar Mill.

AN INDIAN MORTAR MILL.

THE accompanying illustration depicts an Indian mortar mill, in which the mortar is ground and mixed under a heavy stone roller, which is pulled round in a circular trough by a pair of small bullocks. The trough is only a little wider than the roller, which squeezes much of the mortar out on to the ground on each side. This is scraped back into the trough by a woman coolie, who follows the roller round and round, using a "mamoty," or hoe. In Southern India the roller is usually made of hard gneiss, blocks of which, intended for the same building as that for which the mortar is being prepared, may be seen at the left-hand side of the picture. Very good mortar is made by this machine, which is supremely efficient as regards the application of the power. Almost the whole of the resistance to the pull of the bullocks is that due to the performance of the work of mixing and crushing, and the return of the material by hand results in better mixing than that which would be effected by any but a very complicated mechanical device. Slow movement for men and animals is less tiring than standing still, and the friction of the machine is very small indeed.

A BILL RELATING TO LABOUR DISPUTES.

A BILL has been introduced, presented by Mr. Crooks and supported by members of various parties, to deal with labour disputes, which is deserving of some attention, as its object is to foster conciliation and to obviate disastrous strikes and lock-outs.

The Bill contains forty-six sections, and it is not our intention to examine it in detail. It provides for the constitution of conciliation boards to be appointed by the Board of Trade, consisting of three members—one to be appointed on the recommendation of the employers, one on the recommendation of the employees, and the third on the recommendation of the members so chosen. The expenses of these tribunals would be defrayed out of moneys provided by Parliament. This being the case, it is a matter for comment that the Bill contains no provisions enabling them to enforce their awards, unless, under clause 37, the parties agree in writing that they shall be legally enforceable.

The most important clauses are 32 to 36, which have for their object the prevention of any strike or lock-out prior to, or pending a reference to the tribunals, and imposing penalties for a breach of these provisions. This seems a step in the right direction if such penalties could ever be enforced, but since the Trade Disputes Act the trade unions, the real parties to strikes, are immune from proceedings, and cannot have their funds attached.

The intention of these clauses appears to be to render a reference to arbitration a condition precedent to the right to lock-out or to strike, but as the reference to arbitration is optional, this intention might be expressed

in clearer terms. Besides this, as "disputes" is defined in the accepted sense of a difference between an employer and his employees, Bill would appear to have no application where there is no such difference, but men come out, or are locked out, because of disputes between other employers and employees, i.e., in the case of general strikes. Therefore, although the Bill is worthy of attention, it appears hardly adequate to meet the "present distress."

GENERAL BUILDING NEWS.

CHURCH AT WOODSEATS, SHEFFIELD.

This church, to accommodate 600, is in the erection from the designs of Messrs. C. M. Hadfield. The estimated cost is 7,200*l.* The whole building will not be complete, however, until financial considerations have been overcome.

BAPTIST CHAPEL, PORT TALBOT.

The Calcaria Welsh Baptist Chapel, Port Talbot, was opened at the end of last month by the designs of Messrs. Evans & Jones. It was designed by Messrs. Evans & Jones and Messrs. W. P. & E. Williams were contractors. The building is of stone, and the cost was 1,100*l.*

SCHOOL AT GABALFA.

An infants' school, designed by Mr. Pugh-Jones, of Cardiff, has been inaugurated at Gabalfa. The cost of the building is 2,805*l.*, accommodation being provided for scholars. The contractors were Messrs. K. & Wells, of Cardiff.

NEW SCHOOL, NEWCASTLE.

A new school has been erected at Foss Hall at a cost of about 4,000*l.*, from designs of Messrs. Hope & Tasker, architects. The contract was carried out by Mr. J. W. High Barnes Works, Sunderland.

SCHOOL IN WEST FIFE.

Owing to the construction of the Royal Naval Base the village of Limekilns has been peopled to such an extent that a new school was considered necessary by the Dunfermline School Board. Accordingly the building, cost 7,000*l.*—has been begun. The architects are Messrs. Hyslop, Ure, & Beveridge, Dunfermline. The following firms and individuals are also at work on the school: Contractors and builders, Messrs. James Stewart & Sons, Dunfermline; joiner, George Lawrie; plumbers, Messrs. Thomson & Co.; slater, Mr. John Robertson; plasterer, Mr. John Lambert; heating, Messrs. Mackenzie & Moncur; ventilation, Messrs. Donald & Donald; smith work, Messrs. Bonnar & Son; painters, Messrs. Hoggan & Son.

NEW SCHOOL, FOR PENZANCE.

A site near the Public Buildings has been acquired by the Borough Education Committee, who proposed to build on the land a school to meet the demand of the neighbourhood.

INFANTS' SCHOOL, SALFORD.

Mr. J. B. Broadbent, A.R.I.B.A., is architect of the infants' school in course of erection in Robert Hall-street, Trafford Park, Salford. A memorial stone was placed in position last week.

ELEMENTARY SCHOOL, STOWMARKET.
is proposed by the East Suffolk County Council to provide school accommodation for about 600 children, and a site has been fixed at Stowmarket.

SCHOOLS AT WEST BROMWICH.
Schools, designed by Messrs. Wood & Brick, have been built at Hill Top, West Bromwich, on a site formerly occupied by the "Hollies," the residence of the late Alder- Wilson, who interested himself in the education arrangements. There are four classrooms, for boys, girls, junior mixed, and infants, each section accommodating 320 pupils. The cost of the schools was £13,860, inclusive of equipment.

EXTENSION OF TUBES, LONDON.
Messrs. John Mowlem & Co., contractors, of London, are to execute the construction of a new tube from Paddington tube, and the extension from Charing Cross to the Embankment for the London United Electric Railways.

PORT GLASGOW STATION.
The new passenger station was sub- commenced recently at Port Glasgow. Town- Council, and it was decided to assist the Glasgow Railway with their scheme. The new station leading off Princess-street forms an access to the new station.

BUILDING IN LIVERPOOL.
According to the report of the Building Surveyor, beat no records for building in 1910. Indeed, except in the Walton ward, there was a substantial diminution of building. The 1,710 houses erected was a decrease of 439 than in 1909, and 396 below average of many years. The reason lies in the advent of the garden city of three and a half acres, which has diverted funds within the city boundary.

PAY OF BUILDERS' LABOURERS.
The employers in the district of Salford have asked to give to labourers engaged in building trade an immediate advance of 1s. 6d. in the amounts desired being a fixed sum of 6d. an hour for all general labourers, including excavators, 6d. per hour for hod-carriers, and 7d. per hour for masons, mill men, iron fixers, and other labourers. It appears that many firms pay such wages to certain of their labourers, and it is probable that there will be difficulty in adjusting the matter. Con- siderable who have based their estimates on the current rates of pay, may, however, seek to increase the alteration.

SEASHORE, KNOTT END, FLEETWOOD.
The esplanade is being made at Knott End the plans of Mr. T. A. Drummond, Surveyor to the Quail Holme Estate, and Mr. Monk, Surveyor to the Presall Urban Sanitary Authority, have been suggested for years but it is only recently that the local interests have been brought forward. The length of the esplanade will be 1,000 yds., and its width will range between 100 and 110 ft.

HOUSE COLLAPSE IN THE WEST END.
The site of a building, recently shored up in Great Portland-street, was cleared a house adjoining, though up, collapsed, and the workmen but- tress escaped.

TRADE NEWS.
In the direction of Messrs. N. W. Harri- son, R.I.B.A., and G. A. Harrison, M.S.A., the "Boyle" system of ventilation, embracing Boyle's latest patent "air- ventilators and air inlets, has been applied to George-street Congregational Church, Oxford.

Mr. Stanley Jones & Co., whose factories at Salford's Bush have been extended by 15,000 sq. ft., have just secured the order for the installation of showcases, etc., in the premises of Messrs. Katz Brothers, Ltd., at 10, Abchurch-lane. The amount of the contract is £2,000.

New Hospital, Atherstone, is being designed with Shorland's warm-air ventilating system. Manchester stoves, by Messrs. E. H. and Brother, Ltd., of Failsforth, Lancashire. Messrs. O'Brien, Thomas, & Co., Upper Portland-street, London, and Excelsior Works, Birmingham, have recently supplied for their D. O. Boyd's roof ventilators for new dining and refreshment rooms at the new hospital being erected at King's Cross, the contractors being Messrs. Hall & King, of the Lynn. The two lifts are carried out by the Lift and Hoist Com- pany, Premier Engineering Works, Deptford,

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABEYDORE.—Repairs to parish church (470l.); Rector of Abeydore.

Aberdeen.—Additions to slaughter house, Hutcheon street, for the Aberdeen Flesher Incorporation.
Aberystwyth.—Parish hall; Churchwardens, St. Michael's, Aberystwyth.
Billingborough.—Alterations and improvements at the Vicarage; the Vicar.
Bingley (Yorks).—Public baths, Myrtle-park; Mr. H. Bottomley, Surveyor, Bingley Urban District Council.

Birmingham.—Sanatorium, near Birming- ham; Messrs. Martin & Martin, architects, Colmore-row, Birmingham; Messrs. Lowe & Son, builders, Burton-on-Trent. Additions, Ansell's Brewery, Messrs. Lusk & McKenzie, architects, Bedford-row, W.C.; Mr. W. J. Whittall, builder, Lancaster-street, Birming- ham. New ropeworks for Messrs. Wright; Messrs. R. Fenwick, Ltd., builders, William Edward-street, Birmingham.

Bispham.—School chapel; Trustees of the Bispham Congregational Church.

Blaengarw.—Hall (1,000l.); Vicar, St. James', Blaengarw. One hundred houses for the International Coal Company, Blaengarw.

Blowick.—School (7,000l.); Mr. L. Maggs, architect, Shire Hall, Nottingham.

Bolton.—Extensions, Townley's Hospital (30,000l.); Mr. H. I. Cooper, Clerk, Board of Guardians, Bolton.

Brigg.—Alterations to factory for Messrs. Spring & Co.

Broughton (Manchester).—Extensions to North Manchester New Church, Bury New- road; the Vicar.

Burbage.—Institute, Bishops-lane (1,612l.); Messrs. Robinson Bros., builders, Burbage.

Collington.—School (1,000l.); Mr. W. J. Martin, builder, Drakevale.

Cuckfield.—Parish hall; Rev. J. L. Stewart, Cuckfield.

Darnley.—Home for nurses (5,500l.); Mr. H. Clough, architect, Rochdale; Mr. R. Kay, builder, Rochdale.

Dowlais.—Proposed extensions to Wimborne baths; Mr. T. F. Harvey, Surveyor, Merthyr Tydfil Town Council.

Dundee.—Training college, Park lane (60,000l.); Mr. F. M. Cappon, architect, Bank- street, Dundee.

Durham.—Hall (1,020l.); Pastor, Presby- terian Church, Durham. Extension to Union Offices (840l.); Mr. C. B. Smith, care of Mr. H. E. Ferens, Clerk, Board of Guardians, Durham.

Durrington.—School; Mr. J. Powell, County Hall, Trowbridge.

Eastbourne. The following plans have been passed:—Marine Hall, Seaside, for Mr. J. Stainley; Mr. Andrew Ford, architect. Addi- tions, "Holyrood," St. Anne's-road, for Mr. J. K. Brydgos; Mr. P. D. Stonham, architect.

House and garage, Pridaux-road: Messrs. Peerless-Dennis & Co., builders. Additions to premises, Lisimore-road, for Messrs. Bobby & Co.; Mr. Andrew Ford, architect; Messrs. M. Martin & Son, builders.

Four houses, Desmond-road; Mr. A. Chandler, architect; Messrs. Ford & Pellett, builders.

Reclis.—Three houses, Corporation-road; Messrs. Thomas Moore & Son, builders, 22, Monton-road, Eccles.

Edinburgh.—Ice rink, West Tollcross, for the Edinburgh Ice and Cold Storage Company, Ltd.

Embsay.—Church, Moor-lane; Architect, care of the Swedenborgian Trustees.

Falkirk.—Board-room, etc., Dalders-avenue (1,800l.); for the Bainsford and Grahamston Co-operative Baking Society.

Ferryhill.—Alterations and extensions to club for the Ferryhill and District Workmen's Club.

Freckleton.—Bank premises, The Green; architects, care of the Directors, Manchester and Liverpool District Bank.

Frinton-on-Sea.—Free church (4,500l.); Mr. W. Hayne, architect, Frinton-on-Sea; Messrs. Potter & Son, builders, Chelmsford.

Gellifaelog.—Proposed 300 houses; Mr. T. F. Harvey, Surveyor, Merthyr Corporation.

Gerrard's Cross.—Bank; Architects, care of the Directors, Messrs. Barclay & Co.

Golear.—Additions to Heath House Mills for Messrs. Thorpe.

Greenock.—Alterations to the West Parish church; the Pastor.

Halifax.—Improvements to the Crossley and Porter Orphanage (2,000l.); the Governors.

Harwich.—Theatre, King's Quay-street; Mr. C. Thurston, Harwich.

Hebburn.—Offices for Messrs. Hawthorn Leslie & Co., shipbuilders; Messrs. J. & W. Lowry, builders, Corporation-street, Newcastle-on-Tyne.

Howden.—Alterations to workhouse; Mr. H. Green, Clerk, Board of Guardians.

Keighley.—Sunday school; the Pastor, Victoria park, Wesleyan Church.

Launceston.—Generating station adjoining London and South-Western Railway Station, for the Launceston and District Electric Supply Company.

Leeming Bar.—Proposed church; Rev. B. Peirse, Leeming Bar.

Limbury.—School; Messrs. Gotch & Saunders, architects, Market-place, Kettering.

Llanhllith (Mon.).—Fifty houses; Mr. D. J. Loughor, architect, Pontypool.

Locks Bottom (Bromley).—Proposed exten- sions to workhouse (12,000l.); Architect, care of Mr. E. Haselhurst, Clerk, Board of Guardians, Bromley.

London.—Grain silo; Messrs. J. Ballantine & Co., builders, Strand-road, London.

Lowestoft.—Beach school; Messrs. Oliver & Chetwood, architects, Bloomsbury-square, W.C.

Lytham.—Club-house for the Lytham and St. Anne's Golf Club (3,100l.); Mr. G. H. Willoughby, architect, 48, Parr's Bank-build- ings, Manchester; Messrs. Dryland & Preston, builders, 20, Clifford-road, Blackpool.

Malton.—Workhouse laundry; Mr. C. H. Channon, architect, care of the Guardians, Malton.

Mansfield (Notts.).—Additions to workhouse; Messrs. Vallance & Westwick, architects, Mansfield; Messrs. Moore & Son, builders, Mansfield.

Monkton.—New school; Mr. W. Reid, archi- tect, Monkton.

Nanthir.—Fifty houses; Mr. Sansome, builder, Blaengarw.

Newcastle-on-Tyne.—Building Dove House, also business premises, Northumberland-street; Mr. Henry Gibson, architect, Dean street, Newcastle-on-Tyne.

Newcastle (Staffs.).—Business premises, also new premises for Messrs. Coop & Co., Ltd.; Mr. H. Booth, architect, 42, Regent-street, Haslingden; Messrs. Broadhurst & Son, builders, High-lane, Burslem.

Old Whittington.—County school; Mr. J. H. Beckett, builder, Mansfield, Notts.

Oswestry.—Almshouses (1,400l.); Mr. J. C. Vaughan, builder, Oswestry.

Penrith.—Grammar school; Messrs. Harrison & Ash, architects, Newcastle-on-Tyne.

Perry Barr (Birmingham).—School; Mr. Hutchings, County Hall, Stafford.

Port-Glasgow.—Bank (8,000l.), for the Union Bank of Scotland; Messrs. George Arthur & Son, builders, Airdrie.

Redditch.—School (6,425l.); Mr. A. V. Rowe, architect, care of Mr. A. W. Priestley, Secre- tary, Education Committee, Worcestershire County Council, Worcester.

Rhosddu.—New church; the Vicar, St. James', Rhosddu.

Rochdale.—Alterations to wood mill for Messrs. A. Mosley & Sons.

Ropley and Sholing.—Schools; Mr. W. J. Taylor, The Castle, Winchester.

South Crosland.—Extensions and additions to Cocking Steps Mill for Messrs. John Wigley & Sons.

South Shields.—Two school departments, Stanhope-road (8,450l.); Mr. J. L. Miller, builder, Albion-road, North Shields.

Southwick.—Isolation hospital; Surveyor, Southwick Urban District Council.

Stoke-on-Trent.—Electric power station (5,120l.); Mr. Wardle, builder, Longport, Stoke-on-Trent.

Viewforth.—School (8,000l.); Mr. J. A. Carfrae, architect, 3, Queen-street, Edinburgh.

Walsall.—Business premises, Park-street; Messrs. Hickton & Farmer, architects, Bridge- street, Walsall.

Walton (near Peterborough).—Factory for Messrs. Frederick Sage & Co.; Mr. A. W. Ruddle, architect, Peterborough; Mr. J. Cracknell, builder, Peterborough.

Warrington.—The following plans have been passed:—Office, etc., off Longford-street, for the Warrington Steel Foundry Company, Ltd. Garage, Powell-street, for Messrs. J. Patter- son & Sons. Extensions to works, Bawsey-road, for the Warrington Wire Rope Company.

Winchcombe.—Proposed twelve houses, Greet road (3,000l.); Mr. T. Smith, Surveyor, Winchcombe Rural District Council.

Wood End (near Birmingham).—Residence; Mr. B. J. Emery, architect, 109, Colmore-row, Birmingham.

Woodlands.—Church (7,000l.); Messrs. Mullins & Richardson, builders, 5, Shotton- street, Doncaster.

THE LATE MR. JOHN SHAW.

The late Mr. John Shaw, of Wirksworth, Derbyshire, stone merchant, of the firm of Messrs. Bowne & Shaw, who died on July 8, aged 90 years, was one of the pioneers of the limestone quarrying industry in that county. His estate is of the gross value of 55,590l., with net personality sworn at 22,841l.

* See also our list of Competitions, Contracts, etc., on another page



NURSES' HOME AND SHORT-PERIOD LUNATIC WARDS, HACKNEY UNION INFIRMARY.

THESE buildings are about to be erected on vacant land adjoining the Infirmary, and approached by a private road dividing the latter from the Workhouse. The main part of the lunacy wards is one story in height, with a second story containing quarters for male nurses above the centre of the block, the staircase approach forming a division between the accommodation for male and female lunatics. Below this building is a heating chamber working both blocks. The nurses' home has a subway connexion from the infirmary passing beneath the lunacy wards. The centre portion of the ground floor is devoted to sitting-rooms for the nurses and sisters; the remainder of this floor and the whole of the upper stories being devoted to nurses' bedrooms, bathrooms, boxrooms, and linen storage; 101 bedrooms in all are provided. Both buildings will be of fire-resisting construction. Airing yards for male and female lunatics occupy the space east of the lunacy wards, west of which is the male officers' recreation-ground. The space on the west of the nurses' home is devoted to a nurses' recreation-ground. A cycle store will be provided as a detached building against the boundary wall. The tender of Messrs. F. & T. Thorne, of Poplar, amounting to 19,460*l.*, has been provisionally accepted for the work. The architect is Mr. W. A. Finch, of 76, Finsbury-pavement, E.C.

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

THE Seventh Report of the Royal Commission on Sewage Disposal, just issued, seems to possess, in some respects, features of wider interest than those previously published, and for that reason may appeal to a larger public than is usual with works of this character, however important the subject matter may be to the body politic.

Naturally, anything emanating from such a source as the volume under consideration will be of interest to those more professionally concerned in the science of sewage "treatment" and disposal, embracing, as it does, within that category not only sewage and municipal engineers, chemists, and bacteriologists, but municipal and public health officials generally. This Report will, however, doubtless be of interest to a wider public, and even the scientifically-disposed "man in the street" will find much to attract him in the descriptions of the means used for the unveiling of some of Nature's secrets which this publication contains, and may consequently welcome any matter calling his attention thereto.

The just issued Blue Book—Volume II, Appendices, Part I.—contains the minutes of evidence, and very detailed reports to the Commission in reference to growth of green seaweeds in sewage-polluted estuaries; though, on looking more fully into the matter, it is realised that pollution can similarly take place in the open waters of the sea coasts. The subject possesses at least a threefold aspect, because, not only has it a bearing

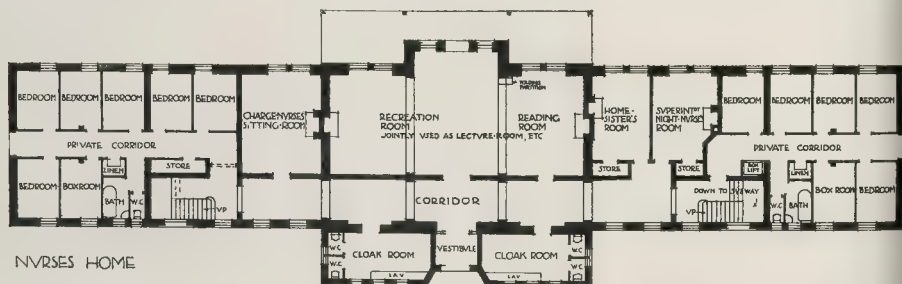
upon the discharge of crude sewage or perfectly "treated" effluent into estuaries and the possibility of detrimentally affecting the shores upon which the various currents may carry it, but there is in such a case consequent interference with the amenity of riparian communities and private owners, and, in addition, the pollution of any fish layings and other infringements of the Rivers Pollution Prevention Act, 1876, which applies to the United Kingdom.

As regards the legislative aspect of the subject, it has to be admitted that, although some five-and-thirty years have passed since the 1876 Act was placed upon the statute book, yet even now scientific knowledge does not enable satisfactory compliance with requirements in every case, and the example before us exemplifies this.

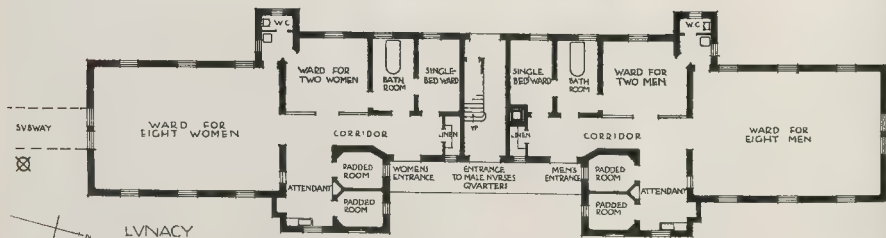
The present publication is of especial interest to local sanitary authorities where areas are situated either upon the sea coast or on estuaries or arms of the sea, because of the effect of the discharge of crude sewage or of effluent upon the water therein; and, further, the consequences of their reaching neighbouring coasts.

Briefly, the Report, minutes of evidence, and the numerous tables which it also contains, concerns the action both of "treated" and "treated" sewage upon water, in estuaries, and on the sea coast, the evidence and experiments, whilst dealing more especially with the waters of Bel Lough, also included experiments in the vicinity of the Giant's Causeway and on Devonshire coast.

This work originated consequent on a serious effluvia nuisance which had occurred



NURSES' HOME



LUNACY WARDS

Hackney Union Infirmary: Nurses' Home and Lunacy Wards.

Mr. W. A. Finch, Architect.

years in Belfast Lough, and which led to the Belfast Corporation Act, 1899, containing provisions under which the Corporation provided works, within three years, for the proper purification of the sewage of the city. Circumstances, which the following perhaps explain, have militated against these requirements.

Up to then the only "treatment" which Belfast sewage had received was by screening and sedimentation, a process still carried out in decision as to the most satisfactory method to employ to prevent a recurrence of nuisance.

Nuisance in question, it had been established by investigation and experiment, could proceed entirely to rotting green seaweeds, chief of which being the *Ulva latissima*. In this class of seaweed can grow in sea water, there seems to be every indication that the growth is remarkably tardy when compared with that in sewage-polluted sea.

The spring and summer months are conducive to its growth (experiments showed increase of 25 per cent.), and these seasons coincide with the periods of greatest nuisance from pollution of all kinds. The *Ulva* taken from mudbanks in Belfast, the chief nursery there of this species (the algae, and where the sea water flower which is polluted to the extent of 1 per cent with Belfast sewage (as measured by the alkaline nitrogen), was found to contain 10 per cent of sulphur, as compared with 1 per cent in sewage sludge.

It may be mentioned that Professors Lettis and Lettis, and others, are of opinion that the growth of sewage is not likely to be needed in most cases of seaside pollution at a measurable distance from the outfall. The opinion of Professor Adey, the author of the nuisance in Belfast Lough is that the putrefaction in the presence of sea of marine algae, the growth of which is stimulated and promoted by sewage.

Ulva latissima grows luxuriantly in sewage-polluted water, but, curiously, it is but little where there are great quantities of sewage as at an outfall, because it could not exist there; it would, in fact, be red.

It seems no doubt but that not only water at places in the British Isles, but on the Continent, the presence of a kind of green seaweed, the *Ulva*, is evidence of sewage pollution. At the same time it seems clearly established that sewage is also conducive to the growth of *Ulva*.

It appears that there is a decidedly interesting connection with the *Ulva* in that it requires something to which to attach itself, and besides being found on rocks and solid bodies they show a predilection for the shells of mussels (either dead or alive). Mussels attach themselves to "byssus" threads, which they throw out. Mussels are often found in polluted water; indeed, they seem most prolific there, and appear to deliberately attach themselves to the *Ulva*.

Professor Lettis suggests some sort of symptom of the *Ulva* and the mussel that eats the small creatures which are killed by the mussels.

Situations where sewage effluents have been discharged into sea water there seems indication that the removal or destruction of mussel beds will bring about the cessation of the growth of the *Ulva*, for the production of which they rear nurseries, and thus prevent the rotting of the *Ulva* and consequent nuisance.

Persons occupying lands in the vicinity of *Ulva* growth in Belfast Lough take in amount away in carts to put on the manure.

A difficult point to determine, however, means to employ to get rid of the nuisance.

Experiments at Belfast with sulphate of copper on an area of 37 acres densely covered with mussels, and where *Ulva* had increased their annual growth, had no last effect. Where mussels, however, were present in trenches, the particular area has, in the words of Mr. H. A. Cutler, M.Inst.C.E., Belfast City Surveyor, "practically ceased to be a nursery for growing weed, and that the mud has disappeared."

With regard to the effect of clearing off mussels in greatly reducing the growth of *Ulva latissima*, Southend is an interesting and useful case in point, for, as a result of such clearance, the *Ulva* was washed away by the tides.

The subject is one to which much knowledge has been added by the investigations of the Royal Commission, but its labours should by no means end with the Report just issued, for it is a matter of much importance to all sanitary authorities whose areas are situated on estuaries and the sea coasts, as well as to riparian owners and proprietors of edible shellfish layings so situated.

HOUSING IN MIDDLESEX.

DR. C. W. F. YORKE, the Medical Officer of Health for Middlesex, gives some interesting information in his annual report, which has just been issued, with regard to the housing question in the county. He summarizes reports which have been received from the district medical officers of health in relation to the Housing and Town Planning Act, and the question generally, as follows:—

Acton.—Dr. Thomas states that it is proposed early in each year "to draw up a list of houses which have shown an excessive mortality and a high infantile mortality in the previous year, and to these will be added others which, for some special reason, e.g., unusual incidence of infectious disease, appear to need inspection." In commenting upon some of the streets inspected he states:—"It will be observed that some of the streets have been comparatively recently erected, and yet the percentage of sanitary defects in these houses is almost as high as in the older property."

Brentford.—Dr. Dott states that under the Housing and Town Planning Act it has been found possible to deal more expeditiously with insanitary property.

Chiswick.—The system previously in force here has needed but little alteration to comply with the requirements of the regulations under the Act. Attention is drawn by the Medical Officer of Health to houses in Essex-place, which, at the date of his report, were uninhabitable.

Edmonton.—Closing orders under sect. 17 of the Housing Act were made as regards eighteen houses. Six houses were otherwise closed and fifteen houses were demolished by the owners.

Enfield. Action has been taken for instituting systematic house inspection. During the year four houses were closed.

Finchley.—The system of house to house inspection previously carried out practically meet the requirements of the regulations under the Act.

Furn Barnet.—Dr. Sprent writes that the housing accommodation in the district is adequate.

Hampton.—The housing accommodation is reported to be adequate. Sixty-five houses erected by the Council a few years ago under Part III. of the Housing Act "have been almost fully occupied during the whole of the year."

Hampton Wick.—Arrangements have been made to carry out the regulations in an efficient manner. Several houses were voluntarily closed by owners after notice had been served on them to carry out needful repairs.

Hayes.—In this district the housing question assumed an urgent condition, owing to an influx of workers, and the fact that many houses are in an insanitary state. The district medical officer writes that the housing accommodation is very inadequate. Owing to several large factories having been built at Botwell, cottage property of a rental of from 5s. to 7s. 6d. per week were in great demand.

Numbers of workers at the factories reside outside the district. In the houses in that portion of the district near the factories there was considerable overcrowding. A number of cottages were in an insanitary condition, but before anything could be done in the way of closing them other accommodation would have to be provided.

Hendon (Urban).—In commenting on the class of houses which are being built in the district, Dr. Andrew says they are not specially suited to persons of the working class, and that the question of erecting accommodation for same has been for some time under the consideration of the Council.

Heston and Isleworth.—Dr. Buchan, referring to the recently-issued regulations of the Local Government Board as to inspection of houses, urges that additional powers are needed in connexion with (1) the absence of proper storage for and the preparation of food; (2) the paving and drainage of courtyards common to more than one house; and (3) the cleansing

of cellars, etc. He suggests draft clauses for insertion in a local Bill in 1912.

Uxbridge Northwood.—In May the Council received plans for the development of certain areas in the district; they then considered the advisability of a town planning scheme. The Housing and Town Planning Committee reported in August. The Council then gave the Committee authority to prepare all necessary plans, and call Conferences, and do such other acts as might be necessary to make application to the Local Government Board for authority to prepare a scheme. On November 30 the first Conference of landowners was convened. In December plans and evidence were ready to be submitted to the Board, and at the close of the year the Council were only waiting for an inquiry to be held by the Board as to the advisability of preparing a scheme.

Southall-Norwood.—There is ample accommodation in the district for the working classes. **Southgate.** Thirty-four workmen's cottages in Tottenham-road have been erected by the Council.

Staines (Urban).—The housing accommodation is adequate for the needs of the district.

Sunbury.—There is no lack of accommodation for the working classes, houses being unoccupied.

Twickenham.—Closing orders were made in regard to twenty-three houses. Ten of these had been demolished, and the remainder were rendered fit for habitation.

Uxbridge (Urban).—Dr. Lock says that the death rate in the parish compares unfavourably with an adjoining district, and he proposes to make recommendations to his authority for the improvement of the housing conditions. There is need of cottages at a rental of under 6s. per week.

Wembley.—One house was closed, and in three other instances the owner closed houses on learning that the local authority proposed to take action.

Willenden.—Thirty-five notices were served under sect. 15, and six under sect. 16 of the Housing Act, 1909. Four closing orders under sect. 17 were issued.

Wood Green.—Nine houses were repaired and made fit for habitation, and sixteen houses were demolished by the owners without the local authority having recourse to the powers under the Housing Act.

LONDON COUNCILS.

Shoreditch.—The Lighting Committee have decided to convert all the street lamps north of Old-street (1,055 in all) from gas to electricity. The capital cost of laying about fourteen miles of cables in 160 streets of sufficient size to serve not only for the street lamps, but to meet any reasonable demand likely to arise, is put approximately at £3,385, while the cost of converting the lamps for electric lighting is estimated at 65s. The work is to be done gradually.

Wimbledon.—The following plans have been passed:—Britannia Incandescent Mantle Company, Ltd., additions, rear of mantle works, Ravensbury-road; Messrs. Holloway Brothers, additions to hospital, Thurston-road; Mr. W. Miles, additions, "Kelvinville," Malcom-road; Messrs. Ogden, Sons, & Olley, motor garage, Grosvenor-hill; Mr. Melville S. Ward, additions, "Rusthall," Parkside.

LAW REPORT.

Breach of Building By-Laws: Doncaster Architect Fined.

AN interesting case was heard at the Doncaster Borough Police Court on Monday, when Mr. Thomas Henry Johnson, of Priory-place, one of the best-known architects and surveyors in the town, was summoned for two offences against the Doncaster Corporation Building By-Laws.

The Town Clerk, who prosecuted on behalf of the Corporation, stated the offences consisted of building contrary to plans which had been approved by the Sanitary Committee, and of making substantial additions to a building without submitting any plans at all.

In March last Mr. Johnson submitted plans for a shop and temperance hotel in Frenchgate. The plans showed walls 9 in. thick, whereas they should have been 15½ in. thick.

Amended plans were passed on March 28, but on August 11 the Borough Surveyor discovered that the third story of the building had only a 9-in. external wall instead of the 14-in. shown on the plan. Over and above this a very substantial addition had been made to the premises, six bedrooms, bathroom, and water-closet having been added without any plans being submitted. The Surveyor wrote, asking the defendant to discontinue operations, but the work had continued up to the present time. He asked the Bench to inflict a substantial

penalty, and also a continuing penalty from August 11.

Mr. Williamson, of Retford, who defended, pointed out that it was unlikely in a building which was to cost 7,000l. a man would wilfully break the by-laws in order to save 15l. The mistake was due to a series of unfortunate circumstances, and in the negotiations defendant had always said he was willing to put right anything that was wrong. Owing to a change of clerks in defendant's office the wrong plans were sent to the contractor, and defendant was actually paying for a 14-in. wall whilst a 9-in. wall had been erected. He was still prepared to put the error right.

The Bench imposed a fine of 2l. 10s. in each case.

FOREIGN AND COLONIAL.

Demand for Concrete Mixers in Spain.

According to an American Consular Report, large quantities of concrete are being used in Seville, where the operation of mixing is done by hand; but the opinion is expressed that machinery would find ready sale if introduced by enterprising firms. Another reason making this outlet a promising one for makers of concrete mixers is, that in the preparatory work and building now going on, and the improvements in the city that will be made for the Spanish-American Exhibition to be held in Seville during the year 1914, concrete will find very extensive use.

Collapse at Viterbo.

A correspondent of the *Morning Leader* reports that on the 24th ult., at Viterbo, near Rome, seven houses suddenly collapsed "as if they were a pack of cards." Several persons were seriously injured. No earth tremor was felt, nor was there any other apparent cause of the disaster. Civil engineers sent by the Government say that many other houses threaten to collapse and must be abandoned.

Progress of Chicago.

According to a report from the British Consul in Chicago, the building figures of that city for 1910 show a remarkable increase over those of 1909, and are the largest hitherto recorded. Permits were issued during 1910 for construction of 11,408 buildings, involving a total outlay of 19,353,125l., as compared with 11,241 buildings, costing 18,644,900l. in 1909. Improvements effected by the city of Chicago included an expenditure of 429,400l. on the new City Hall during 1910; also 100,000l. on paving repairs.

New Fruit Market, Milan.

The spacious market opened this year in Milan replaces several fruit and vegetable markets previously held in the centre of the city. The new buildings cover a site about 1,500 ft. long by 650 ft. wide, in communication with the goods stations by means of a branch line. The warehouses are disposed in the form of two concentric circles around the central buildings. The interior warehouses are reserved for wholesale business, and those in the outer circle are devoted to retail trade, conveniently arranged shops being provided for occupation by dealers. The inner buildings are spacious steel frame sheds, 65 ft. wide by about 26 ft. high, and the outer buildings are of masonry construction. The interior of the new market includes a hotel and a restaurant, as well as stables for the use of cultivators who send in their produce by road, and are obliged to remain some time in the city. The market was established by the municipality, and forms one of the most useful among the various improvements effected within recent years in the commercial capital of Italy.

TRADE CATALOGUES.

We have received from the "Peerless Heater" Company, of 70 and 71, Bishopsgate-street Within, a booklet describing the "Peerless" gas-heated kitchen boiler. It is claimed that the "Peerless" will heat more water and keep it hot, on a smaller consumption of gas, than any other heater. The parts are simple, and there is little to get out of order. For country house use, where there is no gas, a gasoline burner may be attached, and the results are precisely the same as where gas is used. The extremely moderate price at which it is supplied, and the sound principles and simplicity of its design, should ensure for it a steady and increasing popularity.

Messrs. Mander Brothers, of Wolverhampton, and Noel-street, Oxford-street, London, W., forward us a booklet dealing with their well known decorative specialities. Specimens are given of this firm's well-known "Suffield" greens, which will, it is claimed, stand all weathers without loss of colour. It is made in 14

ten shades, and, when mixed with white, is susceptible of many rich and beautiful tints. The "Olsina" water paints are particularly deserving of the attention of our readers. Besides being specially adapted for schools, hospitals, and public and buildings generally, they can also be tried on ironwork, such as radiators, hot-water piping, steamship funnels, etc. "Olsina" is made in one hundred different shades, and may be varnished to form a suitable wall decoration for bathrooms. Among the firm's other specialties we desire to call attention to the "Matsine" transparent colours, which may be used as a stain on new woodwork, as a "scumble" on painted work (by this method, when applied on different ground colours, the characteristics of many rare woods may be reproduced), or as a glaze on the top of old grained work. Messrs. Mander's varnishes are well enough known to need no encomium from us.

PATENTS.

APPLICATIONS PUBLISHED.*

11,246 of 1910.—Domingo Desplats: Device for retaining doors, windows, and the like in an open position.

18,715 of 1910.—James McLellan: Apparatus for simultaneously heating and coating the surfaces of stone, brick, earthenware, concrete, metal, and hardware articles of all kinds with metals and vitreous materials.

18,716 of 1910.—James McLellan: Process for coating the surfaces of stone, brick, earthenware, concrete, metal, and hardware articles of all kinds with metals, vitreous materials, and the like.

19,003 of 1910.—William John Dunn: Door locks.

20,782 of 1910.—Joseph Freeman Goddard: Concrete and like compounds.

21,322 of 1910.—William Duggan: Apparatus for closing doors and gates.

21,600 of 1910.—Edgar Newton: Means for the connexion and fixing of taps for baths, basins, sinks, and the like.

22,866 of 1910.—Gottfried Obrist, Wilhelm Obrist, and Alphons Obrist: Uniting of glass panes.

23,257 of 1910.—William Henry Richardson: Air inlet valves for drains.

24,643 of 1910.—Otto Buchholz and Alfred Buchholz: Guard for the top openings of the waste pipes of roofs.

86 of 1911.—William Julius Baltzer: Forming concrete bodies in moulds.

984 of 1911.—Professor Dr. Wilhelm Schneidewind and Dr. Dietrich Meyer: Apparatus for opening and closing doors.

6,665 of 1911.—Heinrich Christophery: Door or window handles.

7,075 of 1911.—Frank McMurray Sawyer: Construction of walls, columns, and the like.

7,575 of 1911.—Frank Hine Willis: Fire resisting floors.

8,025 of 1911.—Ludwig Schiff: Door-securing devices.

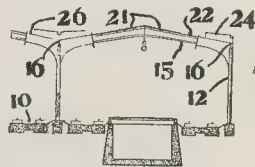
9,634 of 1911.—Frederick James Marchmont and Edward John Farrell: Wall ties.

11,532 of 1911.—Erwin Marshall Hilton, Albert Veil, and Alfred Henry Lovignour: Means for securing sheets of glass to window frames and the like.

SELECTED PATENTS.

7,567 of 1910.—Alfred Lee Moorshead: Rail way station roofs.

This relates to railway stations wherein the roof is supported on columns placed between adjacent tracks, so as to leave the platforms unobstructed, and a minimum space is provided above the engine funnels so that the smoke may quickly escape. Subways for goods or local trains may be built under the platform. A sectional elevation of one form of roof is shown, also an enlarged detail. The columns



7,667 of 1910.

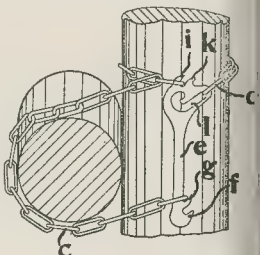
12 are arranged between the pairs of tracks 10, and support the roof principals 15.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

Baffle-plates deflect the smoke through tubes 26. Skylights 21 extend on each side of the ridge of each span, with or without impervious roofing. The valleys are covered by portions 24, which are carried by brackets on the longitudinal girders. Rainwater is drained off by gutters leading to fall adjacent to alternate columns. The framework consists of steel plates and bars riveted together and covered with concrete.

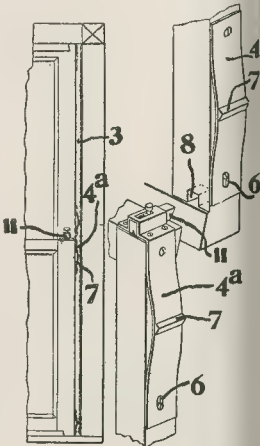
7,802 of 1910.—Ludwig Pollaert: Scaffold.

This relates to a scaffold-securing device wherein the scaffold poles are secured together by chains c, each having one link d permanently connected to a slotted clamping e, the chain being passed round the vertical pole, hooked over a lug on the upper end of the bar, and then passed round the horizontal

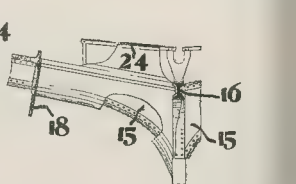


7,802 of 1910.

pole and hooked over a lug on the lower end of the bar, the weight of the horizontal actuating the lower end of the bar to the chain around the poles. Adjustment of poles of different diameters is effected by J-shaped slot l, and the pairs of lugs m and g, f.



8,442 of 1910.



8,442 of 1910.—Kenneth Faro Deskins: Window holders.

This relates to window frames wherein the sashes are held in any position by

PATENTS.—Continued on page 9

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 9.—**Eforest-fach.**—Parish hall, to cost 1,200. Premiums 25, 10, and 5. Particulars from H. Plant, 14, Fisher-street, Swansea.

SEPTEMBER 9.—**Fontenay.**—SWIMMING-BATH.—Open to architects of the West Riding Yorkshire. Particulars from the Borough Engineer.

SEPTEMBER 12-25.—**Athens.**—COURT OF JUSTICE. An international competition is instituted by Ministry of the Interior, for the erection of a building, to cost 160,000. The Official Rules may be seen at the Library of the B.A.

SEPTEMBER 15.—**Lowestoft.**—SCHOOL.—The Lowestoft Education Committee invite designs and specifications for a new school, to cost 10,000. Three premiums are offered: 20, 10, and 5. See advertisement in issue of June 16 for further particulars.

SEPTEMBER 15.—**Manchester.**—LIBRARY AND GALLERIES.—Limited to the ten selected competitors in the first competition. See issue of June 23, p. 780.

SEPTEMBER 14.—**Eastington R.D.C.**—100 model sets for Merton Colliery, Durham. 24 per cent. on net cost to successful architect.

SEPTEMBER 7.—**Barnesley.**—EXTENSION OF THE BARNESLEY T.C. invite drawings for proposed extension of Public Baths. Three premiums are offered—500, 300, 200. See advertisement in issue of August 11 for further particulars.

SEPTEMBER 7.—**Evesham U.D.C.**—Designs for building out site and erecting thereon three small houses. Particulars from the Clerk to the Council.

SEPTEMBER 12.—**Coseley.**—Plans are invited for a school to accommodate about 200 children. Particulars from the Education Officer, Coseley, near Aston.

SEPTEMBER 14.—**Bristol.**—ALTERATIONS IN THE MID HOTEL.—Particulars from Mr. E. Atkins, 44, Corn-street, Bristol.

SEPTEMBER 25.—**Salford.**—Extension of office accommodation on Workhouse site at Eccles New. Premiums 200, and 100. Particulars from Board of Guardians, Salford. Limited to architects practising in Salford district only.

SEPTEMBER 30.—**Holland.**—STAINED GLASS WINDOW.—Designs are invited for a stained glass window to be erected in the University at Oxford. See advertisement in issue of June 9 for further particulars.

SEPTEMBER 31.—**Marblebone.**—NEW MUNICIPAL BUILDINGS.—Premiums of 1000, 750, 500. The designs of Mr. Henry T. Hargrave, F.R.I.B.A. Set off September 1 of issue of July 14 for further particulars.

SEPTEMBER 1.—**City of St. Petersburg.**—CONTEST TO ALEXANDER III.—Particulars in our issue of August 13, 1910.

SEPTEMBER 30.—**Cardiff.**—TECHNICAL INSTITUTE. The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 1250, 750, and 500, to Mr. E. T. Hall, assessor.

SEPTEMBER 30.—**Hastings.**—EAST SUSSEX HOSPITAL.—The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. advertisement in issue of August 25 sets out the particulars. Premiums of 1250, 750, and 500. Mr. E. T. Hall, assessor.

SEPTEMBER 29.—**Glasgow.**—DESIGN FOR A DOCK.—Designs are invited (Alexander Thomson, 37, Glasgow, City). The Government of the monthwealth of Australia invite competitive designs for the laying out of this Federal capital. See advertisement in issue of September 1 for further particulars.

SEPTEMBER 1, 1912.—**Dusseldorf.**—A plan for the reconstruction of the City of Dusseldorf. Premiums 1000, 500, and 250. Copy to be seen at the application to Chief Burgomaster, Dusseldorf.

SEPTEMBER 1.—**Nottingham.**—BAPTIST CHURCH REPAIRS.—Limited to Nottingham architects. Particulars from Messrs. Borske & Jackson, 10, King-street, Nottingham.

SEPTEMBER 1.—**Rochdale Infirmary.**—EXTENSIONS. See advertisement in issue of August 18 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 9.—**Aberdew.**—BUILDINGS.—Erection of new farm buildings, etc., at the Court Farm. Plans and specification from Mr. Thomas Roderick, architect, Clifton-street, Aberdeen.

SEPTEMBER 9.—**New Tredegar.**—ALTERATIONS, ETC.—For alterations, etc., to the Queen's Hotel, Tredegar. Specification from Mr. George Kenhole, M.S.A., Bargoed.

SEPTEMBER 9.—**Ramsgate.**—EXTENSION.—For the extension of the manual room at the school. Specifications by the Committee's Architect, Mr. Wilfred H. Robinson, of Canton House, Westminster, seen at the offices of the Local Secretary, Mr. A. R. R. Franks, Public Library, Ramsgate.

SEPTEMBER 11.—**Abercromby.**—HOUSE. Alteration of a house. Plans from Mr. J. T. Williams, architect, Napier-street, Cardigan.

SEPTEMBER 11.—**Belfast.**—WAREHOUSE. Erection of new warehouse premises in Albert street and Fox-row. Plans and specifications with Messrs. Blackwood & Jury, M.S.R.I.A.I., architects, 41, Donegal-place, Belfast, and quantities from Mr. S. C. Hunter, Scottish Provident-buildings, Belfast, on deposit of 25, 25.

SEPTEMBER 11.—**Port Dinorwic.**—HOUSE. Erection of a dwelling-house. Plans with Mr. Llewellyn Lloyd Jones, architect and surveyor, Tower-buildings, Carnarvon.

SEPTEMBER 12.—**Exeter.**—ADDITIONS, ETC.—For alterations and additions at the Workhouse laundry. Plans and specifications seen, and quantities from the architect, Mr. R. M. Challice, 14, Bedford-circus, Exeter.

SEPTEMBER 12.—**Gwynn-ae-Gurwen.**—REPAIRS, ETC.—Repairs and alterations of Carmel Congregational Church. Specifications and plans with Mr. D. Morgan, architect, Brynhyfryd, Gwynn-ae-Gurwen.

SEPTEMBER 12.—**Newton Abbot.**—WOODSHED, ETC.—Erection of a woodshed and also construction of a cold-chamber at the Workhouse. Plans and specifications with the architect, Mr. Segar, Union-street, Newton Abbot.

SEPTEMBER 12.—**South Barton.**—WORKS.—For carrying out certain works at the dwelling house and outbuildings. Plans and specifications from Mr. James Crockett, F.R.I.B.A. architect and surveyor, Stuckey's Bank chambers, Exeter.

SEPTEMBER 13.—**Wigan.**—SHED.—Erection of a cart-shed at Green Side Farm, Billinge-Higher End. Plans and specification with Mr. H. Gordon Ackerley, Clerk, 9, Victoria-buildings, King-street, Wigan.

SEPTEMBER 14.—**Chilpenham.**—ADDITIONS, ETC. Alterations and additions at Castle Coombe Council School. Plans and specifications, on deposit of 10, 10, from Mr. J. G. Powell, County Surveyor, Trowbridge.

SEPTEMBER 14.—**Dowla.**—ALTERATIONS.—For alterations to Pantecollos House. Plans and specifications seen, and quantities from the architect, Mr. Thomas Roderick, Clifton-street, Aberdeen.

SEPTEMBER 15.—**Barrow-in-Furness.**—POST OFFICE. Extension of post-office. Drawings, specification, and contract with the Postmaster, Barrow-in-Furness. Quantities on deposit of 10, 10, from the Secretary, Post Office of Works, etc., Storey's-gate, London, S.W.

SEPTEMBER 15.—**Bellaghy.**—TOWER.—Erection of a bell tower to the Catholic Church. Drawings and specification at the Parochial House, Bellaghy, Castledawson, and with Mr. J. V. Brennan, architect, Belfast Bank-chambers, North-street, Belfast.

SEPTEMBER 15.—**Manchester.**—TANK.—Erection of a cast-iron tank at Gaythorn Gasworks. Specification from Mr. F. A. Frith, Superintendent, Gas Department, Town Hall, Manchester. Drawings with Mr. J. G. Newbigging, M.Inst.C.E., Engineer, Rochdale-road Station, Manchester.

SEPTEMBER 16.—**Birstall.**—HOUSES.—Erection of three terrace houses. Drawings and specifications seen, and quantities from Messrs. Joseph Firth & Son, architects, 67, Vulcan-road, Dewsbury.

SEPTEMBER 16.—**Kempston.**—ADDITIONS.—Erection of additions to Council school. Drawings and specifications seen, and quantities, on deposit of 10, 10, from the County Surveyor, Shire Hall, Bedford.

SEPTEMBER 16.—**Nantgarw.**—SHOPS, ETC.—Erection of two shops and house. Plans and specification from Mr. W. D. Thomas, architect and surveyor, Porth.

SEPTEMBER 16.—**Nottingham.**—PAVILION, ETC.—Erection of a pavilion, urinal, etc., at Byamore-road Recreation Ground. Plans and specifications and quantities from the City Architect, Mr. F. B. Lewis, Guildhall, Nottingham, on deposit of 10, 10.

SEPTEMBER 16.—**Northcote.**—RECTOR.—Erection of a rectory at Newton. Plans and specification seen, and quantities, on deposit of 25, 25, from Messrs. George F. Lambert & Son, architects and surveyors, Bridgend.

SEPTEMBER 16.—**Watts.**—SCHOOL.—Erection of a new mixed and infants' school. Plans and specification seen, and quantities from Mr. John Bain, F.R.I.B.A., C.C. Offices, Newport, Mon., on deposit of 25, 25.

SEPTEMBER 18.—**Ripley.**—HOSPITAL.—Erection of a cottage hospital. Quantities, on deposit of 10, 10, from Mr. K. Argle, architect and surveyor, 36, Oxford-street, Ripley, Derby.

* SEPTEMBER 18.—**Stepney.**—CINEMATOGRAPH ENCLOSURE.—The Stepney B.C. invite tenders for a cinematograph enclosure at their Goulston-street Baths. See advertisement in this issue for further particulars.

SEPTEMBER 19.—**Bridlington.**—STATION.—For improvements at station, for the North-Eastern Railway Company. Plans and specification seen, and quantities from Mr. W. Bell, the Company's Architect, at York.

SEPTEMBER 19.—**Durham.**—SCHOOLS.—Alterations and improvements at Ford and Blaydon Council schools; erection of caretakers' houses at Greenland, South Moor, and Dawson Colliery schools. Plans and specifications seen, and quantities from Mr. A. J. Dawson, Clerk to the Education Committee, Shire Hall, Durham.

SEPTEMBER 19.—**Sal.**—BATHS.—Erection of Public Baths. Plans and specification seen, and quantities, on deposit of 10, 10, from Mr. W. H. Mitchell, A.R.I.B.A., architect, 94, Market-street, Manchester.

SEPTEMBER 19.—**Whalley.**—ADDITIONS.—Erection of additions at the Sanatorium. Drawings and bills of quantities from the Borough Engineer, King-street West, Wigan.

SEPTEMBER 21.—**London.**—ENGINEER'S HOUSE, ETC.—The Guardians of Mile End Old Town invite tenders for enlargement of Chief Engineer's house, and erection of lavatories, etc., on a Hancock-road premises, Mile End, E. See advertisement in this issue for further particulars.

SEPTEMBER 25.—**Barnes.**—CONVENIENCES.—For building two sanitary conveniences (above ground) at Mortlake. Drawings and specification seen, and form of tender from the Engineer and Surveyor, Council House, High-street, Mortlake, S.W.

SEPTEMBER 25.—**Bristol.**—TRANSIT SHED.—Construction of a transit shed on the site of the west wall of the Royal Edward Dock, Avonmouth. Deposit of 50, to Mr. W. W. Squire, Engineer, Engineer's Office, Cumberland-road, Bristol.

* SEPTEMBER 26.—**Epsom.**—OPERATION WARD.—The Epsom Guardians invite tenders for an operation ward at Workhouse infirmary. See advertisement in this issue for further particulars.

* OCTOBER 3.—**Birmingham.**—TELEGRAPH STORES.—The Commissioners of H.M. Works and Public Buildings invite tenders for the finishings (second) contract at block C, Birmingham Telegraph Stores. See advertisement in this issue for further particulars.

NO DATE.—**Farnham.**—ADDITIONS.—For additions to the Wesleyan schoolroom. Plans, etc., to be seen at the schoolroom, Mr. Wonnacott, Devonshire House, Fairfield, Farnham.

NO DATE.—**Kettering.**—CHURCH.—Erection of Carey Memorial Church. Messrs. Conner & Williams, architects, Central-chambers, Market-place.

NO DATE.—**Leek.**—SCHOOL.—Erection of a new Council school. Quantities, on deposit of 10, 10, from Mr. Graham Yelford, Director of Education, County Education Offices, Stafford.

* NO DATE.—**London, S.E.**—ARTISANS' DWELLINGS.—Messrs. Palmer invite tenders for two blocks of artisans' dwellings. See advertisement in this issue for further particulars.

NO DATE.—**Merioneth.**—ADDITIONS.—Alterations and additions to Fawcett Council School. Plans, specification, and particulars from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Bala, S.O.

NO DATE.—**Salisbury.**—RESIDENCE, ETC.—Erection of a motor garage and residence. Particulars from Mr. A. C. Bothams, M.S.A., A.M.Inst.C.E., architect, etc., 32, Chipper-lane, Salisbury.

NO DATE.—**Stonehaven.**—COTTAGES.—Erection of six small model cottages. Quantities from Messrs. McMillan, architects, 105, Crown-street, Aberdeen.

ENGINEERING, IRON, AND STEEL.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 8. — **Whimple.** — **BRIDGE.** — For rebuilding the south parapet wall and wing walls and general repairs and fencing at Botley Bridge. Specification from Mr. H. Michelmore, Clerk of the Council, Castle of Exeter.

SEPTEMBER 11. — **Hebburn.** — **BRIDGE.** — Construction of a light steel bridge across the Wallsend and Hebburn Coal Company's railway. Particulars from the Surveyor, Mr. H. Paterson, Council Offices, Hebburn.

SEPTEMBER 16. — **Snydale.** — **HEATING.** — Installation of heating apparatus at the Council school. Specifications from Mr. C. Harris, Education Offices, Knottingley.

SEPTEMBER 18. — **London.** — **HEATING.** — Installation of low-pressure hot-water heating apparatus at the Gainsborough-road School, West Ham. Mr. William Jacques, A.R.I.B.A., Architect to the Education Committee, 2, Fen-court, Fen-church-street, E.C. Deposit of 11.

SEPTEMBER 19. — **Swinton.** — **WELL.** — For sinking a well. Specification, on deposit of 11, from Mr. B. Birks, Engineer and Surveyor, Council Offices, Swinton, Yorks.

SEPTEMBER 20. — **Varna (Sofia).** — **STATION.** — Erection of a power station. Particulars from the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, E.C.

No Date. — **Leake.** — **BRIDGE.** — Construction of new bridge and repairs to two other bridges. Plans and specifications from Mr. G. P. Pearson, P.A.S.I., Surveyor, Sutton Bonington.

FURNITURE, PAINTING, MATERIALS, etc.

SEPTEMBER 8. — **Mardy.** — **PAINTING, ETC.** — For papering, painting, etc., at Mardy Hotel, M.S.A., Rhonda Valley. Specification from Mr. W. D. Morgan, M.S.A., architect, Pentre.

SEPTEMBER 9. — **Hertford.** — **PAINTING.** — For painting Workhouse buildings. Specification seen, and particulars with the Master at the Workhouse, Hertford.

SEPTEMBER 9. — **Jarrow.** — **PAINTING.** — For painting at the fire-station. Specification from Mr. J. S. Weir, A.M.Inst.C.E., Borough Surveyor, Town Hall, Jarrow.

SEPTEMBER 11. — **Newark.** — **PAINTING.** — For repainting premises at the Cattle Market. Specifications with Messrs. Sheppard & Lockton, architects and surveyors, Bargeat, Newark.

SEPTEMBER 12. — **Rhonda Valley.** — **PAINTING.** — For painting, etc., at the Baglan Hotel, Treherbert, Wales. Specification at the hotel.

SEPTEMBER 12. — **Treherbert.** — **PAINTING, ETC.** — For painting, papering, etc., at the Baglan Hotel, Treherbert, Rhonda Valley. Specification from Mr. W. D. Morgan, M.S.A., architect, Pentre.

SEPTEMBER 13. — **Newport.** — **PAINTING.** — For painting the Workhouse. Specification at the Union Offices, Queen's-hill. Mr. A. H. Rees, Clerk.

SEPTEMBER 13. — **Styal.** — **PAINTING.** — For painting, etc., at the Cottage Homes, schools, and houses. Specifications from the Guardians' Offices, All Saints', Manchester. Mr. D. S. Bloomfield, Clerk.

SEPTEMBER 14. — **Blackley.** — **PAINTING.** — For painting outside wood and iron work at the Booth Hall Infirmary. Specifications at the Infirmary. Mr. Edward W. Ogden, Clerk to the Guardians, Union Offices, Cheadam Hill-road, Manchester.

SEPTEMBER 14. — **London, S.W.** — **PAINTING.** — The Lambeth B.C. invite tenders for painting boundary railings and gates at cemetery, Blackshaw-road, Tooting, S.W. See advertisement in this issue for further particulars.

SEPTEMBER 19. — **Edmonton.** — **PORTLAND CEMENT.** — The Edmonton U.D.C. invite tenders for supply and delivery of Portland cement. See advertisement in this issue for further particulars.

SEPTEMBER 23. — **Stanwell.** — **FENCING, ETC.** — The Staines Joint Hospital Committee invite tenders for jarrah wood park pale fencing and iron fencing, with gates, posts, etc., at Stanwell, Middlesex. See advertisement in this issue for further particulars.

No Date. — **Merioneth.** — **PAINTING.** — For painting at Glyndyfrdwy Council School masters' house. Specification and particulars from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth, S.O.

ROADS, SANITARY AND WATER WORKS.

SEPTEMBER 11. — **Blaby.** — **SEWER.** — For extension of a 9-in. sewer. Plans seen, and quantities, on deposit of 11. 18s., from Mr. B. A. Shires, Clerk, 1, Priar-lane, Leicester.

SEPTEMBER 11. — **Evershot.** — **SEWER.** — Laying of new sewer. Plans and specifications seen at the offices of Mr. S. P. Baskett, Solicitor, Evershot.

SEPTEMBER 12. — **Crewe.** — **STREETS.** — For making and sewerage streets. Plans and specifications, on deposit of 11, from Mr. G. Eaton-Shore, Borough Surveyor, Barle street, Crewe.

SEPTEMBER 12. — **Shoeburyness.** — **GRANITE.** — Supply of broken granite. Mr. Frederic Greason, Clerk, 46, Alexandra-street, Southend-on-Sea.

SEPTEMBER 12. — **Swansea.** — **STREETS.** — For private street works. Plan and specification with

the Borough Surveyor, 13, Somerset-street, Swansea.

SEPTEMBER 12. — **Tipton.** — **SEWERS.** — Construction of the sewers. Drawings and specifications, and quantities, on deposit of 3s. 8s., from Mr. Wm. H. Jukes, M.E., Engineer and Surveyor, Surveyor's Offices, Public Offices, 11, Victoria-street, Tipton.

SEPTEMBER 13. — **Littleport.** — **SEWER.** — Laying sewer. Plan and specification with E. B. Claxton, Clerk, Egremont-street, Canvey.

SEPTEMBER 15. — **Falmouth.** — **SEWER.** — Sewage outfall works for Gyllyngvase. Plans seen, and specification and quantities, on deposit of 21. 2s., from the Borough Surveyor, Mr. J. S. Walton, Municipal Offices, Falmouth, Cornwall.

SEPTEMBER 15. — **Rotherham.** — **ROADS.** — Making-up roads. Drawings and specifications, and quantities from the Borough Engineer, Mr. Fredk. J. Commis, 5, Vicar-street, Westminster.

SEPTEMBER 16. — **Widmermere.** — **SEWERAGE.** — For construction of new street and sewerage works. Plans, specifications, and general quantities at the offices of the Council, and quantities, on deposit of 51. 6s., the Council Engineers, Messrs. Wilcox, Raikes, & Reece, 63, New-street, Birmingham.

SEPTEMBER 18. — **Baldon.** — **SEWER.** — Construction of main sewer. Specifications and quantities from Mr. J. Myers, Surveyor, Council Offices, Baldon, Yorks. Deposit of 5s.

SEPTEMBER 18. — **Spennymoor.** — **ROADS.** — Making of roads. Plans and specifications from Mr. C. R. Spencer, Surveyor, Council Offices, Spennymoor.

SEPTEMBER 19. — **Acton.** — **SEWER, ETC.** — Laying pipe sewer and making-up private streets. Plans and specifications seen, and quantities from Mr. F. Sadler, Surveyor, Council Offices, Winchester-street, Acton, W.

SEPTEMBER 19. — **Leith.** — **SEWER.** — Construction of pipe sewer in Blackie road and in New-street. Plans and specifications at the Borough Engineer, Charlotte-street.

SEPTEMBER 20. — **Blaina.** — **MATERIALS.** — Supply of materials. Mr. W. J. Davies, Surveyor, Blaina, Mon.

SEPTEMBER 20. — **Rochdale.** — **STREETS.** — Sewering, levelling, paving, etc., of streets. Plans and specifications seen, and quantities from the Borough Surveyor.

SEPTEMBER 21. — **Blackwood.** — **ROADS.** — Construction of new roads. Plans and specifications seen, and quantities, on deposit of 11. 1s., from Mr. A. F. Webb, M.S.A., Architect and Surveyor, Blackwood, Mon.

SEPTEMBER 23. — **Stanwell.** — **ROADS, ETC.** — Staines Joint Hospital Committee invite tenders for construction of roads and footpaths at well, Middlesex. See advertisement in this issue for further particulars.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Applicants to be invited.
*CHIEF ASSISTANT (EDUC. SURVEYOR'S DEPT.).....	Northampton C.C.	120l. per annum ..	Sept.
*ARCHITECTURAL DRAUGHTSMAN	West Riding C.C.	150l. per annum ..	Sept.
*WOODWORK INSTRUCTOR	London C.C.	120l. per annum ..	Sept.

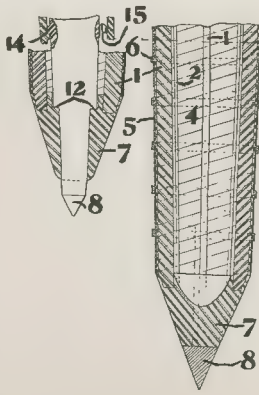
Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, BOARDS, TIMBER, Etc. Great Hall, Winchester House, E.C.	Churchill & Sim ..	Sept. 1
*PLANT, Etc. of ZINCWORK, PLUMB, Etc. 28, BETHNAL GR.-RD., N.E. — On the Premises.	H. W. Smith ..	Sept. 1
*STK. of HOUSEHOLD. CONTR. Etc. 131, HIGH-ST., STRATFORD, E. — On the Premises.	Robson & Perrin ..	Sept. 1
*CONTRACTOR'S STOCK AND PLANT, NORTHAMPTON — On the Premises	Woods & Co.	Sept. 1

PATENTS.—Continued from page 286.

engagement of teeth 7 on bowed springs 4, 4a, mounted on the edges of the sash-stiles with corrugated strips 3 secured on the frame. The springs 4, 4a, are secured at one end to the sash-stiles by screws, while the other ends are secured by screws passing through slots 6 in the springs. On the bottom sash is mounted a spring catch 11 of ordinary construction, sliding in a casing formed by bending over the upper end of the spring 4a, and engaging a recess 8 in the upper sash.

8,488 of 1910.—William John Stewart: Piles. This relates to hollow, wooden, and other piles, which may, after driving, be filled with concrete; the piles are constructed of stout longitudinal ribs 1, alternating with lighter ribs 2, and connected together by means of stays. A light sheathing 4 of wood is connected to the ribs; and on the outside of the sheathing are secured longitudinal pieces 5 of hoop iron, to the exterior of which are fastened hoops 6. The shoe, which consists of a balk of timber 7, having an iron or steel point 8, is attached to the ribs 1, 2, and the sheathing 4, and vertical pieces 5 may also be brought down over the shoe. The pile is driven by means of a core provided with fixed or adjustable horizontal or longitudinal ribs, which

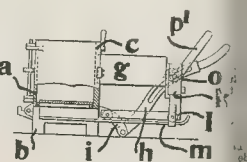


8,488 of 1910.

contact with the lighter ribs of the pile. A solid core 10 projects through the bottom of the pile, and is provided with shoulders 12, with projections 14, 15, for assisting in pulling the pile downwards.

8,737 of 1910.—Robert Lindenthal: Apparatus for moulding concrete blocks.

This relates to improvements in moulding machines for concrete blocks of the type of



8,737 of 1910.

prising a mould frame having hinged top-down sides and sliding cores, guided in apertures in the rear wall. The mould frame

Strong Sheet	20	0	0	11	...	—
Thin	20	0	1	0	...	—
Tin—English Ingots.....	20	0	1	11	...	—

VARNISHES, &c.		Per gallon.
		s d.
Fine Pale Oak Varnish	.....	0 8 0
Pale Copal Oak	.....	0 10 0
Superior Pale Copal	.....	0 13 0
Fine Extra Hard Church Oil	.....	0 10 0
Superior Hard-drying Oak, for seats of Churches	.....	0 14 6
Fine Elastic Carriage	.....	0 12 0
Superior Pale Copal	.....	0 10 0
Fine Pale Maple	.....	0 10 0
Finest Pale Durable Copal	.....	0 18 0
Extra Pale French Oil	.....	1 0 0
Superior Pale Copal	.....	0 12 0
White Pale Enamel	.....	1 4 0
Extra Pale Paper	.....	0 12 0
Best Japan Gold Size	.....	0 8 0
Superior Black Japan	.....	0 16 0
Oak and Mahogany Stain	.....	0 8 0
Brunswick Black	.....	0 9 0
Borin Black	.....	0 16 0
Superior Black	.....	0 16 0
French and Brush Polish	.....	0 5 0

* Denotes accepted. † Denotes provisionally accepted.

ATTLEBOROUGH (Norfolk). - New gas manager's
house, for the Attleborough Gas Company. Mr.
Herbert J. Green, Architect and Diocesan Surveyor,
Norwich, King's Lynn, and Lowestoft.

H. Smith.....	£439 9 0	A. J. Harrison ...	£421 1 4
G. R. Barnard.....	431 0 4	E. J. Smith, Bun-	
W. Peake-Vout....	430 0 0	well, Norfolk†	414 0 0

DEVIZES. - For erection of two new wards and alterations and additions to the existing buildings at the Cottage Hospital, for the Committee. Mr. A. J. Randall, M.S.A., architect, 4, St. John-street, Devizes

W. E. Chivers & Sons	£2,198	T. Stone	£1,930
E. Linsey	2,080	F. Randall & Sons	1,898
Parsons Bros	1,997	H. Ash, Devizes	1,858

FARNBOROUGH.—For erection of a cinematograph theatre. Mr. G. S. Valentin, theatre architect, 18, Charing Cross-road, W.C. Quantities by architect.

E. Watson	£2,696	0	0	J. B. Seward	£2,397	0	0
E. C. Hughes ...	2,640	0	0	W. E. Blake, Ltd.	2,367	0	0
Norris & Co. ...	2,640	0	0	Martin Wells,			
Dockerell & Co.	2,587	0	0	Ltd.	2,199	0	0
J. J. Snuggs ...	2,435	0	0	F. G. Pope & Co.,			
G. Kemp & Co.	2,439	0	0	London, S.W.*	1,999	17	6

LLANILLYFNI.—For painting and repairs of the
Salem Chapel and minister's house Mr G. Llewelyn
Griffith, architect, 105, High-road, Llanillyfni —
O. Jones £45 16 W. O. Williams,
W. H. Roberts ... 43 16 Carnarvon* £39 16

PONTEFRAC.—For an extension to the engine-house at the Roall pumping-station. Messrs. G. & W. Hodson, M.Inst.C.E., engineers, Loughborough:—
J. Fairbairn & Son, Hensall*..... £590

SHEERNESS.—For erection of fourteen houses.		
Mr. Marshall Harvey, architect, Sittingbourne:—		
M. R. Richardson	£1,960 0	C. E. Skinner ... £4,358 0
R. Spinner	4,873 0	A. Osborne..... 3,920 0
Moore & Roberts	4,562 0	W. J. Sone..... 3,818 10
Iyall Bros.	4,500 0	L. Senger, Sit-
H. Foyd.....	4,489 0	tingbourne* ... 3,762 0

SILKSWORTH.—For erection of a temperance hall.
Mr. J. Wilson Hays, architect, Wingate. Quantities
by the architect:—

E. Pitt	£921	18	2	J. M. Wright ..	£756	12	0
Page & Wight ..	879	0	0	R. C. Brown,			
W. White	825	0	0	Stockton-road,			
Merrey & Charlton	820	0	0	Sunderland*	739	0	0
Holding & Ward	809	0	0				

WARWICK.—For erection of a pair of child
homes, etc., for the Warwick Union. Mr. F. G.
dall, M.S.A., architect, 4, Parade, Leamington Spa.
T. Bailey £2,410 H. J. Dawson
Sheasby & Hobbs 2,275 A. T. Dawkes
Smith & Sons 2,270 W. Roe
J. S. Kimberley 2,233 E. P. Gathercole,
R. Bowen 2,186 Leamington

† Recommended for acceptance.

Ham Hill Stone.
Doultong Stone.
Portland Stone.

The Ham Hill and Doultong Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trusk & Co.
(the Doultong Stone Co.).

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams
16, Craven-street, Strand.

WHAT!
USE WHITE
LIME-SAND BRICKS
(Of the Finest Quality)
FOR CONTRACT WORK?
WHY?

B The Bricks are uniform.
F: Less mortar is required.
C Closer joints can be made.
A is per cent. more bricks can be laid per day.
U Where light is required they need no whitewashing
S Saving of material and labour.
E USED BY THE MILLION IN GERMANY, AMERICA

These Bricks are made by the
GODSTONE BRICK & TILE CO., LTD.,
Oxted Road, Godstone, Surrey,
and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 25/- per 1,000, net.
Send for Free Samples.

Asphalte.—The Seyssel and Metallic La Asphalte Company (Mr. H. Glenn), Office, 4 Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and mil rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

PILKINGTON & CO
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.

Polonceau Asphalte.

PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING
SEYSSSEL ASPHALTE (Direct from the Mines).

Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Telephone:
North 3032 (4 lines).

THE BUILDER

VOL. CL.—No. 3580.

SEPTEMBER 15, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
QUAINT TEXT-BOOK OF 1734.....	281	MONTHLY HISTORICAL REVIEW		PATENTS.....	314
LESSON OF TATTERSHALL CASTLE.....	283	ARCHAEOLOGICAL RESTORATIONS BY FRENCH		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN...	315
ES.....	283	ARCHITECTS (WITH ILLUSTRATIONS).....	306	SOME RECENT SALES.....	317
STORY OF THE BRIDGE. VI.—STONE BRIDGES		THE ROMAN FORUM.....	305	PRICES CURRENT.....	317
AND SOME PROBLEMS (WITH ILLUSTRATIONS).....	290	NOTES (WITH ILLUSTRATIONS).....	306	TENDERS.....	318
PLICATIONS RELATING TO THE PAPAL COLLEC-					
TIONS IN ROME ..	287	THE BUILDING TRADE:—			
AND PRIX DE ROME (WITH ILLUSTRATIONS).....	290	RECENT WORKMEN'S COMPENSATION CASES.—II.	308		
MONIAL TO EDWARD VII. IN CRATHIE CHURCH		THE TRADE UNION CONGRESS.....	308		
(WITH ILLUSTRATION).....	300	A COMPACT CONCRETE MIXING INSTALLATION			
ERAL NEWS.....	300	(WITH DIAGRAM).....	300		
GUARY.....	301	GENERAL BUILDING NEWS.....	310		
MONIAL SUMMARY.....	302	PROJECTED NEW BUILDINGS IN THE PROVINCES	310		
INTERNATIONAL CONGRESS OF ARCHITECTS.....	302	CANADIAN ARCHITECTURE.....	312		
PEITION NEWS.....	302	LONDON COUNCILS.....	314		
COMMUNICATION COLUMN.....	302	LAW REPORT.....	314		
ER TO ILLUSTRATIONS.....	302				
Y YEARS AGO.....	302				

Illustrations.

DESIGN ADOPTED BY THE COMMISSIONERS OF WOODS AND FORESTS FOR THE REBUILDING OF OXFORD-CIRCUS WHEN THE PRESENT CROWN LEASES FALL IN. MR. HENRY TANNER, F.R.I.B.A., ARCHITECT.

BIRD'S-EYE VIEW OF NEW GARDENS, MELLERSTAIN, N.B. PROFESSOR REGINALD BLOMFIELD, A.R.I.A., ARCHITECT.

MODEL AND PLAN OF ANCIENT ROME. BY M. P. BIGOT.



Model of Rome in the Walker Art Gallery, Liverpool.

(See "Note" on page 283.)

A QUAINI TEXT-BOOK OF 1734.

"January 11, 1734.—We have perused these Two Volumes of The Builders Dictionary and do think they contain a great deal of useful Knowledge in the Building Business.

NICHOLAS HAWKMOOR. JOHN JAMES. JAMES GIBBS."

THE chief interest of this sumptuously-bound volume lies in the recommendation. Doubtless these names had weight, as letter is given a whole page, that in opening the book we find courteous hint that someone has been able to see that ordinary readers have been safeguarded in their quest for

"useful Knowledge in the Building Business."

Good bold type is accorded to the Preface to induce us not to miss it. And a wonderfully true statement is included in its propositions, viz., that "Distress was the Parent of Architecture." Many think that no alteration has occurred in this country, with certain notable excep-

tions, and that Distress possesses that which Emerson attributes to the English race, "great spawning power," so far as architecture is concerned. We are at liberty to differ or agree with both opinions, each to his liking.

The proposition of our text-book is that distress produced the "Indians' hut and the Icelanders' cave," and as the

authors beg us not to censure them even if they are not "Worthy of Applause," we may, perhaps with emphasis, say there is something in their proposition, however the other may stand.

"To conclude," says the Preface, "we have nothing more to add but our grateful Acknowledgements to those Gentlemen and Artists who have favoured us," etc.

To say that this discrimination is easily understood renders one liable to misconstruction, at a time, too, when we are all gentlemen and ladies. We know what the authors intended to convey, and doubtless the gentlemen and artists found their reward in a way which made up for any secret annoyance due to the distinction being drawn in such a case. We have to accept the premises that private gentlemen did not assist and that competent professional men did, and this begins a series of arguments sufficient to occupy a debating club's time during a whole evening. There is a deal of worry in thinking the matter out alone, and it is not advised.

"Building is used to signify both the Constructing and Raising of an Edifice; in which sense it comprehends as well the Expenses as the Invention and Execution of the Design. In Building there are three things to be considered, viz., First, Commodity or Convenience, Secondly, Firmness, Thirdly, Delight."

If there be a "peage in words," as Ruskin bids us learn, here is an example. One which shows us the depth and quality of the tongue which is one of our shured privileges.

The order may be altered to desire, our text-book says—

- (1) Commodity or Convenience.
- (2) Firmness.
- (3) Delight.

Altogether it seems to need nothing more than the statement as the authors left it—a standard to work up to.

What are the "Ichonography, Orthography, and Stenography of the staircase"? It is laid down that "no Person who intends to build a Structure" should proceed "without the Advice of a Surveyor or Master-Workman who understands the Theory of Building and is capable of drawing a Draught." And "In a Draught there ought to be the Ichonography of each Floor, and the Orthography of each Face"; then, "if the Artizan be well versed in Prospective more than one face may be represented Stenographically."

In any case, it is plain that Ichonography is an essential in a staircase or elsewhere; "likewise the Ichonography of all chimneys, both as to length and breadth of Hearths, Jambs, Bed-Places, Width of Doors, and Windows, in each Contignation or Floor."

So that we must observe the Ichonography of each Contignation.

There is a sympathetic, full-of-fellow-feeling sort of paragraph telling us "By no Means build too near a Great Neighbour, which were to be as unfortunately seated on the Earth as Mercury is in the Heavens, for the most part ever in Combustion or Obscurity under brighter Beams than his own."

This is described, as the authors say, as "A Political Precept," because they don't know what else to call it; and in italics too.

The sentiment has relationship to that of some of our present town-planning schemes, in so far as the Greater Neighbours are called upon for a better aim than that of extinguishing smaller ones if they live in the town which is planned.

We are shown an interesting account in "Mr. William Blakewey's Bill of Materials had of, and work done, by Thomas Halling, Bricklayer, June 5th, 1732:—

	£	s.	d.
For 8000 of Bricks @ 12/- per M..	4	16	0
For 4000 of Tiles @ 20/- per M. .	4	00	0
For 1500 of Lime @ 12/- per C. .	9	00	0
For 14 Load of Sand @ 2/6 per L	1	15	0
For 500 Nine inch Paving Tiles @ 11/- per C. .	2	15	0
For 30 Ridge Tiles @ 1 1/2/- per piece	0	04	4 1/2
For 3 weeks and 2 days work for myself at 3/- per diem	3	00	0
For 25 days work and a half for my man 2/6 per diem	3	03	9
For a labourer 25 days and a half at 1/8 per diem.	1	18	0
Their Sum Total is	30	12	5 1/2

If the error in the total is thought to be the builder's, as it is in his favour, what are we to say of the extension of the labourer's item?

Our authors say that "the bricklayers bill may be made after this manner," so that we must not be hypercritical. Doubtless an adjustment took place. Then we read, "But if Bricklayers do not work by the Day, then they either undertake the Work by the Great, viz., to do all, and to find all the Materials; or else they are to do it by Measure, and to do all the Work and to find all the Materials at such a price by the Rod for Walling; by the Square for Tiling; and by the Yard for Paving, etc."

In addition, we get a description of piecework, "according as he" (the bricklayer) "has made his agreement."

So that in 1734 building methods included estimated work, daywork, measured work, and piecework, as in our day.

In "Foundations" it is stated, "That we may found our Habitation firmly requires the exactest care." Surely this is well put. Turn it into the phraseology of our modern specification as a beginning for excavator and concretor, as—"All parts of the structure must be firmly founded with the most exact care," and it loses its quality without gaining any great merit as an instruction, though it retains its flavour of warning.

We get a reason for this exactest care. "For, says Sir Henry Wootton, if the Foundation dance 'twill marr all the mirth in the House."

In the instructions for foundations we meet our present rule for the bottom course of footings.

"Thirdly, that the breadth of the Substruction be at least double the Breadth of the Wall that is to be raised upon it.

But even in this case Art ought to give way to Discretion and the substruction may be made either broader or narrower, according as the Goodness of the Ground, and the Ponderosity of the Edifice requires."

In "Floorings" the "Receipts" are wide in range.

"Take of clayey loam and new soft horse dung one third, with a small quantity of coal Ashes, if they can be had, and temper these—and lay the Floor with the *Stuff* three or four inches thick."

The proportions are mystifying; supposing "coal Ashes" can't "be had."

"Sir Hugh Plat gives us a receipt making an artificial Composition which with to make smooth *glittering* and *lustrous* Floors."

Ox Blood and fine Clay temper together makes the finest Floor in the World."

We may question the wisdom of inserting the following, unless as a sort of backhanded caution, seeing that authors write for those occupied in so way in building. It is frank, yet may be excused for winning.

"Dr. Fuller advises rather to believe any Man rather than an Artificer in his own Art as to the Charges of a Building, especially if either himself or any Friend of his is to be concerned in the *Build* that is designed to be erected! Not that builders can tell nearly the Charge when they know the Design, but it is very rare that they will give a just Estimate of it according to their judgment; because they think that if they should acquaint a Gentleman with the full Expense, first, it would discourage him from prosecuting it; and for that Reason, they soo him up, till it cost him something considerable; after which he must go through with it, or lose what hath been expended."

Then, our authors continue. "The Spirit of Building first possessed Poor after the Flood; which then caused Confusion of Languages, and, since, Confusion of many a Man's Estate. And hence, when some Persons would with a Curse upon one with whom they are anary, they wish them to be possessed with the *Spirit of Building*, or as other term it, *The Italian Plague*."

The adjective could not be "Italian" nowadays if the plague exist still, which we at any rate are not disposed to admit.

Some of us may be inclined to agree with the criticism implied regarding the contemporary examples our authors have in mind. Was it that where seventy were avoided a sort of exotic elegance was attained? That with all the dignity of the examples they were not altogether of the atmosphere if they were in it? However that may be, certainly we may agree that there is a gracious native quality added to our fair English landscapes by some of our modern masters. Their achievements fit the picture of a truly an our woods and our cornfield and meadows, and actually help to make "the smiling land" of England—unmistakably of England.

PRESIDENT OF THE INSTITUTE OF MUNICIPAL ENGINEERS.

Mr. Ernest A. Stickland, A.M.Inst.C.E., Borough Surveyor, of Windsor, has been nominated by the Council of the Institution of Municipal Engineers as President for the year 1911-12. Mr. Stickland was elected in 1890 to Mr. A. M. Fowler, the City Engineer and Surveyor of Newcastle-on-Tyne. On the completion of his articles he obtained a position under the Borough Surveyor of Stockport. In 1895 he was appointed Resident Engineer for the contractor upon a large sewerage extension contract in Blackburn. On the completion of the works Mr. Stickland was appointed an assistant in the City Surveyor's office, York. Leaving there in 1897 he was appointed an assistant to the Borough Surveyor of Reading, where he remained for nearly two years. In the latter part of 1898 Mr. Stickland was appointed Borough Surveyor of Newbury, and in 1897 Borough Surveyor of Windsor.

THE LESSON OF TATTERSHALL CASTLE.

CONSIDERABLE indignation has been provoked amongst the inhabitants of the little Lincolnshire town of Tattershall by the extraordinary and incredible mutilation that the XVth-century castle, in which they take so much pride, is suffering at the hands of its most recent purchasers. The secrecy in which the whole transaction has been veiled indicates that its perpetrators, whosever they may be, realise its discreditability; but the visible progress of the work is a sufficient exposure of its barbarism and folly. The first of the wonderful stone chimney pieces to be torn out from the walls has proved by shattered fragments (as everyone familiar with them anticipated) that their beauty and preservation depended on the support of the brickwork in which they were structurally incorporated. The whole series forms so complete an archaic illustration of nearly four centuries of family and manorial history at their re-erection elsewhere will be incongruous absurdity, the very falsehood of which will rob their art of all that duty which consists in fitness. All the antiquarian societies, national and local, are keenly striving to arrest or pair such gross vandalism, but their task is a difficult one.

This is but one more example of the urgent need of Government control over national monuments. However well formed and energetic our voluntary societies may be, it is impossible for them to take the place of, and act as efficiently as, a properly constituted authority for the purpose of protecting works of artistic or archaeological value, and the other features of interest such as typical scenes of natural beauty and the haunts of wild life.

All these matters would fall within the province of a Minister of Fine Arts when he gets him appointed. Our readers are doubtless aware that steps have been taken towards scheduling buildings of special value up to the end of the XVIIIth century, and that considerable progress has already been made in the preparation of this list. But, important as is the work the Royal Commission so engaged, it by no means covers the ground necessary to include all that it is desirable to reserve. For one thing, it is limited to structures from the hand of man and does not extend to objects for the beauties of which we are indebted to the workings of Nature; besides, why should the period be arbitrarily limited by the year 1700; surely there is much that we should be sorry to lose belonging to more recent periods?

As the beginning of a long and arduous undertaking, all welcomed the appointment of this Commission, but the question arises, whether we can afford to wait for the completion of its labours before making more definite steps? We think not, and the possible fate of Tattershall Castle, even if through the efforts of Lord Brownlow and others this fate is averted, is only one more proof of the urgency of some immediate action for the preservation of our national monuments in their integrity. It may be

urged that we must first decide what is a national monument or object of national interest, before we can protect it, but surely it would be possible to draft some comprehensive definition that could be operative during the completion of a detailed schedule.

We would urge our legislators to take some such step pending the years that must elapse before a full list is prepared. Other nations have long been in advance of us in this respect, and we must endeavour to make up the leeway in the most expeditious manner, even if we have to discard the claims of strictly logical procedure in so doing.

NOTES.

Restorations of Ancient Rome.

In our Historical Review we illustrate M. Bigot's comprehensive restoration of Ancient Rome. In connexion with this, it may not be generally known that in the Walker Art Gallery at Liverpool there is a very good model of that portion of Rome surrounding the Forum as it was presumed to appear at the Imperial epoch. While this model does not quite accord with the results of more recent archaeological researches, a comparison between it (see front page of this issue) and the one prepared by M. Bigot (see plate) will indicate that it gives a very fair general impression of Rome as it was, and that it is worthy of careful study by those who contemplate visiting the Eternal City, as preparatory to the fuller information to be found in the exhibition at the Piazza del Terme.

The Problem of Ventilation.

THAT the science of ventilation has by no means reached finality, has long been obvious, and while we cannot agree with all the conclusions at which Mr. Leonard Hill, F.R.S., arrived in his paper read before the Physiological Section of the British Association, his remarks certainly point out some of the considerations that are too apt to be neglected in the study of the essentials to good ventilation. That chemical purity is not the only factor was emphasised by Mr. Hill in drawing attention to the fact that temperature, movement, and humidity also had a marked influence. A cool, moving, and dry atmosphere gives vitality and energy, a still, heated, and moist one, a sluggishness and relaxed sensation. For those concerned with the design of buildings the problem is inextricably involved with that of heating; how is sufficient warmth to be economically maintained, while at the same time air is supplied sufficiently cool to be pleasant to breathe? The questions of humidity and movement are minor ones, that of temperature has never been thoroughly solved. When it is, ventilation will have taken a great step towards reproducing the healthy and pleasant conditions that obtain in the open air on a day that is termed "bracing."

Influence of the Sun on Buildings.

THE expansion and contraction of building materials as the result of temperature changes is not always realised by architects quite so fully as it should be. In ordinary

circumstances no particular harm is caused by expansion and contraction in buildings, although plastering and cement stucco or rendering are very apt to suffer unless suitable precautions are taken. An instructive illustration of the deformation caused by the rays of the sun is furnished by the Washington Monument in America. This lofty structure daily suffers deflection owing to temperature variations, the movements being indicated by a copper wire, 174 ft. long, suspended in the middle of the column and supporting a plummet in a vessel of water. It is stated that at midday in summer the apex of the structure, 550 ft. above ground level, is shifted some hundredths of an inch towards the north by expansion of the stone. The effect on metallic structures is naturally much greater, a fact brought home to us when walking across the Forth Bridge the day before that work was opened by King Edward VII., then Prince of Wales. On that occasion the expansion gauge on the middle girder span marked the elongation of 1 in. as the effect of the winter sun for the period of not more than one hour.

New York Building Code. SINCE the presentation of the conflicting reports of the 1909 Committee the existing building code of New York City has been under careful consideration by a Joint Committee, comprising representatives of the American Institute of Architects, the American Institute of Consulting Engineers, the Building Trades Employers' Association, and the New York and the National Boards of Fire Underwriters. It is satisfactory to learn that the Committee of Aldermen have shown a disposition to work with the Joint Committee and to accept their advice on technical matters. Political influences and the tactics of firms interested in different and rival structural materials and methods may probably cause some complications, but it is to be hoped that the city authorities will set their faces against all considerations save those based on technical grounds, and that the new building code may be one worthy of the great city for whose benefit it is intended. We can quite understand the attempted interference of rival commercial interests, but the introduction of politics into the settlement of technical building regulations is beyond comprehension on this side of the Atlantic.

Stonehenge and Cyrene.

THE mystery which veils and the wonder that still englamours the place and structure of Stonehenge are at once partially dispersed, and just by so much enhanced, by a recent discovery. Professor Richard Norton, of Harvard, investigating ancient Cyrene, the site of the capital of Cyrenaica, a little-known country to the west of Northern Egypt, has discovered an assemblage of monoliths so similar in workmanship and structure to those of the outer circle at Stonehenge that he feels justified in identifying the civilisation which made both. From this and other discoveries at Cyrene the Professor has formulated a theory that Stonehenge is perhaps the finest known witness to the existence of one great race, or, at least, one common religion, extending over all of what was

LONDON NEW BRIDGE



WATERLOO BRIDGE



(From Professor Jenkins's "Bridges.")

in Roman times called the civilised world—a race and religion to which his findings in Cyrenaica also belong. We know little of Cyrene and the surrounding country. It lies to the west of Egypt, and is bounded by the deserts and the Mediterranean Sea. It was colonised by the Greeks at about 650 B.C., which does not imply—rather to the contrary, in fact, since the Hellenes were conquerors for choice and pioneers seldom, if ever—that the country was uninhabited till then. Professor Norton's discoveries indicate that it was peopled by a neolithic race of considerable culture, as the stone images and carving, evidently of the date of the monoliths, betray exceptional skill. The association of Stonehenge with Greece rests, too, on the strong probability that they are contemporary—belonging, that is, to the late Neolithic period. Sir Norman Lockyer's remarkable investigations in 1901, by which he discovered that the true axis of Stonehenge was planned to pierce the sun as it rose, two diameters from its present point, on the longest day 3,581 years ago, make the date of Stonehenge 1680 B.C. And, although as yet exact astronomical observations have not been brought to bear upon the temple at Greece, all indications go to prove that they were of the same age and built for the same purpose—the worship of the sun. The

gradual unearthing, through the combined efforts of all the learned sciences bearing upon the remote past, of a synthetic worship amid surroundings of inalienable solemnity, of the one cause and condition of all life, origin of all the forms of Zeus, as it becomes increasingly more clear, has but the effect of adding to rather than detracting from the marvel and fundamental sanctity of the temple on Salisbury Plain.

THE STORY OF THE BRIDGE.

BY WALTER SHAW SPARROW.

VI.—STONE BRIDGES AND SOME PROBLEMS.

IN reading the history of this subject one is troubled by half-a-dozen questions that flash into the mind repeatedly, and find there no answers based on authorities. To what extent were the ancients guided by mathematical theories and calculations in their practical dealings with the high mechanics of arched bridges? Did they start out from the point of view, afterwards held and explained by Bacon, that experience was the only safe guide to success in practical work? Were some of them at all like the great mathematicians of the XVIIth and XVIIIth centuries, who often passed by experience and observation, founding their analytical research on hypotheses which were contradicted by events and by experiments in craftsmanship? Was there among

the Romans such a man as Leibnitz, who in 1691, solved the problem of the catenary curve, showing that this was precisely the curve which an arch ought to have if its materials, infinitely small and of equal weight, were to rest securely together in equilibrium? And was there a Roman Bernoulli, or a Roman La Hire?

Unfortunately we cannot get at all near to the scientific art of bridge building, if this thing appealed to the Romans hours of speculative talk. Vitruvius does not help us here. But if we can take for our criterion of what was probable and likely from the general character of the Roman genius in action, then practice in bridge building was the only recognised guide, just as success or failure in war was the only recognised test of a general and his troops. Practical traditions, traditions formed a discipline of craft laws, and these things, passed on from generation to generation, were familiar to all good masons, so that architects and engineers had at their beck and call a body of workmen thoroughly conversant with those stern facts of practical mechanics that the winnowing experience of centuries had kept and treasured for the common use. Roman bridges and aqueducts, still extant though sometimes in ruins only, belong to periods often wide apart in date, and from their family likeness we can infer with safety that in this perilous work, subject always to the waywardness of storms or the devastating power of floods, and the vibration of heavy traffic, sound conservative methods were the rule, little store being set on experiments in cheaper ways of attaining the same measure of convenience. It is



Ponte Rialto, Venice, built between 1588-1591. By Antonio da Ponte.

[Photo. by Erith.]

markable, for example, that, although the masons took infinite care in the making of their cements, they mistrusted mortars of any kind in bridge arches, preferring to use a huge aqueduct such dimensions and proportions of its parts as would enable it to stand firmly without any cement at all between the joints of its masonry. Experience had taught them, we may believe, that slow-drying mortars were very com- missible, and that quick-setting cements could not be used without risk in heavy masonry, because of the time which must elapse between their use and the bedding of heavy stones in their places upon it. They must have known, too, that when mortars are used in a bridge there should be no more in any joint than just enough to hinder the contact of stones, and to exclude the water without harm to an even bearing. To the work without mortar was a com- pulsive discipline that made thorough craftsmanship a habit, and how perfect this discipline with dry stones could be in man's hands is very well shown in a story which concerns the giant aqueduct of Segovia. The arches of this great monument were



[Photo. by Stengel, Dresden.]

Ponte S. Trinita, Florence. By Bartolomeo Ammanati (1511-1592).

a quiet practitioner like Isambert, whose art was a rational application to special needs of thoroughly tested old methods and traditions. Perronet's self-confidence was so great that his operation of striking the centres of the bridge at Neuilly, by removing

the arches sank 23 in., showing that his mathematical resolutions without excellent mason's work were dangerous and humiliating. Smeaton, in a more tragic way, had to learn the same lesson from his disastrous bridge over the Tyne at Hexham, and learned engineering did not save the Tay Bridge from catastrophe. One could name many other examples of bad work, all arising from self-conscious and theoretical habits of mind passed on to the XIXth century by the spirit of late Renaissance art. Is there not more in rule of thumb than in rule of theory?

To study the worth of local traditions we have only to take a tour through Wales, where, as late as the second decade of the last century, the master mason of every district was able to build a good sound bridge, obeying traditions probably as old as the mediæval bridges at Llangollen, Brecon, and Holt, near Wrexham. And much of the work done is useful to ourselves for the lessons that it teaches. Welsh masons were never ashamed of scabbled faces to their stone bridges, nor of rough natural textures; their economy went hand in hand with good taste; while we for a long time have spent many thousands of pounds on daintily-finished craftsmanship that looks tame in a pile of ordered masonry. I have never seen a genuine Welsh bridge that did not add romance to a fine landscape setting, and I wonder always why Englishmen have failed to keep their old fondness for a bold handling of stone in bridges. Remember the feeble affectations that try to look architectural in the coupled columns to Waterloo Bridge. Rennie, like Telford wished to be architectural, and he was encouraged by the example set by Perronet. But Rennie and Telford were engineers, and never once did they achieve success in their efforts to be architects also. It was not in



"Palladian" Bridge, Prior Park. Built by Ralph Allen (circa 1750).

were taken down during the wars of the XVth century, and Isabella the Catholic had them reconstructed in the best manner of her age. Less than three centuries later the reconstruction gave way, necessitating their restoration, while the untouched masonry work remained a prodigy of youth and heroic old age. Marshal Ney visited the aqueduct in 1808, and when he saw the startling contrast between the old work and the new he pointed to the modern part and said, "The labour of men begins there!" or the Roman arcades seemed like the work of gods.

The most pitiful things in human "progress" are the dry rot of theories and the power of cheapness that eat their way into the vitals of craftsmanship. In the XVIIIth century a disease of theoretical speculation took a firm grip on the technics of bridge building; no work of importance was done without interference from library mathematicians, as well as from infinite talk and dissipation. Greater ado could not have been made if a successful bridge had never been built in the history of the world. And what good came from all the fusian of theories? Perronet was regarded as the most scientific bridge-builder of his age; his knowledge was said to be prodigious and his gift of writing enabled him to be persuasive as well as scientific and learned. Yet his work was accompanied by blunders which in the Middle Ages would have shamed

the immediate support of the arches, was begun eighteen days after the keystones had been put in their places, when the mortar had not yet become hard enough to bear new pressure without yielding. The crowns of



[Photo. by C. S. Sargison.]

Bridge, Renaissance Type in Clumber Park—the Dukeries.



Chatsworth Bridge and House, Derbyshire. Renaissance.

[Photo, by Frith.]

their nature to do what Ammanati had done in the finest bridge of the Renaissance, the Ponte della Santissima Trinità over the Arno at Florence, where the graceful and rhythmic arches have curves which are cycloids. Their rise from the springing level to that of the crown is only a trifle more

than one-sixth the span, while the roadway above, though starting from approaches which are but moderately raised, has a mild gradient admirably suited to the needs of town traffic. The piers are in excellent proportion, and their stern cut-waters are useful foils in an architectural design un-

rivalled among bridges for its blending of lightness with alertness and supple vigour. Yet one Victorian expert, William Hosking, in 1842, tried to prove that the piers were too massive, but he was laughed at by architects, who said that Ammanati alone could have improved the noble design.



Paris Bridges from St. Gervais.

[Photo, by Frith.]

The fact is that from the XVIIIth century war engineers were for ever busy with objects for reducing the size of bridge piers, and in this they were partly right and partly wrong. They were partly right because the medieval system of using piers as abutments had many disadvantages, though necessary those days either for military reasons or to deepen the river up-stream. Old London Bridge was such a dyke, and all medieval bridges of any note could be used for defensive purposes in any part of their rise without much risk to adjacent arches. On the other hand, monster piers not only interfered with navigation; they formed a dangerous rapid below bridge, they needed flooding water into inundations, and led to the drainage of mediæval towns unhealthily. All these points were noted in the

I hold, then, that modern types of bridge building are all imperfect, and that the next European war will prove this to be so. While engineers have been constructing their hideous metal monsters, and scheming to get in masonry the maximum of strength with the smallest amount of materials, a necessity for defensive preparations has pressed with ever greater urgency on all alert nations, and the result is that ways of communication everywhere are out of keeping with the needs and with the destructive power of modern war. In recognition of this plain fact, what importance need we attach to such details of construction as the relative proportion between the breadth of piers and the spans of arches? Here is a little table to show how the engineering mind has viewed that one point from Roman times to the reign of Victoria:—

Bridge.	Breadth of Piers.	Span of Arches.	Period or Engineer.	Remarks.
	Ft.	Ft.		
Roman	5	33	Roman	Unusual proportions in Roman work. Each pier an abutment.
Antiquarian	11	25	Roman	
Esprit	38	110	Roman	War bridges, with piers acting as abutments.
London	22	115	Mediæval	
Windsor	15 to 34	10 to 33	Mediæval	
Royal	14	72	Mediæval	
Paris	19	106	Mansard	Modern peace bridges, showing their variations from the XVIIIth century to the death of Telford in 1834.
Italy	14	128	Hupart	
Switzerland	10	58	Perrot	
St. James	17	76	Isid. Jones	
St. James, London	23	140	Labely	Modern peace bridges, showing their variations from the XVIIIth century to the death of Telford in 1834.
St. James, London	18	77	Myrie	
St. James, London	14	90	Streaton	
St. James, London	12	72	Telford	
St. James, London	8	65	Telford	
St. James, London	8	60	Telford	

XVIIIth century, and much thinner piers were advocated as if they had no disadvantages of their own. The thrust was to be relieved over the arches to the abutments. There were to be no abutment piers at all, though wars and rumours of wars kept rope in a ferment. Perrott alone protested. He told his employers, the French Government, that it would be prudent, designing bridges for rivers of great width, to introduce some strong piers, which, in case of need, might serve as abutments; they could be placed at distances of three or four arches apart. No recommendation could have been wiser in that; and if we view it as a criticism of modern bridges, what are we to say? We are living at a time when all the great nations of the world are making themselves dykes for the next huge war. Yet the dykes of the world are, as a rule, so unitary that they seem fitted only for everting peace and trade. A single shell could ruin a great suspension bridge; a whole railway system could be paralysed by a few cartridges loaded with modern explosives; and how many stone bridges would bear the loss of an arch apiece without injury to the whole structures? Good heavens! If the black race in the U.S.A. were to produce a great leader, a Napoleon, easily he could prove that a destruction unwarlike bridges cripples an industrial life of society! In short, whatever may be said against the mediæval bridge, it certainly embodied the mediæval spirit, in religion and in war; while the bridges of our own time have nothing whatever in common with that force in politics that needs for its exertion the discipline of vast armies and great navies. But I shall be told, perhaps, that no skill I thought could succeed in making our dykes proof against artillery. This is true; but it is true also of battleships. Yet battleships are made, and rightly made, with defensive armour so as to resist shells with the might that science can invent and prove. Why bridges should be designed without any fitness for the perils of war, if railways and highways counted for nothing in the transport of food and men and merchandise, is a thing that passes all understanding.

PUBLICATIONS RELATING TO THE PAPAL COLLECTIONS IN ROME.

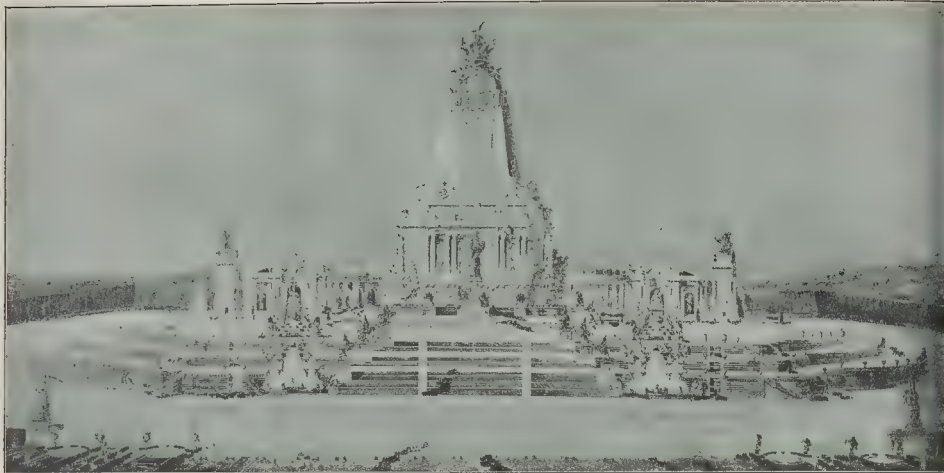
It may not be generally known to English readers that the Papal authorities have of recent years initiated the publication of two important series of works, on a really magnificent scale, dealing with the more important of the treasures in their keeping. The first of these series describes some of the more interesting objects in the archaeological, artistic, and numismatic collections of the Vatican and Lateran palaces, while the second series consists of reproductions in facsimile of the most valuable of the manuscripts preserved in the Vatican Library. A new work was published in each of these series in 1910, and it so happens that both of them possess a considerable interest for architects. The first of them* contains reproductions of all the ancient mosaics in the Vatican and the Lateran palaces. Most of them are now fulfilling their original purpose, being in actual use as pavements, and only a few of the finer ones are placed upon the walls. The majority of them are not, it is true, of the highest artistic value, but they have hitherto been, it is not too much to say, hardly noticed; and this series of fine photographic reproductions—coloured plates are not given, in order not to increase still further the price of a work already somewhat costly—will enable their designs to be carefully studied and adopted by students of decoration. It will be especially instructive to compare them with the many examples of mosaic pavements which have been found in Roman buildings in Britain, which, while far rougher and coarser in execution, are often quite as complicated in design—a fact which may lead us to suppose that the original cartoons were executed in Italy or by Italian craftsmen. We do not, indeed, often get in England the simple scenes which form a not inconsiderable proportion of the mosaics illustrated in the work before us, but find rather a tendency to the use of intricate geometrical patterns, which may be due to the fact that the great majority of the Romano-British mosaics are comparatively late in date, belonging probably to the IIIrd and IVth centuries after Christ, while those preserved in the Vatican may be placed in the IInd and the IIIrd centuries. In the work before us the mosaics are arranged in topographical order, according to the localities in which they were found—first, those from Rome and its immediate suburbs, then those from the country surrounding it (there are hardly any specimens from other parts of Italy); and, finally, those of which the provenance is unknown. First comes the well-known mosaic of athletes now in the Lateran Museum, which is really composed of the fragments of two pavements, found in the two large apses, or credes, at each end of the great central hall of the Baths of Caracalla, which look on to the two palaestrae, or courtyards, where the athletes performed their exercises. Then come various smaller mosaics, most of them coloured, the finest of which is one representing an unswept floor, with a row of tragic and comic masks along one side of it—a favourite subject in antiquity. This particular specimen is especially well laid, and the tesserae are exceptionally small. From the farm of Tor Marancia, on the Via Ardeatina, comes another small still-life scene of fish and vegetables hanging up in a cupboard; this, and several large pavements in black and white mosaic, of a purely decorative character, were found in two ancient villas on this farm, which belonged to Munatia Procula and Numisia Procula, two Roman ladies who lived in the middle of the IInd century after Christ. Hadrian's Villa is represented by a group of well executed coloured mosaics with landscapes; a few fine pavements with geometric designs, however, are still to be seen *in situ* in the villa itself. As far as composition goes, however, the

It will be seen that the proportion has been varied from nearly one-half of the span to a ninth part of the chord. What a war bridge should be at the present time is a hard nut for architects and engineers to crack; but an arched bridge, carried by a new and much lighter type of abutment piers, seems to be least at variance with the common sense of military defence. The subjects chosen for illustration include the beautiful bridge by Ammannati, architect and sculptor, who died in 1592; the Rialto, finished by Antonio da Ponte in 1591; some English Renaissance types, and a striking general view of seven Paris bridges. I do not know whether the piers of a bridge are proper pedestals for figures in sculpture, but the Chatsworth bridge is one example among many of this decorative convention. A flood would wash the statues thoroughly and keep them clean, but this seems hardly enough to account for their position above the cut-waters. The Rialto, founded on 12,000 piles 10 ft. long, is carried above the Grand Canal to a height of 24 ft. 6 in. Its fine arch has a span of 91 ft., and the footway is 72 ft. wide. The design has often been given to Michelangelo, but it belongs unquestionably to Antonio da Ponte, who was chosen by the Senate in a competition against Palladio.

UNIVERSITY OF LONDON.
On October 2 will be opened a course of instruction in sculpture, under the direction of Mr. Havard Thomas, and in connexion with the Slade School of Fine Art.

STAR AND GARTER HOTEL, RICHMOND.
We understand that Mr. W. R. Waters, C.E., F.S.I., and Mr. Harold A. Coombes, successors to Mr. Albert Chancellor (Messrs. Chancellor & Sons), of Richmond and London, are instructed to carry out extensive alterations and additions, at a cost of 30,000., to the hotel, which has just been purchased after having been closed for some years. The hotel represents an inn established on the site, and with that sign, in or about 1738. A fire consumed the older part of the hotel forty years ago. Of the present buildings the banqueting-house was erected in 1864-5 after plans and designs by E. M. Barry, R.A., the pavilion or ballroom, with the gallery, was added by C. J. Phipps.

* *Collezioni archeologiche artistiche e numismatiche dei Palazzi Apostolici, pubblicate per ordine di Sua Santità Pio X. a cura del Museo e delle Gallerie Pontificie e della Biblioteca Vaticana.* Vol. IV. I mosaici antichi conservati nei Palazzi Pontifici del Vaticano e del Laterano con introduzione del Dottor Bartolomeo Nogare Atlas folio, Pp. X+60. Seventy-six plates. Milan: U. Hoepli, 1910. 200 lire (81.).



"Monument to the Glory of the Independence of a Great Country." Design by M. René F. H. Mirland. Awarded the Grand Prix de Rome.
(From *l'Architecture*.)

palm must certainly be given to the large octagonal mosaic from the *Thermae of Oriculum* (the modern Otricoli), a town in Umbria, on the ancient Via Flaminia, not far from Narni, where the famous Bridge of Augustus is. It is, as all visitors to the Vatican know, placed to great advantage in the large Sala Rotonda of the Sculpture Museum; and it was completed externally by the addition of other less important mosaics in black and white, probably found elsewhere, which have been exposed to considerable injury from the continual traffic. In the room preceding the Sala Rotonda, the Sala a Croce Greca, which is at the head of the stairs as one enters the Museum, are other smaller mosaics let into the pavement, of which the finest is a coloured mosaic with a helmeted head of Minerva in the centre, found at Tusculum in 1741-6, in a villa popu-

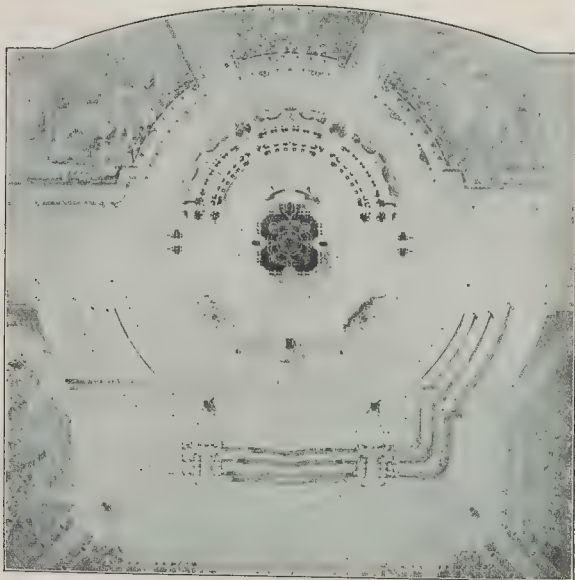
larly, but wrongly, supposed to be the Tusculan villa of Cicero, the site of which, while it cannot as yet be accurately fixed, was certainly a good deal lower down.

Another interesting pavement comes from Lorum, on the Via Aurelia, the birthplace of Antoninus Pius, now marked only by a large farmhouse in the middle of the desolate Campagna; it has no less than thirty-two scenes of actors and masks, a few of which are now exhibited in the Sala degli Animali (a room in the Vatican museum of sculpture devoted in the main to representations of various animals), while the rest are stored away; for the whole pavement, which had at first been laid down in the museum, was so much damaged that it had to be taken up in 1894. Similar damage has befallen a large carpet-like pavement from the *Thermae* at Ostia, which still remains in the Sala dell'

Immacolata Concezione, where the doctrine of the Immaculate Conception was promulgated by Pius IX. in 1854. It is, however, difficult to know how else, except as pavements, large floor mosaics could be effectively exhibited. Placed upon walls they are cumbersome and heavy, and fail of their due effect while their faults of execution become too prominent. On the other hand, as pavements, they have often been altered in shape to fit them to the rooms in which they are placed, and, being liable to damage, they are exposed to the necessity of restoration; and the modern Italian workmen are so skilful that it is often difficult to distinguish repairs from original work in mosaics which are not of the highest technical excellence. Dr. Nogara's patient researches into the records of their discovery have done much to establish the facts in this connexion, and, indeed his text is mainly devoted to the discussion of their provenance and of the circumstances under which they were found, and to an accurate description of the mosaics themselves. Having placed the material at the disposal of students, he leaves to others artistic criticism and the collection of parallel examples elsewhere. It is worth remarking that none of the larger mosaics illustrated in the work before us were found before the end of the XVIIIth century, and that even of the smaller scenes none have been preserved to us from a period earlier than the beginning of that century. We have several drawings of pavements found in the XVIIIth century (hardly any, one would say, from the XVIIth), but it obviously was not thought practicable, or, at any rate, not worth while to remove them bodily and make use of them elsewhere. Ancient paintings, on the other hand, came somewhat earlier into favour—as is, indeed, natural from their greater technical excellence—and such paintings as the *Alcibiades* and the *Rome in the Palazzo Barberini* were removed to places of safety as early as the XVIIth century, immediately after their discovery; while the study of decorative frescoes (as, for example, of those in the Golden House of Nero, under the *Thermae* of Trajan, known, until lately, as those of Titus) began early in the XVIIth century.

The other work, the eleventh of the second of the two series of which we spoke* at the beginning, is of quite a different character. It is a reproduction of the well-known

* *Codices e Vaticanis selecti phototypice expressi iussu Pii PP. X. Consilio et opera curatorum. Bibliotheca Vaticana volumina et. Il libro di Giuliano da Sangallo (codice Vaticano Barberiniano Latino 4424) con introduzione e note di Cristiano Hülsen. 1 vol. text. folio; pp. 1X + 164, seventeen plates. 1 vol. facsimiles, elephant folio, sixty-nine plates, with reproductions on both sides of the page. Leipzig: O. Harrassowitz, 1910 320 marks (161.).*



Plan. Design by M. René F. H. Mirland. Awarded the Grand Prix de Rome.
(From *l'Architecture*.)



"Monument to the Glory of the Independence of a Great Country." Design by M. André J. L. Japy. Awarded the Premier Second Grand Prix de Rome.

(From *l'Architecture*.)

ume in which Giuliano da Sangallo, the famous Florentine architect, had gathered together all the specimens of architecture, ancient and modern, which, of what he knew, led him to be of the greatest interest and beauty. It is a volume of seventy-five parchment leaves, originally consisting of five separate fascicles, the formation of which was begun in 1485, but bound up not earlier than 1514 nor later than 1516, the year of Liano's death. His son, Francesco, into whose hands the book fell, made a few additions in the vacant spaces upon some of the leaves, but did not add to their number.

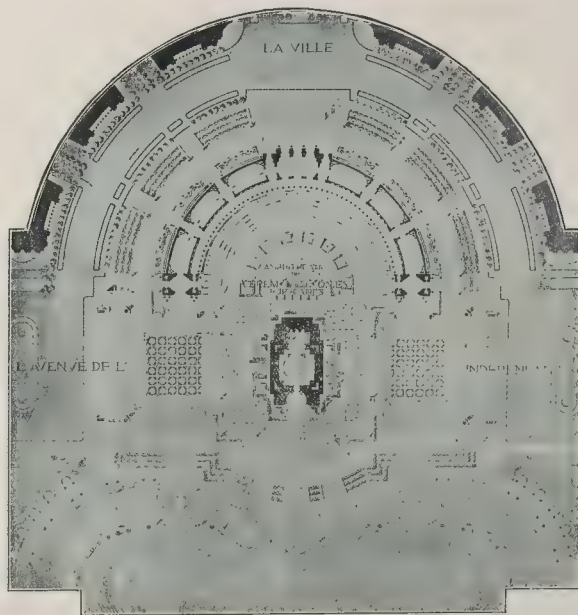
The drawings are very various in subject and execution, but the great majority of them are not sketches, but drawings carefully cut and finished at home with ruler and compasses; and some of them, indeed, are copied from earlier originals by other artists, notably Francesco di Giorgio Martini of Siena. The chief interest was in the study and design of fortifications. With regard to the so-called *Codex Escurialensis*, an almost temporary sketchbook by an unknown artist, the state of affairs is somewhat curious. In some cases it seems clear that Sangallo's drawings have served as a model for the artist who made those drawings—who was, as Hermann Egger has demonstrated in his edition of the *Codex* (see *Classical Quarterly*, vol. III. (1909), 147), a pupil of Domenico Ghirlandaio—so that Sangallo must have actually lent the volume to Ghirlandaio; in others, as in the case of some of the views of Rome, which are common to both, each depends on a common original—a drawing of Ghirlandaio himself. This is all the more strange, as we know that Sangallo was much in Rome; but we find again that he often makes incorrect copies, not taken from the monuments themselves, but from earlier manuscript copies of the inscriptions, even monuments so well known and accessible as the Column of Trajan and the Arch of Constantine in Rome. Further, in regard to accuracy in general, we find that Liano's reconstructions are not infrequently too arbitrary in important details.

But when all this has been said, we still are before us one of the most important series of archaeological drawings that has come down to us from the Renaissance. It is one of the earliest in date, and certainly as fine as any in execution; and its value, not only as an artistic, but from an archaeological point of view, is, therefore, very considerable. We learn much in regard to the topography of Rome from Sangallo's drawings, which are almost the only ones of more than one building which have not completely disappeared—such as a porch, perhaps connected with the Theatre of Marcellus at Rome, or at least situated near it, and of the so-called Torre di Boezio at Pavia.

He alone, too, shows the Arch of Gallienus on the Esquiline in Rome with the two lateral openings which it originally possessed, but which were destroyed late in the XVth

century, leaving only the single arch which is now preserved.

We learn much, too, as to the internal decoration of certain of the early Christian



Plan. Design by M. André J. L. Japy. Awarded the Premier Second Grand Prix de Rome.

(From *l'Architecture*.)

GRAND PRIX DE ROME.

OUR illustrations of the designs of two of the successful competitors for the Grand Prix de Rome are reproduced from *l'Architecture*. The subject was "A Monument to the Glory of the Independence of a Great Country." M. Mirland, winner of the prize, was a pupil of M. Laloux, and was born in 1884. M. Japy, pupil of M. Pascal, was born in 1883. The winner of the Deuxième Second Grand Prix was M. Paul A. Tournon, pupil of MM. Seellier de Gisors et Bernier.

buildings of Rome, now entirely destroyed or modernised—the Lateran baptistery, the Oratory of the Holy Cross (Oratorium Sanctæ Crucis) built on the north-west of it by Pope Hilarius in the latter half of the IVth century after Christ, and of the Pagan basilica of Junius Bassus on the Esquiline, converted to Christian uses at the same period. We possess so few examples of the marble incrustation of this time (S. Sabina at Rome and the Cathedral of Parenzo in Istria) may be mentioned as among the best extant) that these drawings have an especial value from this point of view.

We have, too, numerous drawings of cornices, bases, capitals, and other architectural members (like those of the unknown artist of the first quarter of the XVth century, wrongly called Andrea Coner, whose sketchbooks are preserved in the Soane Museum in Lincoln's Inn Fields, and were published in facsimile in the *Papers of the British School at Rome*, Vol. II.). These Professor Hülsen has spent much labour in identifying; and, indeed, the whole of the volume of text which accompanies the larger volume of reproductions in facsimile bears evidence of his scholarly acumen and thoroughness, both in the introduction, in which he deals with the history of the volume, how it came to be formed, from what sources the drawings are derived, and how it was copied by later draughtsmen (notably by an artist who worked for Cassiano dal Pozzo in the first half of the XVIIth century, and whose copies from it are to be found both in the so-called Coner volume—which must once have belonged to dal Pozzo—and in one of the volumes of archaeological drawings purchased from Cardinal Alessandro Albani, to whom they eventually passed from the dal Pozzo family, by King George III., and now preserved in the Royal Library at Windsor), and in the text, in which he deals elaborately and carefully with every drawing

separately, and with the archaeological, architectural, and artistic information which may be extracted from them.

The improvement of processes of reproduction has fortunately rendered the publication in facsimile of drawings of such importance a comparatively simple, though still a somewhat costly matter; and the more of such publications that can be made the greater will be the service that will be done to students. To compare the various drawings scattered through the public and private libraries of Europe by means of notes is no easy matter, whereas from photographs one can tell at a glance which are or are not identical, or do or do not derive from a common archetype; and from such studies we shall learn, not merely more about antiquity, but more about the history and development of Renaissance art and architecture, and what were the ancient originals which were then the special objects of study and attention. There must have been many pattern-books, the originals of which go back to some architects of distinction, in which were grouped plans and details which students would find useful (the drawings of the so-called Coner, carefully measured, obviously not copied directly from the original, but from some unknown archetype and classified according to subject, form an excellent example); and to discover what these archetypes were, of what they consisted, and by whom they were put together would be of great interest. We must not forget that the so-called Coner was directly copied by Michelangelo in some of his architectural studies in red chalk, preserved both at the British Museum and in the Casa Buonarroti at Florence.

Finally, publication in facsimile is certainly the best method of insurance against fire or theft that could possibly be adopted, and is therefore of paramount importance in the case of MSS. or drawings of value.

MEMORIAL TO EDWARD VI. IN CRATHIE CHURCH.

ON Monday, the King, in Crathie Parish Church, unveiled a memorial to King Edward VI. which takes the form of a marble communion table and an oak screen. The memorial is placed in the east end of the chancel, the table being of Iona marble, white, with veins of green and black. Between 6 ft. and 7 ft. in length, and standing 3 ft. in height, it is arranged in front into three panels, with one at each end, while the table is formed of a solid slab. In the background is a carved oak screen that rises against the wall to a height of about 8 ft. The wood which was obtained from a country house at Leicester, is over 600 years old. The carving is in the late Scottish Gothic style.

The memorial was designed by the architects of the church, Messrs. A. Marshall Mackenzie & Son. The communion table was the work of Messrs. Galbraith & Winton, Glasgow, and the carved oak screen, that of Messrs. J. and A. Ogilvie, Aberdeen.

GENERAL NEWS.

Professional Announcements.

Mr. Theodore Fyfe has removed from Gray's Inn-square, W.C., and his business address will in future be 2, Montague-place, Russell-square, W.C. Telephone: 1322 Central.

Bequest for Bristol Cathedral.

The late Mr. C. Y. Sturge, of St. Augustine's-mansions, Bloomberg-street, Westminster, and of Rodborough Heights, Gloucestershire, who represented Westminster on the London County Council, left an estate valued at 11,237l. gross, of which 9,847l. net personality. He left to the Dean and



Memorial to King Edward, Crathie.
Messrs. A. Marshall Mackenzie & Son, Architects.

Chapter of Bristol Cathedral 1,000l. for any purposes connected with the services or adornment of the Cathedral, expressing the desire, without creating any trust in that respect, that it should be expended wholly or partly either on the completion of the cloisters or in a stained glass window for the nave; and if he shall not have fulfilled such bequest in his lifetime a further 200l. for filling the vacant niches in the south side of the abbey gateway with appropriate articles, in accordance with the scheme prepared by him in 1905 in conjunction with Mr. Walter Reed, Messrs. Frost & Reed, of Bristol.

The Society of Architects.

The Society will be officially represented at the Ninth Architectural Congress at Rome by Mr. Percy B. Tibbs, F.R.I.B.A., Vice-president, and Mr. R. G. Lovell, Member of Council.

The Society will be officially represented at the Crystal Palace Mansion House Conference, October 23, by Mr. Geo. E. Bond, P., President, and Mr. Percy B. Tibbs, F.R.I.B.A., Vice-President.

London Salon of Photography.

The London Salon of Photography has just been opened for a six weeks' season at the galleries of the Royal Water-Colour Society, Pall Mall East. The aim of the Salon exhibitions, as expressed in the catalogue, is to encourage those in whom individual aim and feeling have found expression by means of the camera. There are over two hundred pictures in the galleries. A large number of the pictures exhibited have an architectural taint, although cathedral studies are few. The repainting of Winchester Cathedral has been seized upon by Mr. C. David Kay for a pictorial effect, Pierre Dubreuil shows Notre Dame de Paris in a new setting, and Mr. E. Evans has a bay of the north porch of Bathurst. Mr. John H. Anderson has taken his subject Cannon-street railway-station, Mr. Evershed, Lambeth Bridge, and Mr. Hector Murchison has made a picture out of the chimneys of the Adelphi. Several Salon openings have been arranged, one of the organizers being Mr. Arthur Marshall, F.R.I.B.A., who also contributes a Venetian study to the walls of the Exhibition.

Instruction in Structural Engineering and Reinforced Concrete.

Up till recently no adequate course of instruction was available for students of reinforced concrete, but last winter the deficiency was repaired by the establishment of classes on this subject at the London County Council School of Building, Fernside-road, Brixton, W., the lecturer being Mr. H. Kempton Tyson, the Secretary of the Concrete Institute. The course was a very complete one, and the demand for such instruction resulted in a large attendance and necessitated an extension of the scheme, an elementary theory class being formed and two assistant teachers appointed. Though the subject of reinforced concrete is taught in many places abroad, the course at the School of Building is distinctive in respect to the great feature made of practical work, which is of the utmost importance to a knowledge of theory and the proper execution of the work. Those who seek to gain work are required to take both the practical and theoretical instruction, but the practical part is so arranged that it can be taken independently by builders, clerks of works, foremen, craftsmen, and others who only wish to study this aspect. A complete course of instruction extends over four years, various other classes at the School have been utilised in the preliminary stages, and the opportunity will be taken in giving the necessary instruction in the principles of structural design to show their application to all constructive materials.

Battersea Polytechnic.

The calendar of the Battersea Polytechnic for the new session, which opens on Monday, September 25, gives details of the courses and classes held at the Institution. Full day and evening courses in preparation for the intermediate and final degree examinations in Science and Engineering are offered, and the lecturers in the various subjects are fully recognised by the University of London, so that students attending the Polytechnic may be registered as internal students of the

University of London. In the day technical college, full-time courses are arranged in mechanical, civil, electrical, and motor engineering, architecture and building, chemical engineering and art, the courses covering a period of three years, at the end of which time students passing the necessary examinations are awarded the Polytechnic Diploma. Concurrently with the Diploma courses, students can prepare for and take the Degree courses in science and engineering of the University of London. In addition to the scholarships already existing, the governing body have instituted one of 40l. a year for three years tenable at the day technical college. Evening courses are provided in the departments of mechanical engineering and building trades, electrical engineering, mathematics, physics, chemistry, natural science, photography, art. Special mention may be made of the following new developments:—In the Mechanical Engineering Department the governing body have arranged a course of lectures on "Illuminating Engineering." In the Electrical Engineering Department special attention is being given to the subject of electric traction, and new machinery and apparatus are being purchased in order that the subject may be more fully and thoroughly dealt with. In the Physics Department the course on acoustics for music students will be repeated, and a class in physical chemistry for chemistry students has been arranged. In the Chemistry Department the chemical engineering course has been extended by the addition of a practical class. Attention may also be drawn to the chemistry course for sanitary inspectors.

Provincial Housing Problems.

Evictions have been taking place in Winchester, various dwellings having been declared by the City Council to be unfit for habitation. The absence of alternative accommodation has caused some distress to the victims, but the difficulty will be met in the near future by the erection of eighty-two new dwellings. This seems to be an opportunity not only for a general consideration of the local housing problem, but for the preparation of a scheme capable of expansion to anticipate the demands of the future.

At Coventry there seems to be still more discomfort, in spite of efforts made by the Corporation to provide suitable accommodation. The scarcity of dwellings is said to be so extreme that marriages have had to be postponed until facilities are forthcoming for setting up housekeeping.

On the other hand, there seems to be too much room at Stapleford and Sandiacre, near Nottingham, where the building trade is almost at a standstill. In the first-named township about a hundred houses are said to be vacant, and a local builder can find employment for only a dozen men. Whether this points to overbuilding in the past or to some unusual industrial dislocation is a matter for inquiry. Progress seems assured further north in the county, for the Education Committee propose to build a school to accommodate about 600 children of the parishes of Rildworth and Rufford. This is the result of colliery developments near Rainworth.

Apothecaries' Hall, Blackfriars.

The Society of Apothecaries are about to dispose of some 12,000 ft. super. of their lands in Water lane, in the parish of St. Anne, Blackfriars, having separated from the Grocers' Company, they obtained a charter of incorporation dated on December 6, 1617, with a further charter on January 29, 1685. They thereupon established themselves in Coghiam House, the Lady Howard of Effingham's property, which they adapted for their purposes, in Blackfriars (since Water Lane, and standing on the north side of Playhouse-yard. The Society's hall, dispensary, laboratories, and other premises, as rebuilt in 1676-7, were improved and enlarged in 1786.

Proposed Bridge, Glasgow.

The Corporation are again considering the much vexed question of supplying further facilities for traffic across the Clyde. The Tramways Committee have framed proposals for building a bridge a short distance upstream from Glasgow Bridge to relieve the traffic from Jamaica (north) and Bridge and

Portland streets (south), with an approach from Argyll-street through St. Enoch square, and from Broomielaw and West Clyde-street. That project would involve, in all likelihood, the demolition of St. Enoch's Church in the square and the laying of tramway lines along Buchanan-street.

Tattershall Castle Fireplaces.

The purchasers of these famous accessories to the ruined castle in Lincolnshire have agreed to stop the work of removal until to day (Friday), and will resell to the National Trust if 3,000l. is forthcoming by to-morrow. The sum of 5,000l. will effect the purchase of the castle complete with its mantelpieces.

Property Sales.

The list of properties just placed in the market comprises the fine early Jacobean manor house at Fritwell, near Bicester, Oxon, formerly the seat of the Willes family, and restored and refitted by Thomas Garner for his own residence; Allan Bank, near Ambleside, the home in 1808-11 of William Wordsworth, who there, it is said, wrote the greater portion of "The Excursion"; Broome Park, an estate of 3,550 acres, situated in several parishes between Canterbury and Folkestone, and the original of the Tappington of "The Ingoldsby Legends"; the late Miss C. A. Sullivan's estate, extending over 55 acres, in Fulham, and including Canwarth House, the home of Bernard Lintot, Sir James Lowther (Lord Lonsdale), and Lady Shelley, Broom House, sold to the Hon. Lawrence Sullivan, who married Lord Palmerston's sister Elizabeth, and Broom Farm, whence there was a ferry to the Feathers at the outfall of the Wandle; Blair Drummond, in Perthshire, 7,000 acres, the seat of the late Colonel Home Drummond and of his house for nearly three centuries past; Hodroby Hall, near Doncaster, Lord Galway's seat of 1,000 acres, with a mansion built by Sir Thomas Garrigue, temp. Elizabeth; Poynton, Cheshire, which, having continued in the Warren family for five centuries, was bequeathed to Lady Vernon by the daughter of Sir George Warren (ob. 1801); Burwell Park (1,460 acres), Louth, Lincs, seat of the Listers and birthplace of Sarah, Duchess of Marlborough (on the estate are the ruins of a Benedictine priory founded by John de Hay and given to St. Mary's Abbey, near Bordeaux); and Aldwyth Theatre, built after Mr. W. G. R. Sprague's designs, for Mr. Seymour Hicks, in 1904-5.

OBITUARY.

Mr. W. H. Hill.

The death is announced of Mr. William Henry Hill, B.E., of the firm of Messrs. W. H. Hill & Son, of Cork, and Fellow of the Royal Institute of the Architects of Ireland. Mr. Hill was elected a Fellow of the Royal Institute of British Architects in 1888. Of the more important of the works carried out by him and the firm, we may mention the following:—In Cork and the county—Roman Catholic Church, Cork Lunatic Asylum (1899), Consumption Sanatorium at Streamhill, Doneraile (with Mr. R. Evans, 1908), Council Chamber, etc., Court House, the River Lee bridge, near Queen's College, and premises for the Young Men's Association, South Mall, Cork; repair and restoration of Castlemaquair, Carrigrohane (with new spire), and Movedy churches; Provincial Bank, and Auxiliary Asylum extension, Youghal; Kilbonane Parish Church and new sanctuary; Celtic Cross, Soldiers' Memorial, Gill Abbey; artisans' dwellings for Queenstown Naval Dwellings Company (1902-6); and many houses, villas, and business premises in Cork, Bandon, Douglas, Glasheen, Junishannon, Gill Abbey, Mallow, Fermoy, and around. In Tipperary—Villa residence in Carrigrohane and houses for Lord Barrymore, and the Soldiers' Home (1901). The firm were engineers for the intake installation, service reservoir, and ancillary works for the Mallow Rural District Council at Buttevant (1907).

Mr. E. B. Thornhill.

The late Mr. Edward Baylies Thornhill, M.I.C.E., entered the offices of the London and North-Western Railway Company in 1862, and, after forty years' service, was appointed chief engineer. He retired two years ago. He made the plans for the new docks at Garston, the widening of the railway into Euston, and the reconstruction of Lime-street Station, Liverpool.

EDITORIAL SUMMARY.

THE leading article is entitled "A Quaint Text-Book of 1734," the text-book in question consisting of two volumes of "The Builder's Dictionary," published in that year.

The second leading article, "The Lesson of Tattershall Castle" (p. 293), deals with the mutilation of the XVth-century castle there.

Notes (p. 293) include: "Restorations of Ancient Rome"; "Stonehenge and Cyrene"; "Influence of the Sun on Buildings"; "New York Building Code"; "The Problem of Ventilation."

"The Story of the Bridge," illustrated, is continued in part VI. of this series of articles, stone bridges and their types being dealt with (p. 234).

"Publications Relating to the Papal Collections in Rome" is the title of an article on p. 297.

Illustrations of the 1st and 2nd Grand Prix de Rome Prize Designs are given on pp. 293 and 293.

The Illustrated Monthly Historical Review (p. 303) includes: "Archaeological Restorations by French Architects"; "The Roman Forum"; and Notes.

"The Building Trade (p. 308) includes: "Recent Workmen's Compensation Cases—IL"; "The Trade Union Congress"; "Concrete-mixing Installation"; "General Building News"; "Projected New Buildings in the Provinces," etc.

The greater part of a paper by Mr. Percy E. Nobbs, read before the Royal Architectural Institute of Canada at Winnipeg, is given on p. 312.

In Law Reports will be found a brief notice of the case of "Howlett v. Harrods, Ltd." (p. 314).

THE INTERNATIONAL CONGRESS OF ARCHITECTS.

From the Programme of the Ninth International Congress of Architects, Rome, we take the following particulars:—

Monday, October 2.

9 a.m.—12.—Meeting of Permanent Committee and the General Committee of Organisation for appointment of President and Council, etc.

2 p.m.—Visit of all members of the Congress to the tombs of the Kings of Italy, and to that of Raphael in the Pantheon.

4—7 p.m.—Visit to the monument to Victor Emmanuel II.

7.30 p.m.—Dinner given by the Committee of Organisation to the delegates of foreign Governments and to the members of the Permanent Committee.

10 p.m.—Reception by the Associations of the Artists of Rome, by arrangement with the Committee of Organisation, to all members of the Congress in the rooms of the Associazione Artistica Internazionale.

Tuesday, October 3.

10 a.m.—Meeting of the reporters of the various subjects at Castel S. Angelo 9—12. Visits to monuments and exhibitions.

12.30 p.m.—Lunch given by the Committee of Organisation to the delegates of foreign and national associations.

3—5 p.m.—Inaugural session at the Capitol in the hall of the Horatii and Curiatii.

10 p.m.—Reception by the Syndic in the Capitol.

Wednesday, October 4.

9 a.m.—12.—First meeting of the Congress at Castel S. Angelo for the discussion of special subjects.

12.30 p.m.—Fees for private invitations.

2—7 p.m.—Visits to monuments and exhibitions.

Thursday, October 5.

9—11 a.m.—Second general meeting of the Congress, discussion.

11 a.m.—12.—Lecture by Professor Corrado Ricci, Director of Antiquities and Fine Arts on the Imperial Fora.

2 p.m.—Visits to monuments and exhibitions.

6—8 p.m.—Garden party.

Friday, October 6.

Excursions in the neighbourhood at pleasure. Evening free for receptions by foreign Embassies to the architects of their respective countries.

Saturday, October 7.
9—11 a.m.—Third general meeting of Congress. Discussion and lecture by Professor Stubben on the laying-out of towns.
2—7 p.m.—Visit to monuments and exhibitions.
10 p.m.—Reception.

Sunday, October 8.

Picnic Ottobrata (lunch given by the Committee of Organisation to all the members of the Congress).

4—9 p.m.—Reception by the Minister of Public Instruction in the Casino of the Villa Borghese.

Monday, October 9.

9 a.m.—12. Fourth general meeting of the Congress, discussion and lectures.
2—7 p.m.—Visit to monuments and exhibitions.

Tuesday, October 10.

9 a.m.—12. Closing meeting of the Congress.
2—7 p.m.—Visit to monuments and exhibitions.
8 p.m.—Farewell banquet (by payment of 20 francs).

Wednesday and Thursday, October 11 and 12.

Excursions at pleasure in the neighbourhood. Excursion to Venice. Train leaves Rome on the evening of the 12th.

Friday, October 13.

2 p.m.—Meeting of the Congress at the Doge's Palace. Visit to the Campanile of San Marco.

Saturday, October 14.

Excursion to the Venetian lagoon by invitation of the Town Council of Venice.

Sunday, October 15.

Visit to monuments.

The following excursions have been arranged in the neighbourhood of Rome:—I. Ostia, II. Subiaco, III. Orvieto, IV. Tivoli, and Villa of Hadrian, V. Anagni and Ferentino, VI. Corneto, VII. Castelli Romani, VIII. Viterbo, IX. Cori, Fossanova, Ninfa.

By virtue of a special concession on the part of the Italian Association of hotel proprietors (Roman section) members of the Congress of Architects may, on proving their identity, avail themselves of the reduced charges in hotels. Names of hotels and particulars will be found on the programme.

COMPETITION NEWS.

Manchester Art Gallery.

To-morrow is the receiving day for the designs by the ten selected competitors in this important competition, and architects throughout the kingdom will await with interest the verdict of Professor Blomfield.

Deptford Central Library.

The Public Libraries Committee report having further considered the question of obtaining the services of a quantity surveyor for the erection of the Central Library, and have come to the conclusion that it would be in the Council's interests to communicate with a number of quantity surveyors of repute, to be selected by the Committee, inquiring whether they would be prepared to carry out the above-mentioned work at a remuneration of 14 per cent. of the lowest tender, such fee to include the cost of printing and lithography, also to ask those firms who were prepared to accept the terms mentioned, at what figure they would be prepared (1) to measure up for the various certificates granted during the progress of the work; (2) to measure and adjust variations, on the understanding that when omissions and additions are set against each other on provisional amounts the commission will only be paid on the difference and not on the provisional amounts; (3) to measure for and adjust the final accounts of the building.

School, Tranent, Scotland.

Some time ago Tranent School Board invited plans and estimates for a new school proposed to be erected on the Ormiston-road, Tranent. There were six sets of plans, and after consideration the award was given to Mr. Peter Whitcross, architect, Prestonpans, whose plans, with relative cost of 5,000*l.*, were accepted.

School, Little Clacton, Essex.

A new Council School is proposed to be erected at Little Clacton, Essex. Competitive designs have been submitted to the Committee, who have accepted the designs sent in by Messrs. Tomkins, Homer, & Ley, of 214, Bishopsgate, E.C., and Frinton-on-Sea, and appointed them architects for the new buildings.

INTERCOMMUNICATION COLUMN.

Wind Pressure.

SIR,—A detached public building is proposed to be erected to plans passed by Council. The plans are certified by engineer to be strong enough to withstand any wind pressure the could now get to it. Can the Council ask for it building to be certified strong enough to withstand wind pressure if whole surrounding district was obliterated and this one building left?

Leyton.

TANNER.

ILLUSTRATIONS.

Oxford-circus.

THE illustration shows the design prepared for Jays, Ltd., by Mr. Henry Tanner, which has been adopted by the Crown authorities for the rebuilding of the whole of the circus when the present Crown leases fall in.

The other three segments of the circus will therefore, be rebuilt in accordance with this design.

House and Gardens, Mellerstain.

MELLERSTAIN, the seat of Colonel Lord Binning, C.B., is a very large house of two dates—an earlier house now forming one of the advanced wings of the forecourt on the north side designed by John Adam, father of the brothers Adam, and dating from about 1720 and the main block, the large building shown in the background of the drawing designed by Robert Adam, and containing what is probably the finest suite of ceilings by that architect in existence. On the outside there are no details, and Robert Adam for reasons unknown allowed himself to drop into the bastard Gothic of the XVIIIth century, hence the battlements on a house otherwise of a regular Georgian type. There were no gardens round the house. On the other hand, some 450 yds. to the south of the house and some 90 ft. below it is a large piece of water laid out as a "canal," oblong in plan, with segmental ends and returns and surrounded by beech woods. This canal has now been restored to its original shape, and the object of the design has been to make use of the fall of the ground and to bring the house into touch with the canal in one consecutive scheme, the axis line starting from the centre of the south front of the house and ending at the further end of the canal, a distance of some 765 yds. Advantage has been taken of a hollow in the brow of the hill to form a concave demi-lune with straight returns, and from the foot of this a grass walk 100 ft. wide is to lead down to the steps and balustrade at the near end of the canal. In execution several deviations from the design shown on the drawing are being made by the architect, Professor Reginald Blomfield, A.R.A. The stone used is Black Pasture stone. The contractor is Mr. Millar, of Edinburgh.

Ancient Rome.

THE reproductions of M. Bigot's model and plan of Ancient Rome are in connexion with Mr. Ashby's article on restorations by French architects exhibited at Rome (p. 303).

FIFTY YEARS AGO.

From the *Builder* of September 14, 1861.

Improved Granaries.

THE agricultural journals of France draw attention to a new system of preserving wheat. It consists of pits dug in the earth and lined with masonry or brickwork, which is afterwards coated with thin sheet iron. The War Department of France, by way of experiment, had 576 quintals (the quintal is 2 cwt.) of wheat buried for the space of 25½ months in such pits; and the result, says the *Economist*, was that the grain was preserved in excellent condition.



DESIGN ADOPTED BY THE COMMISSIONERS OF WOODS AND FORESTS FOR
PREMISES FOR JAYS LIM^B. S.W.



THE PHOTOGRAPH BY A.C. & A.B. EASTMAN, STREET PETER, LONDON

OF OXFORD CIRCUS, WHEN THE PRESENT CROWN LEASES FALL IN.
HENRY TANNER, F.R.I.B.A., ARCHITECT.

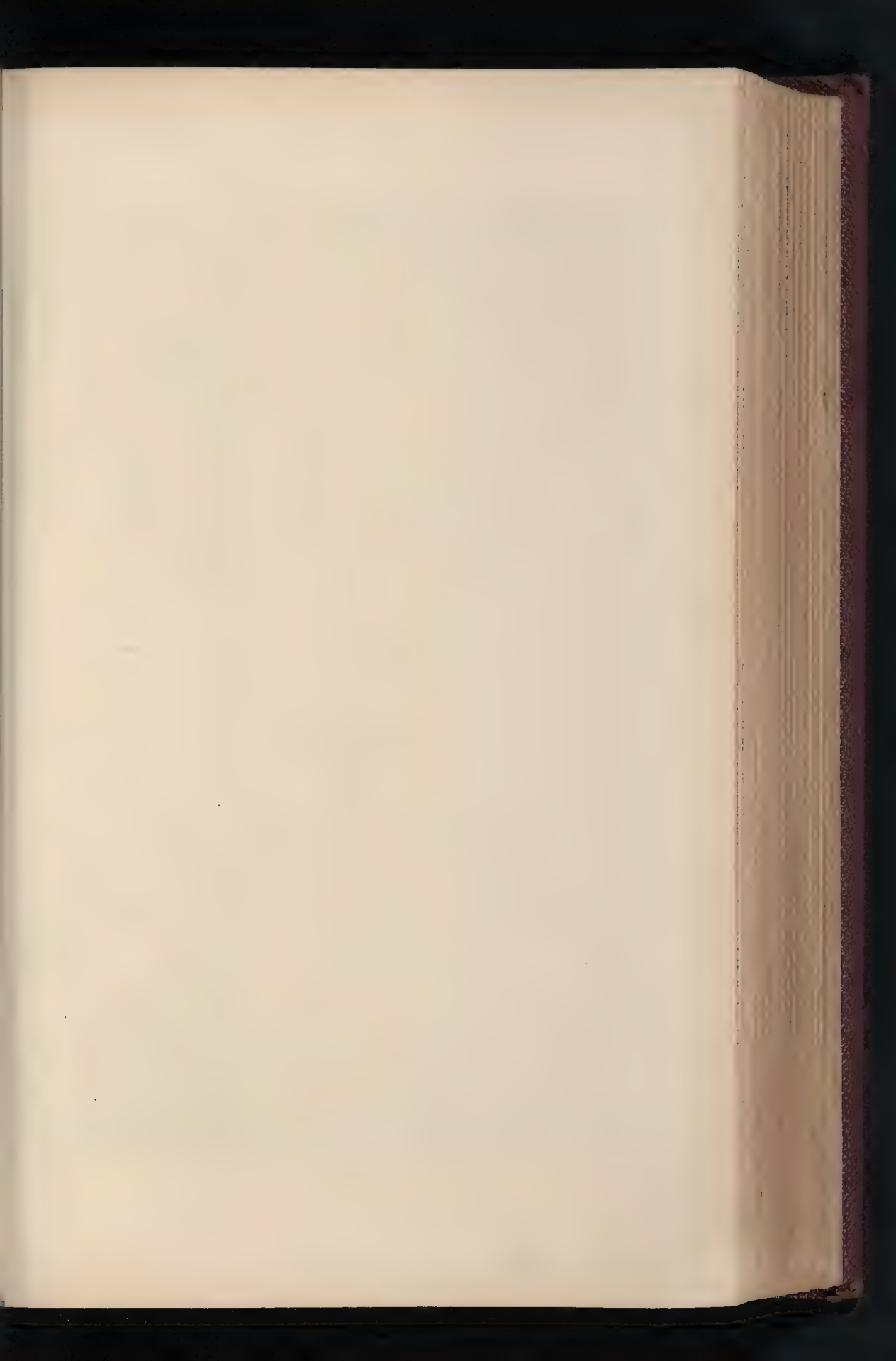
THE BUILDER, SEPTEMBER 15, 1911.





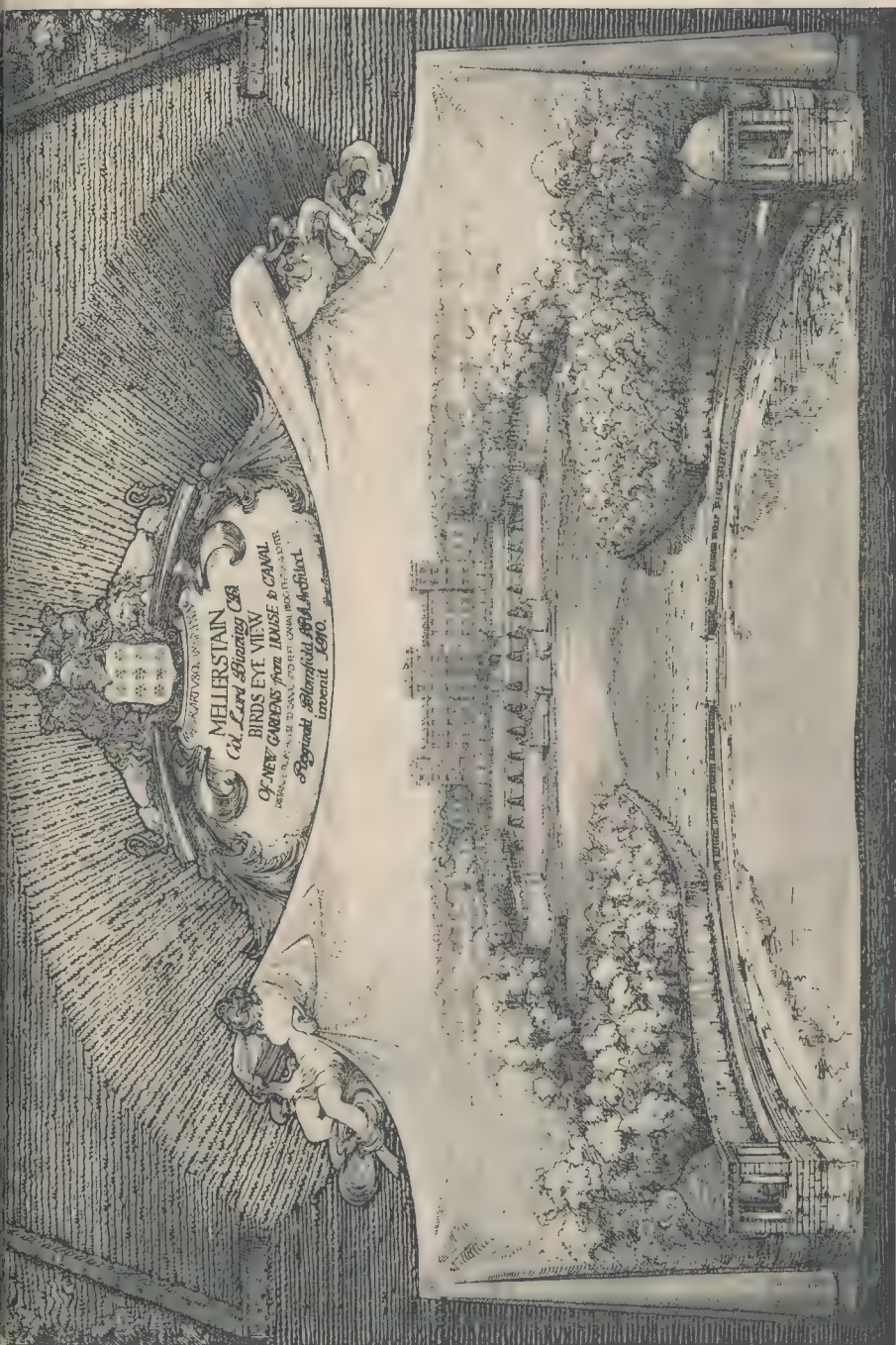
Bygone & Co., Ltd., Printers, 11 & 12, Strand, London, W.C.

MODEL AND PLAN OF ANCIENT ROME.—By MONSIEUR P. BIGOT.



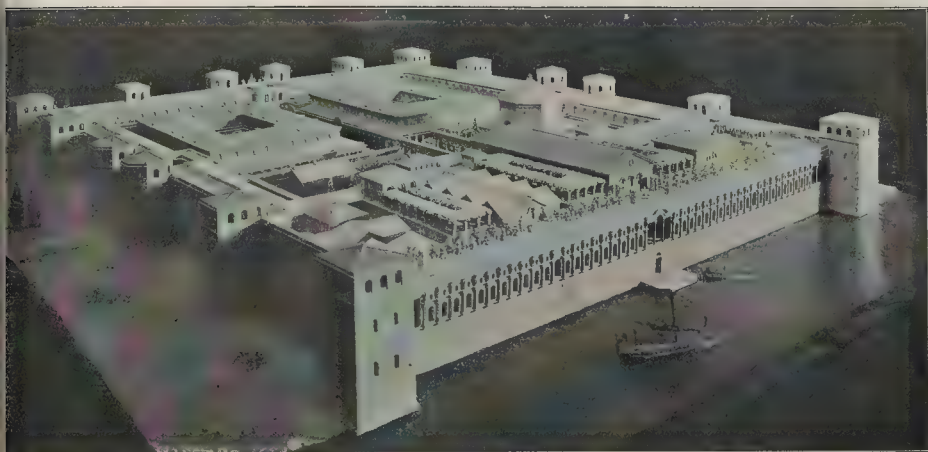
THE BUILDER, SEPTEMBER 15, 1911.





BIRD'S-EYE VIEW OF NEW GARDENS, MELLERSTAIN, N.B.—PROFESSOR REGINALD BLONFIELD, A.R.A., ARCHT.

MONTHLY HISTORICAL REVIEW.



The Palace of Diocletian at Spalato: General View of Model from the South.

ARCHÆOLOGICAL RESTORATIONS BY FRENCH ARCHITECTS.

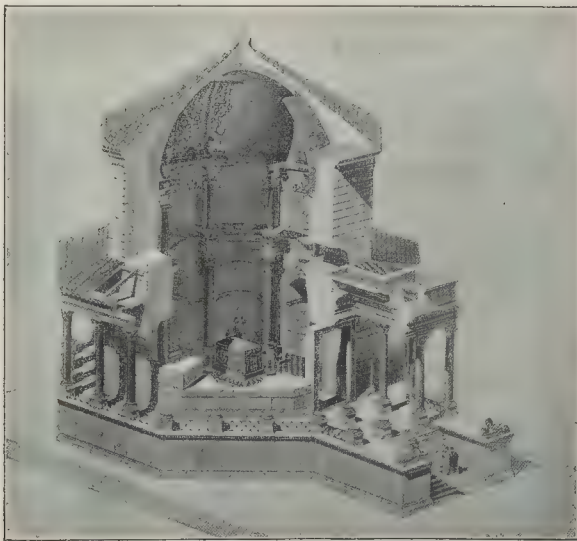
GENERAL notice of the Archæological Exhibition, which is being held this year in the Baths of Diocletian at Spalato (May 19), but there is one class of which the excellence and importance is such that they seem to call for special treatment; and these are two splendid restorations in the form of models, executed by two French architects, MM. Ernest Hébrard and M. de la Médière. The former has spent years of persistent, careful work in the preparation of his model of ancient Rome on the scale of 1:400, which is that of the famous Lanciani's great plan, the foundation of the study of ancient Rome at the present day. Not content with following the archaeological authorities available, he has conducted independent investigations into the details, e.g., as to the exact location and nature of the carceres of the Circus Maximus, as to the identity of the temple which occupied the elevated platform above the forum of Titus, etc., so that his judgment may command our respect. This is the place to enter into a detailed account of the model, but a few general remarks may not inappropriately be made upon it.

The illustrations (see plates), due to M. Ernest Hébrard, and, by his courtesy and kindness, give us a perspective view of the model seen from the north-east, and a plan, as yet unpublished, which will respond. The north-east portion of the city, the tableland from which the Quirinal, Viminal, and Esquiline hills descend (including the Baths of Diocletian, the Forum, the Imperial Fora, and a large part of public parks), and also the Janiculum and Vatican, are omitted. We are struck at once by the large space occupied by the public buildings (temples, baths, circuses, etc.), with which gardens are often associated, even in the central portion of the city. We must remember that the great gardens were mainly situated in the suburban districts which are not included in the view of the model. As is shown in the

plan of the city, the growth of Rome given by Dr. Thomas Ashby at the Town Planning Conference last October, almost all the emperors who reigned for more than a very few years increased the number of public buildings, and generally constructed a particular group of them; sometimes they encroached on the Campus Martius, in origin an open flat space by the river on the west of the Via Flaminia (the modern Corso), used as a drill and exercise ground; but often they erected their monumental edifices in more thickly-populated

quarters of the city, and this was especially the case with the successive Imperial Fora.

The period chosen is, indeed, thus described by M. Bigot himself in the brief *Notice sur le Relief de Rome Impériale*, which he has prepared for the use of visitors:—"The city is represented at the middle of the IVth century after Christ, the period at which its monumental aspect attained its highest development. The last great buildings constructed are the Basilica of Maxentius, which

The Palace of Diocletian at Spalato: The Mausoleum.
Restoration by M. Ernest Hébrard.



The Palace of Diocletian at Spalato :
View of the Peristyle in its present condition.

was inaugurated by Constantine, and the Baths of Constantine. The Emperor Constantine brings from Egypt the greatest of the obelisks, which now adorns the Square of S. John Lateran, and places it in the Circus Maximus, and this is the finishing touch. The edicts of Constantine have already dealt a mortal blow to Paganism: the temples are shortly to be closed; those which the fire destroys will certainly not be reconstructed. The churches, on the other hand, are rising from the earth [they hardly fall within the extent covered by the model]. The reign of Julian (360) checks for a moment the fall of Paganism and the progress of Christianity. On the eve of the barbarian invasions Rome has never been so fair." The moment of representation is indeed well chosen; the age of Constantine, while it marks a decadence in the execution of details and in the fineness of decoration, witnessed the solution of problems of construction which earlier builders had hardly attempted, and a new style of architecture begins.

Another point which strikes us at once is the extreme narrowness of the streets. We have to remember that the privilege of driving in a carriage within the city was an exceptional one, conceded to only a very few, and that cart traffic was mainly carried on at

night. The richer citizens went about in litters, the poorer on foot, so that wide streets were unnecessary, and we find narrow alleys like those which are seen in seaport towns on the Mediterranean at the present day. But even the main arteries of traffic seem of inconsiderable width to us who are accustomed to modern roads and vehicles; the standard width of a Roman high-road outside the city is only 14 ft., so that those ancient bridges which are still in use on the modern high-roads are narrower than the rest of the road, somewhat paradoxically, inasmuch as they were slightly wider than the rest of the road in ancient times. The Roman vehicles were obviously narrow, with a width of not much over 5 ft., and long narrow carts are still in favour in the Campagna.

But the narrowness of the streets had another object: to give shelter from the sun in summer and from the cold north wind in winter a fact of which it would seem that the city architects of modern Italy have been entirely oblivious. Modern traffic, and especially motor traffic, demands, it is true, a certain number of broad arteries and open spaces; but it ought to be recognised, at the very outset of the campaign in favour of the better planning of towns, that climatic conditions must be carefully considered, and

that in the south a very broad street, very large square, such as that in front of the new monument to Victor Emmanuel may, unless adequately shaded by trees, be a disadvantage rather than otherwise.

The model shows us another case in which the superiority of the judgment of the Roman architects is clear. At the Ælius, at any rate, and at certain points as well, especially in the vicinity of other bridges, the embanking walls of the Tiber were not, as now, perpendicular though to provide only for the river full, but there were two steps on each, so that, when the river was high, all eight arches of the Pons Ælius came into use; when it was at its normal level three flood arches and the upper remained dry; while, when it was low, the three large central arches were empty but there was always a regular and adequate flow of water between its banks. Now, on the other hand, when the river is low the current is distributed over too wide a bed and at some points mudbanks are formed for several years, indeed, owing to the calculations of the engineers, the left bank of the river at the island was silted up, there was serious talk of filling it up and abolishing it.

One or two other points strike our attention. The enormous Circus Maximus, the long line of the aqueducts crossing the Caelian hill, the more important ones, which came in at the highest level of the Esquiline tableland, (omitted), the walls and towers of Aurelian along the left bank of the Tiber, which are now completely disappeared; but a detailed consideration would take too long. There will no doubt be points upon which Mr. Biggs' opinions may be challenged and discussed, but the conscientious thoroughness with which the work has been done must always entitle them to respect; and it is fortunate that it has been possible to include in the exhibition this magnificent reconstruction, the fruit of years of patient labour of study of the monuments themselves, which for the first time places before our eyes an adequate picture of what we must believe that ancient Rome was. What may be the ultimate destination of the model, it is most earnestly to be hoped that a copy, if not the original, will remain available for study in Rome.

The model is so large that a special place has been set apart for it; but in the devoted to the City of Rome in the exhibition itself there is hung a very fine plan of reconstructed ancient Rome, executed by Chedanne, another old student of the V



The Palace of Diocletian at Spalato : Model of Central Avenue and Peristyle.

Turning to the consideration of M. Hébrard's model* and drawings, which are close by, we find ourselves in a not much earlier period. Diocletian's palace at Spalato must have been almost, if not fully, completed at the moment of his death on May 1, 305; and in it we find the dawn of a new architecture and a new style of decoration. It has a great interest for us, for our own Robert Maunier made it the subject of a monumental work, "Ruins of the Palace of the Emperor Diocletian at Spalato in Dalmatia" (London, 1891), which up till last year held the field as the best attempt at reconstruction available. His plan, though to some extent coloured by imaginary additions and adhering to a presupposed but often non-symmetrical, still holds good in its outlines even after the researches of archaeologists of the present day. Professor Niemann, of Vienna, has recently published a plan and drawings of what he thinks exists, with restorations of portions of the palace; while M. Hébrard has also published a plan, with complete restorations, upon the most careful study, and a convincing hypothesis as far as possible. His drawings, and a model based upon them, were exhibited at the Baths of Diocletian; the drawings, with a text in which M. Zeiller will co-operate, will be published in the course of the present year. Meanwhile, M. Zeiller has written a pamphlet to serve as an explanation of the exhibit (*Le Palais de Dioclétien à Spalato*, Paris, 1911), from which, with the permission of M. Hébrard, the illustrations are taken.

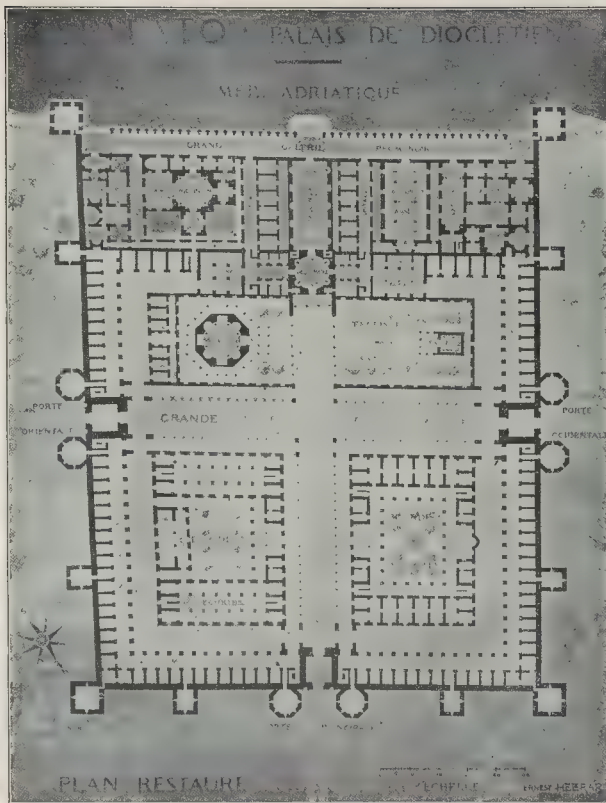
The building was neither a villa in the modern sense, nor a palace in the modern sense of the word, but was a fortified castle, resembling a Roman camp in plan; though M. Zeiller thinks it is not unlikely that the element was directly taken from some town as Antioch (we may add Aosta) to the comparison, both of which probably owe their origin to camps). It was enclosed by an almost rectangular enceinte, with square towers at the angles; in the middle of each side, except the side towards the sea, the south-west, was a gate flanked by two square towers, and there were other smaller square towers, one in each angle between the gate and the angle.

On the south-west side there was a portico, adorned by engaged columns, above which there was probably a balcony. The only exit on this side was a low postern in the centre, leading out to a small landing-place, and communicating by a narrow passage under the *tablinum* to the vestibule. In the centre two blocks of buildings in the north-east half of the enclosure, themselves intersected, roughly at right angles, by two blocks of buildings in the north-east half of the enclosure, themselves intersected by a walk which led round the walls, the space immediately adjacent to the latter being no doubt used for rooms. These two blocks were probably occupied, the one by the imperial household, the other by the servants' quarters, &c.

In the south-eastern half, however, the street did not run on, but at once turned into a peristyle, on the right of which was a sacred enclosure with a temple (now the Baptistery of the Cathedral), and on the left a mausoleum (now the Cathedral). See accompanying plan. Straight on was a circular vestibule, leading to the palace proper; and a passage opened to the domestic rooms, while going straight on the chief entrance-room, the *tablinum*, was reached. A very little remains above ground, but the study and investigation of the ruins, which are far better preserved, enabled M. Hébrard to form a very fair idea of the original disposition of the palace;

was actually executed by MM. Germain and others from M. Hébrard's drawings, on the scale of 1:100.

Palais Dioclétien à Spalato, Vienna, 1910.



The Palace of Diocletian.

Restoration by M. Ernest Hébrard.

and, though the names he has assigned to the individual rooms are not in all cases absolutely certain, they may be regarded as at least highly probable.

On each side of the *tablinum* is a group of six small rooms, deriving their light from a narrow court which separates them from it. These, on the analogy of a similar group of rooms at Hadrian's Villa, M. Hébrard supposes to be guest-chambers. Beyond them, on the north-west, is a large apsidal hall, probably the library or museum, running from north-east to south-west; it was not accessible directly from the *tablinum*, but only by means of the long covered promenade which, on the side of the sea (the south-west), replaced the strong walls and towers of the other three sides. Further on, again, is another smaller hall with an exedra, and then come the private apartments of the Emperor and the baths.

On the south-east the arrangement is not symmetrical, as Adam had supposed, but quite different. The principal hall on this side is cruciform, with its axis running parallel to that of the south-western façade, and an apse at the north-west, and the rooms surrounding it differ in plan from those on the other side; and beyond it, at the south-east extremity, is a self-contained group of rooms, which probably formed the women's quarters.

The Palace of Diocletian contains many remarkable innovations in architecture, such as the use of the arch resting directly on a column in the peristyle, the transformation, in the middle of the south-west façade, of a horizontal architrave into a semicircular archivolt, etc.—though M. Zeiller is wrong

(p. 50) in claiming that it offers the first example of the use of mosaic in the decoration of a dome: we may cite, as an example to the contrary, a nymphaum in the Roman Campagna, near the Via Tiburtina, described by Dr. Ashby in "Papers of the British School at Rome," Vol. III., p. 104. We shall therefore, welcome the forthcoming publication of MM. Hébrard and Zeiller's great work; and we may congratulate the French architectural students of the Villa Médici upon the splendid restorations that two of their number have been able to produce as a result of their studies there, with the hope that British students will one day demonstrate that they are capable of work of a similar character.

THE ROMAN FORUM.

In the *Times* of September 5 and 6 appeared two articles giving an exceedingly interesting résumé of twelve years' work of excavation in the "Foro Romano," based on the report now in preparation by Commendatore Boni in view of the International Archeological Congress to be held in Rome in 1912. Few spots on the surface of the Old World have been the scene for so long a period of an intense and constantly varying political and social life, and, consequently, subject to such frequent alterations in aspect, as these few acres of valley bottom. The greatest caution and experience is thus necessarily required in the work of exploration so as to obtain the maximum of information from the numerous strata of construction laid bare by the pick and shovel, and conclusions based on partial excavation have constantly to be revised in view of more exhaustive search.

It is therefore of great value to have this authoritative stocktaking, often a period of scientific investigation prosecuted with great activity and peculiarly rich in results.

The topics discussed resolve themselves into six heads. The first is the primitive cemetery near the Cloaca Maxima, containing examples of various types of early burial, and so old that it was a surprise to contemporaries even as early as Republican times when a portion of it was discovered in one of the rebuildings of the great sewer. The second is the identification by Commendatore Boni of the remains of masonry, consisting of great blocks of square tufa, intersected by the foundations of the Arch of Titus, with the Temple of Jupiter Sator, and of other foundations hard by with those of the Chapel of the Public Lares, the powers which stood in the same relation to the Commonwealth as the Lares Familiares to the family, representing as they did the reserve of the latent energy of the Roman people.

The third is provided by the massive concrete substructure of fortifications, traceable from the House of the Vestals to beyond the Arch of Titus, indicating the existence of two parallel walls with external towers, probably built by Aurelius in the IIIrd century. This work involved the destruction of aristocratic mansions of the Ist, in one of which a mosaic floor and basement with cubicles for slaves opening out of a central corridor have been identified.

A longer portion of the discussion is devoted to the "Tribunal of Trajan," which Commendatore Boni sees in certain remains found in the centre of the Forum on the same site as those of the base of the colossal statue of Domitian. Among these are two reliefs commemorating the proclamation by Trajan of largesse to the people, which are of great importance from the topographical point of view, for the Emperor is represented as standing in the Forum, and if an agreement can be arrived at as to their interpretation the exact position of many of the surrounding buildings will be determined beyond question. No such agreement is, however, yet established among archaeologists.

Of more archaeological than architectural import is the passage in Commendatore Boni's report in which he deals with the origin of the famous Niger Lapis, which he believes to have been placed as a propitiatory after the discords and bloodshed which occurred at the time of the Gracchi on the site of an old destroyed shrine. This had been carefully filled in with river gravel mixed with sacrificial ash and votive offerings before being covered by the black slab marking a *locus religiosus*, a spot of mourning and illness.

Architecturally, the most interesting passage describes the work done at the Basilica Amilia, which, thanks to the removal of a group of houses, it has been possible to explore—sufficiently, at least, to make it clear that this magnificent structure fell in a single day, as the result, probably, of an earthquake. The tangled mass of material accumulated on the floor is far too bulky to be removed except by slow degrees, but the main lines of the building can now be reconstructed with tolerable certainty from what is uncovered, in the light of the drawings made at the Renaissance of the portions of the façade then still standing. In front of the portico ran a line of fourteen *tabernæ*, richly decorated with marbles, corresponding with the bays of the portico behind, and forming a projecting ground story parallel with the *Sacra Via*. This was the only portion restored in the Vth century after the disaster. The rest was abandoned in despair, but utilised as a quarry first for the decoration of the new Rome on the Bosphorus, and later of the newer Rome of the Renaissance. It appears to have been "divided into three naves by two lines of very large columns of African breccia surmounted by Corinthian capitals. These columns supported richly-carved crossbeams, above which rose another line of slender columns, which in their turn supported the cornice and coffered ceiling. With the exception of a very few broken shafts of columns, still standing on white marble bases, everything lies buried in inextricable confusion. Here and there can be seen the foliage of capitals, pieces of most delicate tracery, and the mouldings of bases, architraves, and cornices. But for the

most part the mass of ruins seems jumbled beyond all hope of disentanglement—the delicately cut acanthus of white marble capitals lies next to a shaft of cipollino, flaking off like leaves from a book, or a great column of breccia, disintegrating into its component parts; and all these are mixed up with the crumbling blocks of the tufa walls." The old pavement was formed of "great squares of Chian and Numidian marble bordered with bands of cipollino."

The *Times* articles close with a well-deserved tribute to Commendatore Boni, not only as a learned and imaginative archaeologist, but as an excellent and withal tasteful curator, "for the Forum is really beautiful, thanks to the skill with which vegetation has been used to hide the scars of excavation, the debris of the least important remains, and, above all, the modern work of necessary restoration."

HISTORICAL NOTES.

An Architect-Painter. ONE of the water-colours in the South Kensington Museum is "The River Orwell, and the Bridge near Ipswich," by James Harrison, who "exhibited landscapes at the Royal Academy, 1827-46." Mr. Ralph Thomas, in *Notes and Queries* for September 9, identifies the artist as one who began life as a painter but found his living in architecture; one of his semi-successes being a design for the City of London Schools, which the Committee awarded the third premium.

Monumental Brasses. ONE of the most interesting features of the Ancient Art Section at the Earl's Court Exhibition is that devoted to the monumental brasses arranged by Mr. Walter E. Gawthorp, F.S.A. (Scott.). There are to be seen also rubbings of various periods and styles, including one after the XIVth century brass to Abbot Delamere at St. Albans, which is of Flemish workmanship. By the way, the Archdeacon of Oldham dedicated a few weeks ago, in Islip Church, Northants, the brass reproduced on this page, in memory of John and Anne Nicoll. It was designed by Mr. T. G. Gawthorp, and engraved in the workshops of Messrs. Gawthorp & Sons, who are now engaged on the restoration of some brasses at Magdalen College, Oxford.



Brass in Islip Church, Northants.
Designed by Mr. T. G. Gawthorp.

An Abandoned City. If any site might have seemed immune from the vulgarity of advertisement would be that strange relic of the past, the abandoned city of Les Baux, slowly expiring on the arid rocks of Provence. But no; one of the most prominent portions of this rocky eyrie has recently been cut into a smooth face and whitened to receive a cold advertisement. Les Baux is one of the curiosities of Europe. In the Middle Ages it was a flourishing city, ruled by a line of war barons, who claimed the kingdom of Arles, the county of Provence, and from whom the Houses of Orange and of Monaco are actually descended. The failure of water, the insupportability of the situation, and the general insecurity, rendering such a lofty perch unnecessary, have gradually reduced the population some 400, a tenth of its former size. But great castle and many of the buildings still remain. Among them are many of Gothic and Renaissance times. The latter include a graceful Protestant chapel, the only example left in France of a Huguenot place of worship. It notably renders Les Baux unique in Europe, though paralleled in Arabia and India, is that most of its ancient buildings are notably large portions of the castle and are cut out of the solid rock, and are, in fact, monoliths.

A City Church. THE Wren Church of Andrew-by-the-Wardour, where restorations have been in progress, will be re-opened on the 22nd inst. In the parish magazine the Rector writes:— "For the first time I am able to see the beauty of the richly-carved roof and its various designs. Right down from east to west to the centre of the slightly domed roof is broken a large circle of deeply-carved flowers and foliage, rivaling in beauty and richness of design the woodwork of Grinling Gibbons himself. Small triangular design surmounts each column which rises from the galleries to the ceiling, and a different design fills each triangle, though they consist in each case of cherubs' heads surmounting designs of fruit flowers. But those which strike one most of the carvings over the centre of each arch. The same designs for these are on both sides of the church. Let me begin at the west end, where keeping watch over the organ is an eagle with outspread wings standing on the open floor. The second design consists of two cherubs holding a large crown over some flowers; the third, cherubs sitting on clouds; the fourth, that of cherubs without wings, with a design of rushes entwined round them, while the fifth design, over the altar, is of a large white dove with outspread wings with a branch of olive leaves coming out of either side of its mouth."

The Penalty of Jerry Building. THE collapse of a wall and roof of a winter garden at the Music Hall at Nice, on Friday last, has resulted in several people being killed. It is thought that the work, which was being carried out in reinforced concrete, had not been given sufficient time to set before the internal fitting had been commenced.

The loss of life through the collapse of structure, though not a criminal offence, reminds one of the early days when such was the case. De Morgan, when making excavations at the tell or mound at the Acropolis at Susa, unearthed a large block of black diorite on which were engraved the Laws of Hammurabi, who lived about 2200 B.C.

This code, which gives the Laws of Babylon at that time, was engraved upon the columns in forty-nine long columns with introductory and concluding texts. Forty-four columns are still intact. Amongst others the laws governing building are given, and provided that the responsibility of unsound workmanship rested with the builder. If the builder erected a house which fell down and killed the owner the builder had to pay the penalty with his life. If one or more of the owner's slaves were killed the builder had to replace slave for slave, and if the owner's son were killed, the builder's own son was put to death. One wonders what happened when the builder had no son! The builder had also to pay compensation for damage to the property or utensils of the owner, and, further, had to rebuild the parts that had fallen down.

FEW of the tourists who visit Roman Paris are aware that, like Arles, Nîmes, and Autun, it possesses its Roman amphitheatre. Excavations made in 1870-3, near the Rue Mouffetard, with its reputation as the resort of cut-throats, brought to light the remains of the amphitheatre, which was situated in the 12th or 13th century A.D., and was the summer residence of the Roman Governor, remains of which are to be seen in the garden of the Musée de Cluny. They were outside the city proper, then, and led to the island in the Seine, and occupied the slopes of the hill, later known as Ste. Geneviève. The ellipse measures 180 ft. by 160 ft., and the structure, though less well-preserved than many other examples, has been extensively and judiciously repaired. After protracted negotiations, the municipality has finally come to terms with the owner of the land, and intends to make the amphitheatre accessible to the public, after clearing the arches of obstructing buildings. Whether proposed to utilise it for a revival of theatrical shows, or for bull fights of the type, or merely for the comparatively low-fights of Southern France has not yet been decided.

"THE steps which the London County Council is taking through its Superintending Architect's Department to further decay in the stonework of that relic of Old London, the York gate, have not been taken a moment too soon, even as it is, many of the features of the stone-carving have altogether disappeared," says the *Antiquary*. "It was the Society for the Protection of Ancient Buildings, with its headquarters in the neighbouring Buckingham-street, which urged the Council to apply preservatives. The Council's information, at the Council's request, that the best method of resisting the decay of stone-work has been found in repeated washings of baryta and lime, with a final wash of ground lias blue lime slaked in water, care being taken to avoid the unsightly appearance left by the baryta treatment. This has been the means used to further decay of the famous XVIIIth-century garden-front of St. John's College, Oxford, work which was finished last year, and the treatment has also been employed with satisfactory results on the tower of Westbury Church and at Codrington Parish Church. It is understood that the water-gate will be treated on similar lines." Whether the cleaning is judicious or not, the immediate effect of the treatment is not satisfactory. After treatment, the structure has been patched by masons, and the Nicholas Stone, who so ably carried out the intentions of Inigo Jones, the old-time shadows have vanished, and the masonry of its mellow if grimy appearance, which has lost some of its fascination.

EARLY last year (writes Mr. R. E. Carr, British Vice-Consul) excavations were started by Government on the site of this marvellous Moorish and pleasure city, built in the 13th and razed to the ground shortly after the battle of Alarcos, and four miles from Cordoba, at the foot of the Sierra, and enclosed in a series of about four terraces, and a large extent of ground. In the 12th and 13th centuries the Hieronymite used the ruins as a quarry for the building of their magnificent monastery close to the city, which is itself now in ruins, and it is believed that a great deal of the marble was burnt by the Moors to make lime. A quantity of interesting carvings carved in stone, for wall decoration, in perfect condition, has been unearthed, as well as broken glass and pottery. The excavations are being carried out with far too scanty funds. Various legends exist of this wonderful place, the ruins of which have been called by the people "Old

Cordoba" from time immemorial, though it was known by the learned to be that of Medina Azahara.

St. Jean, Troyes.

THE old city of Troyes is peculiarly rich in churches of historical and artistic value. Some may be purer in style or more imposing in their proportions, but few present a more varied series of interesting features than St. Jean, whose southern side is seen in the accompanying figure. Its bells rang for the marriage of Charles VI. of France with Isabel of Bavaria, a princess who contributed largely by her selfishness and unpatriotic conduct to the miseries of the Hundred Years' War, and again later for that of her daughter Catharine, who brought as her dowry to our Henry V. no less than the crown of France. Troyes was visited by a disastrous conflagration in 1526, which necessitated the rebuilding or restoration of many of its churches, and thus gave free scope for that school of Renaissance church design which flourished with such brilliance in the district. St. Jean,



Belfry, St. Jean, Troyes.

however, which dates principally from the XIIIth and XVth centuries, seems to have been more considerably worked upon some half century later.

Among its curiosities are the replacing of the medieval tracery in some of its choir windows by Renaissance substitutes simulating a skeleton structure with slender pilasters and pediments, of by no means ungraceful effect, and the picturesque clock turret seen in the foreground of our illustration. The church has recently suffered severe damage by the fall—an event long feared—of the steeple shown in the background. The ancient tower, no longer able to carry the heavy slated timber belfry of a type common in the district, tottered under its load and disburthened itself of it on to the house on the opposite side of the street, on which it rested like an extinguisher, while the bells were deposited in the attic, and the chimney-stack was spitted on the finial.

The Villa of Horace.

EVER since the Renaissance the site of that country villa in the Sabine Hills, which was so dear to the heart of Horace, has been a subject of keen interest and debate among archaeologists. It appears that the French School in Rome has at last discovered its remains. The following is a translation of a note on the subject in the current number of *Archæologia*:

"The researches made to identify the site

of the villa made it possible to place it at Vigna di Corte, in the neighbourhood of Licenza. The excavations carried out in that district have actually resulted in the discovery of sure evidence of the poet's residence there. The finds include fragments of primitive walls and a mosaic pavement of the age of Augustus. The villa occupied the summit of a hill bounded on two sides by the little river Digentia. The dwelling-house was preceded by a garden of considerable size surrounded by arcades. In the centre of the garden a tank, 20 metres long, was found communicating with the river. On the left the imposing remains of a farm are still visible. A *frigidarium*, a large elliptical plunge-bath, and the *calidarium*, have been uncovered. The central building of the villa, containing splendid mosaics, extends as far as the banks of the Digentia. The remains found in the interior lead to the conclusion that it was rich in marbles and mural paintings. A considerable number of fragments of artistic value have been collected."

Unless these splendours were, to any large extent, added by Horace's successors, which is, of course, possible, all this tends to show that his country home was not quite the simple little affair, the unpretentious retreat amid the rusticities of a hill farm, that the genial old Roman poet depicts for us in his verses.

St. Séverin, Paris.

THERE is a half-forgotten corner of Paris on the south bank of the Seine, hard by the stateliness of the Boulevard St. Germain and the gay student life of the "Boul. Mich.," but apart from both, a tangle of tortuous and ancient streets clustering round the Church of St. Séverin. This picturesque district is likely to be dragged from its obscurity and smartened up in conformity with its more up-to-date neighbours by means of a brand-new street driven through its heart. The change hardly seems to be demanded by the necessities of traffic or sanitation, and Paris would lose thereby one more bit of her old-world charm. St. Séverin, which is one of her not very numerous mediæval churches, and has inspired some of Huysmans's poetical pages, has much that is interesting about it. Though it has never been of first-rate importance, its history dates back over a thousand years. It may have been the successor of a chapel attached to the old Palais des Thermes, and certainly existed in the year 700, when it benefited by a large legacy from a certain Ermytrude, a wealthy lady of Paris. Nothing, however, remains of so early a date, and the present fabric consists of a picturesque amalgam of various periods, grouping picturesquely with the surrounding weather-beaten houses, and it is to be feared that when deprived of their companionship and thrust into the garish day of a modern thoroughfare it will lose much of its meaning.

Three bays of the nave are of the XIIIth century, other portions date from 1347 to 1439, and the choir is of the flamboyant work of the late XVth century. The building was not, even then, at the end of its transformations. In the reign of Louis XIV. that great heiress, "La Grande Mademoiselle," in a fit of piety, bestowed a new decoration upon it. A scheme was drawn up by Le Brun, the decorator of Versailles, for turning its Gothic barbarities into something less glaringly out of fashion. Its pointed arches were disguised in a casing of marble, with ornaments of gilded and painted stucco, and a new altar was provided with a baldacchino reposing on eight marble columns with bronze enrichments, and sculpture by Tubu.

More recently still, in 1840, the portal of the destroyed church of St. Pierre-aux-Bœufs was removed from the precincts of Notre Dame and affixed—much restored, and without rhyme or reason—to the façade, to replace, perhaps, its two famous stone lions which gave rise in the Middle Ages to the legal phrase, "*Datum inter duos leones*," found in monkish judicial documents.

St. Séverin, almost alone among Parisian churches, retains some vestiges of a cloister whose arches, partly built up, partly ruined, surround the Curé's sad little garden, its only rival being the "Cloître des Billettes" in the Marais, now the appurtenance of a Protestant place of worship.



THE BUILDING TRADE.

RECENT WORKMEN'S COMPENSATION CASES.—II.

Dependency.

IT is satisfactory to find that the decision of the Court of Appeal in *Keeling v. New Monckton Collieries, Ltd.*, on which we commented adversely (the *Builder*, February 3), has been reversed by the House of Lords. It was a case in which a man had left his wife and children in 1888 and never contributed at all again to their support before he met with his death in 1910, and yet the Court of Appeal had held that as his widow, she was a dependent and could claim compensation from his employers at the time of his death. This finding was based on the presumption of law that a husband is bound to maintain his wife, but the House of Lords have now held that, to render a wife dependent under the Act, this legal presumption does not alone suffice, but must be supported by fact. We commented on the extraordinary burden laid upon employers by the decision of the Court of Appeal, and it is satisfactory to find that the House of Lords should have held it erroneous.

In the case *Jobson v. Cory & Sons, Ltd.*, the Court of Appeal have decided a point under the new Act which had received decision under the Act of 1897, in the case *Williams v. the Vauxhall Colliery Company, Ltd.* (the *Builder*, July 6, 1907). A workman, injured by accident, and having been paid compensation, had had the payments terminated in an arbitration by the County Court judge on the ground that he had recovered. He subsequently died, and his dependents claimed compensation. The proceedings terminating the payments, to which the deceased man was a party, were held not to debar the dependents from claiming, as they have an independent right to compensation, although credit must be given for the sum paid to the deceased as compensation. Of course, the death must have been caused by the accident, but in our note to the former case we pointed out the important bearing these decisions have on policies of assurance. In some policies the claim has to be put forward within a limited specified time of the accident, whilst in others payments are only to be continued for a certain period, and then be commuted, after which all liability on the part of the assurer is to cease. In such cases as the above awkward questions may arise between the employer and his insurers.

Incapacity.

The recent case of *Cory Brothers, Ltd., v. Hughes* (current "Law Reports") is a very unsatisfactory decision from the employers' point of view. On January 31, 1906, a collier sustained an injury to his right hand, and was paid 12s. 1d. as compensation until August, 1908. His employers then found him light work at the same or slightly higher wages than he was earning before the accident. He worked at various kinds of light work until April, 1910. The work he was then engaged upon was of a nature that involved no exertion, but to get to the place of work he had to walk up hill, and, owing to a diseased heart, he was unable to do this, and ceased working, and obtained registration of the verbal agreement made in February, 1906, under which he was originally paid compensation. The employers then applied for a termination of the weekly payments from the time he had ceased working. It was proved that the heart disease had no connexion with the accident, but yet the County Court judge, whilst accepting this as a fact, awarded 10s. compensation as from the date the man had ceased work. The Court of Appeal approved this finding, holding the man to be suffering from incapacity, the result of the accident, and that it lay upon the employers to prove that that incapacity had ceased. The decision appears, however, to have the effect of imposing upon employers a liability for disease if once a man has been injured. Here the man, after the injury to his hand, seems to have had left him some earning capacity; for nearly two years he had earned something at light work, quite

apart from the consideration as to whether the wages actually paid him—which were the same as he had received before the accident—represented exactly his true earning capacity. Heart disease further impaired this remaining earning capacity, but the employers are held liable in nearly the same amount, as when the man had no disease. It is little to be wondered at that employers are every day becoming more chary of employing men not in the finest condition of age and health.

Serious and Wilful Misconduct.

Under the new Act of 1906, as we have frequently pointed out, serious and wilful misconduct on the part of a workman affords no defence to the employer where an accident results in death or serious and permanent disablement.

This extraordinary provision gives rise to questions of extreme complication, as it now becomes necessary to determine whether the act of serious and wilful misconduct takes the man out of the sphere of his employment or whether the misconduct has merely taken place within the scope of the employment. An employer giving strict orders where and how a man shall do his work might reasonably believe that when a man acts in contravention of his orders that man would be outside the scope of the employment and outside the ambit of the Workmen's Compensation Act, but two decisions in the current "Law Reports" will serve to show that the law is not so simple.

In the case of *Harding v. Bryndda Colliery Company, Ltd.*, a collier was employed in the "bogey," a passage above a "top hole," or working, to cut a hole from the "bogey" into the "top hole" to allow gas to escape from the latter. In accordance with rules made under the Coal Mines Regulation Act, 1887, the working, or "top hole," had been blocked up with boards, and it was understood that any man was forbidden to enter a working so blocked. In the course of drilling the hole from the "bogey" the man asked the foreman's leave to enter the working from below, and leave was refused. Nevertheless, the man, who wished to ascertain whether the hole was being drilled in the right direction, entered the lower working and was asphyxiated. The Court of Appeal, by a majority, held that the man's dependents were entitled to compensation, as, though he was guilty of serious and wilful misconduct, he was acting within the scope of his employment. This finding appears to be based upon the fact that when he met with his death the man was engaged in doing the particular operation he was employed to do, although doing it in a manner prohibited by his employers, and the two Lords Justices distinguished this case from that of *Weigall v. South Hatton Coal Company, Ltd.*, where a collier went to a place different from that to which he was ordered and hewed coal there, and was held outside the course of his employment. Lord Justice Buckley differed, and we regret that his view did not prevail. What can be more disastrous to the safety of workmen than to prove to employers that regulations made and enforced for the men's own security can be disregarded and compensation nevertheless be obtained? If an employer instructs a man to do an operation in a particular manner, and the man persists in taking another course, should he not be held just as much outside the course of his employment as if he was doing some totally different operation? The only common-sense answer to this proposition appears to be in the affirmative. For other cases on this thorny question we may refer our readers to *Brice v. Edward Lloyd, Ltd.* (the *Builder*, July 31, 1909), *Pope v. Hills' Plymouth Company, Ltd.* (the *Builder*, July 9, 1910), and *Barnes v. Nunery Colliery Company* (the *Builder*, February 3, 1911). The above were all cases where there was a deviation on the part of the workman from their duty apart from the performance of the particular job in hand, but in *Hopgood v. Olive Partington, Ltd.* (the *Builder*, July 9, 1910), will be found a

decision on the same lines as *Harding's*, where, in performance of the job in hand, a man disobeyed regulations.

Reference to Medical Referee.

The last case we need refer to is *Carroll Harrington & Co.* (current "Law Reports" Paragraph 15 of the second schedule to Act states that "any committee, arbitrator or judge may, subject to regulations made by the Secretary of State and the Treasury submit to a medical referee for report matter which seems material to any question arising in the arbitration." The regulations all contemplate a personal examination of a man by the referee, but in a case where a man had died the County Court judge admitted conflicting medical evidence on a question whether death was due to the accident to the referee, and the Court of Appeal have held that he had power to do so.

THE TRADE UNION CONGRESS.

THE Trade Union Congress was opened at Newcastle on September 4, and continued sittings throughout the week. The delegates numbered 521, as compared with 505 a year, and the membership was stated to 1,662,123, an increase of 14,418, despite withdrawal of the Amalgamated Society of Carpenters and Joiners. In 1909 the membership was 1,701,000, and in 1908 1,776,000.

A novel feature was the attendance of a representative on behalf of the Home Office, Mr. Shackleton, and the Board of Trade represented by three officials instead of one.

Those persons who anticipated unusual interesting debates on the labour problems the day at this Congress will certainly have been disappointed, and a criticism of some of the statements relating to the railway strike is rendered impossible out of respect to the Commission of Inquiry now sitting. Certain aspects of trade unionism in connexion with what strike may be said to be *sub judice* and at present any comment would be unbecomingly.

One point, having regard to the many serious strikes that have occurred during the past twelve months since the last Congress met, however, have struck anyone reading the report of the proceedings, and that the absence of any official and emphatic disclaimer of the many acts of violence and intimidation that have accompanied the strikes. During the currency of such strikes and especially when acts of aggression or violence call for civil or military intervention it is the custom for labour leaders to hasten to assure the public that the trade union workers take no part in *subjugation*, and that they are, in fact, rather the victims of hooligans, who intervene and prejudice the movement. If this be the case, it would appear that the Trade Union Congress afforded the very best opportunity for united public protest on the part of trade unionists against this wanton destruction of property, yet any such expression of opinion is absent from the presidential address reported, and the public are entitled to draw the inference that, even if the trade union members do not actually participate in the recurrent acts of violence, they, at least have not taken the opportunity of deprecating them as furthering their ends.

One other point arises in connexion with the presidential address, in which the President, Mr. W. Mullin, spoke of the suppression of any body of employers declining to recognise the unions. Here, again, the President appears to have purposely shut his eyes to facts only too apparent to the public. One of the chief arguments for the recognition of employers of the trade unions is that the unions favour collective bargaining by providing responsible leaders with whom the employers can treat. Yet what has been the history of many of the strikes of the past two years? The so-called leaders have been repudiated by the men; agreements approved

leaders have been rejected by the men; leaders have been powerless either to force the men or to restrain them within limits. It is also noteworthy that no action was offered of the fact that the way company which recognised the men far from having found its path had, had encountered more unrest and more than any other company.

the intolerance expressed by the part of minorities and the recognition of minorities by any government cannot be overlooked. Mr. Mullin is as having described the conscience of minorities as "the selfish spirit of the trade union," and it is only becoming too clear that the trade unions not only desire to break the rules of the societies and take the initiative in the existence of minorities amongst the members. The present labour unrest is largely a movement of the trade unions to obtain recognition. This being the case, it behoves the union leaders first to set their own order—to down the hooligan element, to control over their own members, to govern by their own constitutions, and to take responsibility for their acts. With so much to be done in these respects revolutionary speeches at the Congress are not only deprecated, but they serve to damage the union cause in the public eye.

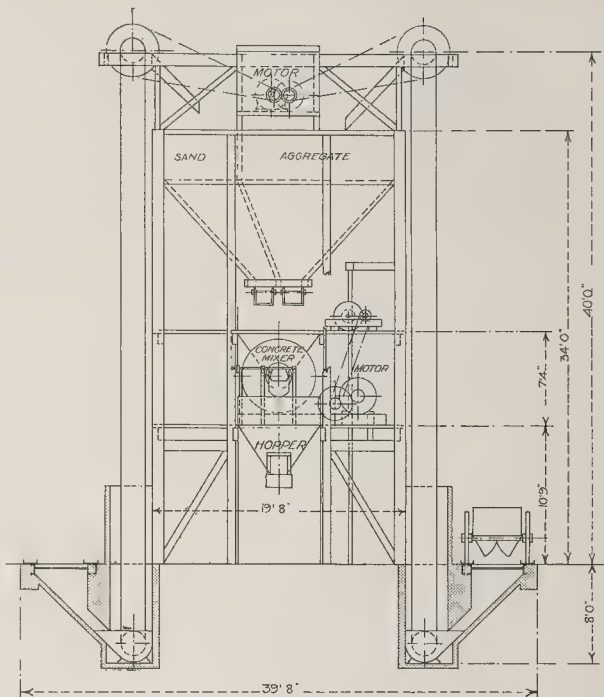
presence of representatives from the Ministry of Trade and the Home Office at the Congress was made the subject of rather a heated debate. Having regard to the character of the speeches delivered during the Congress, the presence of Government representatives at such meetings seems somewhat anomalous.

practical business of the Congress is shortly reported. The complete report of the Osborne judgment was called for, the usual motion for nationalisation was carried, the action of the Government in connexion with the railway strike being used as an argument in favour of nationalisation.

attitude of the Congress towards the Insurance Bill was somewhat curious. In the first place, a resolution that the insurance should be non-contributory was carried on a card vote by 940,000 to 825,000. But a resolution that the burden of the workers whose wages are less than £10 should be placed upon the employer and the Government was carried on a card vote of 408,000. Then Mr. Clynes moved a resolution dealing with questions, such as withholding benefit from persons in receipt of compensation, the appointment of a tribunal to adjudicate on the conduct of medical men, but which contained the Congress declares that State should be given according to the needs of industrious people, and therefore that persons with wages below 25s. should be called upon to contribute less than the others, or be relieved of all payment under the scheme. This resolution was carried by a show of hands. Thus, in the first half a day the Congress appears to have advanced from receiving the Bill on a voluntary basis to exempting a very large number from their full contribution or any contribution at all. Mr. Roberts, who opposed the resolution, is reported to have enunciated an extraordinary contention that the Workmen's Compensation Act should be amended to give injured workmen full wages instead of half wages. The labour leaders are slow in appreciating the disadvantage to the present Compensation Act to workers who are not in the prime of life and vigour, and although they have no objection to the dangers of malingering in the unions or friendly societies are content to see soon allow this principle to be applied when the burden is to be imposed on the shoulders.

resolution condemning the method of picketing in connexion with labour exchanges. The working of the exchanges, was the subject of it is stated that some miners' had unintentionally voted against nationalisation.

Brooks's action in introducing a Bill dealing with our disputes, some of the proposals which we dealt with last week, was by the Congress and the Bill itself was rejected.



Compact Concrete Plant.

By the suspension of the standing orders a special resolution was moved and carried congratulating the transport workers and the women's trade unions on the successes they had achieved. Mr. Roberts, the seceder of this resolution, did deprecate any disorder and excesses that might have been committed, but from the debates it is apparent that the general strike is to be the favourite weapon in the hands of the trade unions in the future to the detriment of that far wiser and more worthy method of settling disputes—conciliation. Of late years we have watched with approval the extension of the principle of conciliation, and much has been effected by its adoption, and a better feeling has thereby been cultivated between employers and employees, and it will be a national misfortune if the disastrous strikes of the last twelve months displace the more creditable methods of arriving at settlements in trade disputes. Whatever the immediate results of any particular strike may appear to be, it has to be remembered that they involve a dislocation of trade with evil effects, which in many cases are permanent. The country involved in strikes is losing trade daily to her foreign competitors, and, to quote the ancient fable, the disputants in the end are left quarrelling over the two shells of the oyster, whilst the oyster itself, the trade of the country and the profits from which wages eventually have to be paid, has passed into other hands.

The trade unions have useful functions to perform, and, as we have always admitted, perform certain of these functions well; under the Insurance Bill their administrative capacity will further be called into the public service, and it will be a matter for regret if ever they convert themselves into purely militant political societies. We have before observed that the debates at these Congresses hardly do the trade unions justice, and that, as at present conducted, they are detrimental rather than otherwise to the cause of trade unionism. On the present occasion, for instance, a serious debate on the Insurance Bill, and especially on that portion of it which relates to unemployment benefit, might have proved of considerable value and a welcome substitute for the discursive utterances on all kinds of questions which have characterised the proceedings at this Congress.

A COMPACT CONCRETE MIXING INSTALLATION.

THE plant illustrated on this page was specially designed for use in the construction of a building in a busy street and where storage accommodation could not be provided in the customary way. The object of the arrangement was to enable the contractors to prepare concrete rapidly and economically, at the same time guarding against delays due to lack of materials and against inconvenience from excessive quantities of materials.

As may be seen by the sketch, the plant consists of a framed structure including two construction towers, one for hoisting sand and the other for hoisting aggregate. In the middle, a bunker divided into two compartments, each with a discharge valve at the bottom of the hopper, receives the sand and aggregate, and delivers these into the concrete mixer below, which in turn discharges its load into a hopper, feeding trucks for distribution of concrete to different parts of the site. The storage capacity of the sand bunker is 25 cubic yds., and that of the aggregate bunker 50 cubic yds. The hoists and mixer are operated by electric motors.

Sand and aggregate are delivered by waggons with bottom discharge into the shoots shown, and at the foot of these they are raised by the two bucket elevators and discharged through shoots into the bunkers. The hopper below the mixer has the capacity of 4 cubic yds., thus providing a small reserve of ready-mixed concrete. Each elevator has the capacity of 85 cubic yds. per hour.

The arrangement is one of a type which may be found useful by builders having occasion to undertake reinforced concrete construction in cities and large towns.

"PEACEFUL PICKETING."

THE council of the Builders' Merchants' Alliance (Limited), after considering several cases of picketing, have agreed that the following resolution be sent to the Home Secretary:—"That the attention of the Government be called to the violence and disorder occasioned during the recent strikes by the intimidation of willing workers under the guise of peaceful picketing."

GENERAL BUILDING NEWS.

CHURCH, PLYMOUTH.

The Bishop of Exeter recently laid the foundation-stone of a new church at Cattedown, Plymouth. The church is being built by Messrs. W. Cowlin & Sons, of Bristol, from a design by Sir C. A. Nicholson, of Messrs. Nicholson & Corlette, London.

SECONDARY SCHOOL FOR GIRLS, DARLINGTON.

The new secondary school for girls, erected by the Darham County Council in Cleveland-avenue, Darlington, is now completed. The front elevation is of red brick, with freestone facings, and the interior of the building is heated with pipes from a large boiler in the basement, while the lighting is done by electricity. The building has been designed by Mr. W. Rushworth, F.R.I.B.A., the County Education architect, who has also supervised the erection of the school. The general contractors were Messrs. R. Blackett; the heating engineers, Messrs. W. Richardson & Co.; and the interior furnishing has been carried out by the North of England School Furnishing Company. Messrs. Cox Walker put in the electric-light fittings. Messrs. H. W. Bulmer, of Durham, and Mr. J. Chatterton, of Gateshead, were the clerks of works. The cost of the buildings, including electric lighting, heating, ventilating, tar paving, and the laying out of the grounds, was 11,862.

COUNTY SCHOOLS, ECCLESTON.

New County Council schools for the village of Ecclestone, near St. Helens, have been opened. The schools, which have accommodated for 100 boys and girls, have been built from plans by Mr. Littler, county architect, at a cost of 2,600, consist of three class-rooms, marching space, entrance halls, cloak-rooms, and teachers' offices, all on the ground floor. The building is one story high, faced externally with Ravenhead rusticated brick. The work has been carried out by Messrs. Jno. Rothwell & Sons, contractors, St. Helens.

NEW SCHOOLS, SUTTON VALENCE.

In the latter half of the XVIIth century, William Lambe, citizen and Clothworker, (who built the water-conduit near Holborn), founded a grammar school at Sutton Valence, Kent, which he placed under the conduct of the Clothworkers' Company. The Company continued the management of the school until about a year ago, when they transferred it to the United Westminster Schools, and agreed to contribute towards the cost of rebuilding the premises. The new buildings, erected by Messrs. Wallis & Sons, Ltd., of Maidstone, at an outlay of 30,000, after plans and designs by Mr. H. Percy Adams, were opened two or three weeks ago by the Archbishop of Canterbury.

HIGHER GRADE SCHOOL, LEVEN.

This school has been reconstructed from the plans prepared by Messrs. Haxton & Walker, architects, of Leven, and the additions include a central hall, suite of modern class-rooms, laboratory, and art-room. The work was carried out by the following contractors:—Masons, Messrs. W. Black & Son, Kirkcaldy; joiner, Mr. L. Swinton, Leven; plumbers, Messrs. Mills & McDonald, Edinburgh; plasterers, Messrs. C. Neaves & Son; slater, Mr. T. Black, St. Andrews; glazier, Mr. W. Allan & Son, Edinburgh; tile work, Messrs. H. Carron, Kirkcaldy; electrical work, Mr. O. Melville, Kirkcaldy; steel work, Mr. D. Haig, Kirkcaldy; heating, Messrs. James Combe & Son, Glasgow; painting, Messrs. J. C. Rolland & Son, Leven.

NEW SCHOOLS, STANWAY.

These schools have been erected at a cost of about 3,394, from plans prepared by Mr. J. W. Starr, F.S.I., architect, of Colchester. The work was carried out by Mr. Charles Deaves, contractor, of Bures, and the schools were opened last week.

NEW SCHOOL, UPPERMILL

The plans for these buildings have been prepared by the county architect, Mr. Graham, and the estimated cost of the whole work is about 4,500. The accommodation provides for about 250 scholars.

NEW SCHOOLS, DUFFRYN, EBBW VALE.

The estimated cost of erection of these schools is about 15,000, and the plans were prepared by Mr. Henry Waters, M.S.A., architect, of Ebbw Vale. The bills of quantities were taken out by Mr. Stanley Hatchings, of Risa; the electrical engineers, by Mr. W. Horsfall, A.M.I.C.E., of Ebbw Vale, and the general contractor was Mr. A. J. Colborne, of Swindon.

SWANSEA RAGGED SCHOOL.

Messrs. Thomas, Meager, & Jones are the architects of this new building, which is being

erected to take the place of the old school. The contractors for the work are Messrs. T. D. Jones, and the old building is to be demolished in order to extend the Central Police Station.

SCHOOL, GARW VALLEY.

A new school has been opened in the Garw Valley. It is designed to accommodate 156 infant scholars, and comprises four class-rooms, opening into a central hall; cloak-rooms are provided, as well as teachers' and caretakers' rooms, stores, etc. The floors of the class-rooms and central hall are laid with wood blocks, whilst the floors of the cloak-rooms, corridors, etc., are of adamantine tiles. The exterior of the building is faced with local stone, with Forest of Dean stone and brick dressings, the roofs being covered with North Wales slates. The building was designed by Mr. D. Pugh-Jones, F.S.I., county architect, Cardiff, under whose supervision the works have been executed by Messrs. E. W. Lougher & Co., of Pontycymmer, at a cost of 3,177. Mr. Thomas Roberts, of Pontycymmer, acted as clerk of works.

SCHOOL, HORWICH.

The foundation-stone of the new Lord-street Council School has just been laid. The school is being built at a cost of 4,000, furnished, and is to accommodate 400 infants. Mr. W. J. Slater, of Horwich, is the contractor, and Mr. Henry Liddler, of the County Education Department, the architect.

SCHOOL, RAINWORTH, NOTTINGHAM.

The Nottingham Education Committee have issued the statutory notice of their intention to provide a school for about 600 children at Rainworth, available for the parishes of Bilborth and Rainford. This school is necessitated by the opening up of a new colliery in the district. There will be no competition, as the work will be carried out by Mr. L. Maggs, F.S.I., Architect for Schools and County Buildings.

NEW PARISH INSTITUTE, LOWESTOFT.

Mr. H. C. W. Blyth, M.S.A., architect, of Lowestoft, is the architect for this building, which has been erected at a cost of 4,000, as a memorial to the late rector of Lowestoft, Canon Tupper-Carey, M.A. The institute is a two-story building, comprising a large hall, seven class-rooms, billiard-room, reading-room, etc. The contractors are Messrs. Mobbs Bros.

TRADE NEWS.

The Sheffield Corporation Waterworks Department have just placed a contract for thirty-two patent mechanical pressure filters and auxiliary plant, capable of dealing with a flow of 6,000,000 gallons per day, with the firm of Messrs. Mather & Platt, Ltd., of Manchester.

We are informed that "Ceresit" is being employed by the London & North-Western Railway Company for the waterproofing of two passenger subways at Stonebridge and Bushey; and Messrs. Vickers, Ltd., are about to use it for a large tank, which they are to construct at St. Albans. The tank, which will be of concrete, will be rendered with "Ceresit" mortar varying in thickness from 1½ to 2 inches; the total area of the rendering being 2,022 square yards, for which 500 gallons of "Ceresit" will be required.

The St. Matthew's schools, Tolworth, near Surbiton, have recently been fitted with a number of D. O. Boyd's hygienic ventilating school grates, supplied by Messrs. O'Brien, Thomas, & Co., Upper Thames-street, E.C., and Excelsior Works, South Bermondsey.

Under the direction of Mr. Ronald P. Jones, architect, 7, Stone-buildings, Lincoln's Inn, W.C., the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Unitarian Church Hall, North Finchley.

A clock with two 5-ft. dials, and striking the hours, has been erected upon the Parish Church, at Hartshorne, Boyle's Trent. The work has been carried out by Messrs. John Smith & Sons, Derby, to the general designs of the late Lord Grimthorpe.

Messrs. Samuel Wallrock & Co., have just let upon building lease the site of Nos. 8 and 9, Long Acre, and 16, Garrick-street, W., at a ground rent of over 800l. per annum, for the erection of a block of business premises.

The Derwent Joint Small-pox Hospital, Cumberland, is being supplied with Shorland's patent exhaust roof ventilators and special inlet ventilators by Messrs. E. H. Shorland & Brother, Ltd., of Failsforth, Manchester.

Messrs. J. & A. Ogilvie, of Union-street, Aberdeen, the makers of the oak screen which forms the background of the memorial (illustrated on another page this week) to

Edward VII. in Crathie Church, have Lo showrooms at Van Straaten-buildings, Little Britain, E.C. This branch of business is under the control of their agent, Mr. J. Edwards-Stevens.

MANCHESTER BUILDING TRADE.

The unrest in the ranks of labour has led to the building trade, and a strike of sections connected with the industry in Manchester is threatened for next month. Do the last few days the Executive Comm. of the National Association of Builders and Labourers has been meeting in Manchester and at a meeting held in St. Michael's School, George Leigh-street, on the 11th inst., it was announced that the masters have been asked to give a minimum of sixpence an hour to all general labourers, of 6d. to bricklayers, labourers, and 7d. to scaffolders, mill iron-fitters, and other special labourers. S. employers are already paying the minimum of 6d., but others are said to have a shilling, under which the men cannot exist their wages until the payment is made, of numerous complaints made against a of the employers is, that they charge men a weekly sum for the use of wheelbarrow.

During the last few weeks over 600 gen labourers have joined the Union, and additional expected this week will result the majority of the labourers in the being union men. Joiners, bricklayers, w cutting machinists, and others are joining the demand for increased pay, and in a speech on the 11th inst. Messrs. P. H. H. (general secretary of the Labourers' Ass'n), J. Cavanagh (Hall), J. Doyle (organizer), E. Donohue (Building Industry Federation), and F. Love (Painters' Union) said all various sections will stand together. The feeling is to declare a strike of all connected with the building-trade if the employers not make a favourable response to the demands by October 2.—Manchester Guardian.

SCOTTISH BUILDERS' FEDERATION.

The seventeenth annual general meeting of the Scottish Building Trades Federation held in the Imperial Hotel, Aberdeen, on 8th inst., when Mr. David Wilson, President J.P., Edinburgh, presided. The secret Mr. T. Ferguson, solicitor, Edinburgh, presided, in submitting the report, stated the relations with the operatives were satisfactory, but there were indications of an probably as a reflection of what had occurred in other industries. The National Bill had received the careful consideration of the Executive Committee. There was no industry in the Kingdom that had been more adversely affected by recent legislation than the building trade. Believing that Bill would place further heavy burdens on the trade, and that during a period abnormal depression, the committee was unanimous in their opposition.

The meeting considered the subject of contracting. The system was becoming prevalent in Edinburgh and Glasgow, especially in connection with buildings erected by public bodies. Strong protests had been received from Glasgow and Edinburgh associations. Suggestions were made, and ultimately was decided that representations should be made by the federation to the Board of Works and to public bodies in Edinburgh and Glasgow, protesting against the system.

THE LORD MAYORALTY, LEEDS.

Mr. W. Nicholson, builder and contractor of Leeds, has consented to be Lord Mayor of the city for the coming year. Mr. Nicholson is an energetic member of the City Council, and he has been a Past President of the National Federation of Builders and Contractors.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Slaughter house building, Hutchison-street, (2,150l.); Mr. John R. 204, Union-street, Aberdeen.

AMMANFORD.—Amman Valley, and Panrall Schools, (4,000l., 3,000l., and 2,800l.); Mr. Morgan, architect, Spilman-street, Carmarthen. Additions to public school (1,400l.) Architect, care of Clerk, New Malden School Board.

BALLYLESSON.—Medical officer's residence, dispensary (1,560l.) Clerk, Board of Guardians, Linsburn.

BARNSTAPLE.—Workshops, Newport-road, the Barnstaple Cabinet Company. Bedford.—Moravian Church, Queen's Park, Mr. A. E. Allen, architect, 31a, Bridge-street, Barnbury; Messrs. J. Corby & Son, building, Tavistock-street, Bedford.

BEDMINSTER (Bristol).—Catholic school

* See also our list of Competitions, Contractions, etc., on another page

Mr. G. Bevan, architect, 36, Cornhill, Bristol; Mr. J. Bryer, junior, builder, Exeter.
 Suites of offices, Donegall square; Messrs. Blackwood & Jury, architects, 41, Donegall, Belfast. Residence, Malone-road; Messrs. Young & McKenzie, architects, 7, Marlborough West, Belfast; Messrs. Court, Co., builders, Shaftesbury-avenue, Belfast. Warehouses for Mr. William Cleveland Messrs. A. Bulloch & Co.; Messrs. Blackwood & Jury, architects, 41, Donegall, Belfast.
 Church and schools, Victoria. Architect, care of The Congregational Committee.
 Proposed model workmen's dwellings. Mr. George Symon, Surveyor, Blaydon District Council.
 Courthouse and Police Station. Mr. J. E. Fursland, builder, Bristol. Bridgewater. Masonic temple (2,000); Messrs. Sunson & Coulthurst, architects, Exeter.
 Cold storage and ice making building (2,000); Messrs. H. Williams & Co., engineering, 3, Salters Hall court, Kent). Catholic church (2,500); Goldie, architect, 31, Upper Phillimore-gate. Alterations to offices, Wesleyan for Messrs. Goldman Bros. Alterations for Messrs. Bickford-Smith.
 Additions to premises of Messrs. R. Carlisle, wool and seed merchants. Messrs. J. Barbour & Bowie, architects, 5, Buccleugh-street, Dumfries.
 Extensions to public school; Mr. George Gray, architect, Invernesshire.
 Additions, isolation hospital; Mr. Mackip, Surveyor, Cheadle Rural District Council.
 Baths (Bucks). Proposed baths; Mr. Dornier, Surveyor, Chesham Urban Council.
 Four (near Oban).—Rebuilding of Corn Hotel (3,000); Mr. J. G. Harve, architect, Oban and Fort William.
 Brook—Wesleyan Reform School (650); Mr. D. B. Jenkinson, architect, Oban; Mr. L. Brierley, builder, 24, Cross-street, Malsbrough, Rotherham.
 Swimming bath; Mr. J. B. Harve, Surveyor, Davenport Town Council.
 New lecture hall, Sandwith-street, Thomas's Church; Messrs. Blackwood & Jury, architects, 41, Donegall-place, Belfast.
 The following plans have been passed:—Thirteen houses off Northfield-road; Messrs. J. A. & F. Harvey, Workshop, Junction Messrs. Crew & Co. Alterations to Swan Inn, Castle-street; Messrs. T. & D. Whane. Alterations and additions to Aston road; Messrs. Chilton Bros. Addition to warehouse, King-street; Messrs. J. A. & F. Harvey. A plan has been passed as follows:—Three houses, Diddale; Mr. H. Nicholson.
 Lodging-house, Risk-street (215); Mr. James Bell, architect, 8, Merry-Motherwell.
 School (3,000); Mr. W. Rush, architect, Shire Hall, Durham.
 School (1,000 places); Mr. T. Secretary, Education Committee, Urban District Council.
 Emmanuel Parish Hall (5,000); Mr. J. Pinn, architect, Bedford Circus.
 Mr. E. C. Led, builder, Buddle Park. National Provincial Bank of England; Mr. J. H. Brewerton, architect, and chambers, Bournemouth; Messrs. H. Austin & White, builders, Somerset. Picture palace, King-street; Messrs. Henderson & Brown, architects, Wesley street, Bolton.
 Academy (3,000), and additions for schools (2,000); Mr. John Whittall, architect, High-street, Elgin.
 Memorial Church (10,000); Mr. McGregor Chalmers, architect, 85, Foot, Glasgow. Additions to baths; Mr. A. Watterson, Surveyor, Forfar Council.
 Buildings near hospital; Mr. H. Leslie, Clerk, Board of Guardians.
 Clubhouse, Dumbreck-road, for the Castle Golf Club.
 Extensions to tapestry department, Mills (1,500); Messrs. Nicholas & Museum-chambers, Halifax.
 Warehouse, etc., Fluxman-garden.—Waving-shed, etc., Fluxman-garden; Mr. W. Tattersall, architect, 1,000; Messrs. Haslingden. Picture-drome; Messrs. Booth & Son, architects, 42, street, Haslingden; Mr. T. Brown, Whitcraft-avenue, Haslingden.
 Additions to Mount Pleasant

Congregational schools, Messrs. Coussens & Ruthwell, Cambridge road, Hastings. Proposed secondary school for girls; Mr. P. O. Buswell, Secretary, Education Committee, Hastings Town Council.
 Helensburg.—House and shops, Princes and Sheldale streets (4,000); Mr. W. Hunter M. Nab, architect, 121, West George-street, Glasgow.
 Hillingden.—Buildings (1,726); Mr. C. F. Kearley, builder, 31, Carnaby-street, Regent-street, W.
 Hoddlesden.—Winding-house for Messrs. J. Place & Sons, Ltd.
 Hove.—Additional ward block at sanatorium (2,580); Messrs. J. & M. Patuick, builders, Wandswoth. The following plans have been passed:—Twenty-five houses, Tandridge and Tennis roads; Mr. S. H. Burdwood for Mr. T. Richards. A plan has been passed for Mr. A. Carden, for Mr. E. W. Dinick, for a picture theatre, Western-road.
 Hyde.—Additions to dye works, Hyde Junction, for Messrs. Driver, Goodier, & Co. Inverness.—House, Hill-street (2,100); Mr. T. Munro, architect, Academy-street, Inverness.
 Kildermister.—Alterations to girls' school, Coventry street (250); Mr. E. Harris, builder, Kildermister.
 Kilnchapel.—Alterations to public school for the Campbelltown School Board.
 Kingswood (Bristol).—Methodist church (4,000); Mr. W. H. Dinsley, architect, 12, Cleveland-street, Chorley, Lancs.
 Kintbury.—Memorial hall (600); Mr. W. A. Raine, Surveyor, Hungerford (Berks) Rural District Council.
 Leagrave.—School (250 places); Mr. F. Spooner, Secretary, Education Committee, Beds. County Council, Bedford.
 Lindale-in-Cartmel. Enlargement of parish church (1,686); Architect, care of the Churchwardens, Lindale-in-Cartmel Parish Church.
 Lisal.—School (300 places); Mr. T. Samuel, Secretary, Education Committee, Wallasey Urban District Council.
 Liversedge.—Wool warehouse, Providence Mills, for Messrs. Pyrah & Sons.
 Llandudno.—Proposed chancel and chapel at Holy Trinity Church.
 Longside.—School (3,000); Mr. S. Fordyce Anderson, 1, Crown-terrace, Aberdeen.
 Mallow.—Fifteen houses (136, each); Mr. Francis Hegarty, builder, care of the Surveyor, Mallow Rural District Council.
 Manchester. Proposed three branch Carnegie Libraries; Mr. Henry Price, architect, Birmingham Town Council.
 Mansfield, Woodhouse.—School (7,527); Mr. J. Greenwood, builder, Mansfield.
 Middlestone Moor.—Institute (3,000); Messrs. Johnston & Son, architects, Cockton-hill, Bishop Auckland.
 Monkseaton.—Extensions to railway station; Mr. C. Harrison, engineer, Railway Station, Newcastle.
 Monkton (Ayrshire).—School (1,300); Mr. W. W. Reid, architect, Main-street, Prestwick.
 Nantyglo.—Institute and library (1,200); Mr. Neat, architect, Brynmawr; Messrs. Jenkins & Sons, builders, Brynmawr.
 Newcastle.—Block of offices; Messrs. Cackett & Burns Dick, architects, Westgate-road, Newcastle; Messrs. Davidson & Miller, builders, Ridley Villas, Newcastle.
 Newton-in-Makerfield. Isolation hospital (1,800); Mr. A. Bowes, Town Hall, Earls-town.
 Norton.—Pavilion, Norton Playing Field (530); Managers, Sheffield Training College.
 Nunaton. Proposed dining-hall (1,600); Architect, care of Mr. C. Blakeway, Board of Guardians, Nunaton.
 Oban.—Conversion of wool mills into house and public hall; Mr. Hugh M'Dougall, builder, Oban, N.B.
 Oldham.—Schools (6,000), in connexion with St. Mary's Roman Catholic Church, Oldham.
 Portsmouth.—Extensions to workhouse infirmary (42,890); Mr. E. H. Mitchell, Portsmouth Board of Guardians, Southampton.
 Radcliffe.—Weaving shed for the Radcliffe Co-operative Wholesale Society.
 Rathdown.—253 houses; Surveyor, Rathdown No. 1, Rural District Council.
 Redditch.—School (6,450); Mr. A. Vernon Rowe, architect, care of Mr. A. W. Priestley, Secretary, Education Committee, Worcester-shire County Council, Worcester.
 Rhyme (Aberdeenshire).—Extensions to school (2,000); Messrs. Brown & Watt, architects, 17, Union-street, Aberdeen.
 Richmond.—Receiving homes for children (2,740); Mr. Edward J. Partridge, architect, Bank-chambers, Richmond; Messrs. Speechley & Smith, builders, Excessor Works, Richmond.
 Reconstruction of the Star and Garter Hotel; Messrs. W. A. Lewis & W. R. Waters, architects, 11 and 12, Finsbury-circus, E.C.
 Rochdale.—Proposed new General Post Office (2,000); H.M. Office of Works, Storey's Gate, S.W.

Salton Bagthorpe.—Alterations to school, also new school (3,220); Mr. J. Greenwood, builder, Mansfield.
 Sheffield.—The following plans have been passed:—Public wash-houses, rear of Upperthorpe Baths; Mr. F. E. P. Edwards, City Architect, Sheffield City Council. Warehouse, John-street, for Mr. D. Davies. Twelve houses, Linscott-road, for Messrs. Highton & Son. Four houses, Middle-road, for Mr. J. Sanderson. Warehouse, Attercliffe-road, for Messrs. T. Andrew & Co. Eight houses, Riverside-road, for Mr. J. Samuel. Additions and alterations to premises, Bramber-street, for Messrs. Mappins' Mashro' Old Brewery Company. Six houses, Meadow-lane, for Mr. S. Taylor. Five houses, Cruise-road, for Mr. James Samuel. Five houses, Withens-avenue and Overton-road, for Mr. W. J. Pratchett. Four houses, Melrose-road and Couper-road, for Mrs. Annie Taylor. Additions to premises, Stevenson-road, also additions to premises, Livingstone and Bessemer roads, for Messrs. Jonas & Colver, Ltd. Workshop and additions to offices, Bernard-road, for Messrs. J. & F. Hill. Three houses, Dobbin-hill, for Mr. David Davies. Stores and additions to office, Brightside-lane, for Messrs. W. Jessop & Sons, Ltd. Alterations to Old Tontine Hotel, Dixon-lane, for Colonel Sir J. E. Bingham. Sixteen houses, Carnaby-road, for Mr. G. E. Phillips. Three houses, laundry, and assembly-room, Blackbrook-road, for the Ecclesall Board of Guardians.
 Shepton Mallet. Infectious diseases hospital, laundry, and disinfecting block; Mr. A. J. Pictor, architect, Bruton, Somerset; Messrs. Doddimead & Son, builders, Shepton Mallet.
 Shirey Row.—School; Mr. J. W. White, builder, High Barnes Works, General Graham-street, Sunderland.
 Shirley.—Proposed nursery buildings, Shirley Warren (2,000); Architect, care of Mr. A. J. Walden, Clerk, Board of Guardians, South-ampton.
 Sonning (Berks).—Two houses; Messrs. Walker & Harwood, architect, 17, Pall Mall East, S.W.
 South Shields.—Two school departments, Stanhope-road (9,050); Mr. Stephen Sheriff, builder, Back Woodbine-street, South Shields.
 Staverton (Davenport).—Hospital (1,700); Mr. J. B. Williams, Surveyor, Davenport Rural District Council.
 Stockport.—Nurses' home; Architect, care of the Building Committee, Stockport Infirmary.
 Stourbridge.—School (3,450); Messrs. J. Harper & Sons, builders, Blackheath.
 Stowmarket.—Proposed school, King's Meadows; Mr. W. E. Watkins, Secretary, Education Committee, East Suffolk County Council, Ipswich.
 Strathpeffer.—Post Office (2,000); Mr. D. Matheson, architect, High-street, Dingwall.
 Stretford.—Proposed additions to baths; Ernest Warrall, Surveyor, Stretford Urban District Council. Plans have been passed as follows:—Extensions to offices, Trafford Park, for Messrs. Redpath, Brown, & Co. Thirteen houses, Kewwood-road, for Mr. Jos. Holt. Additions to Temperance Hall, Church-street, for Stretford Rebabiles. Works, Trafford Park, for the British Reinforced Engineering Company, Ltd.
 Sunderland.—Proposed training college, Ford Estate, Hylton-road; Mr. H. Reed, Secretary, Education Committee, Sunderland Town Council.
 Swansen.—Proposed factory, King's Docks, for M. P. Alrig, Paris.
 Thornhill Lees.—Proposed enlargement of school (1,000); Managers, Church School, Thornhill Lees.
 Uppingham.—Proposed laundry at work-house; Mr. F. Oakley, Clerk, Board of Guardians, Uppingham.
 Wallingford.—Additions to hospital (350); Messrs. Brasher & Sons, builders, St. John's End, Wallingford.
 Weymouth.—School (5,360); Mr. Gough, builder, Clapham Park.
 Whaley Thorns.—Fifty houses; Messrs. Green, builders, Whittington, Chesterfield.
 Whitley Bay.—Catholic schools; Messrs. Gibson, Steinlet, & Dickson, architects, Camden-street, North Shields.
 Wigan.—A plan has been passed for the conversion of workshop into cinematograph hall, etc., for the Trustees of the Scholes Labour Club, Hen-street, Wigan.
 Wooler.—Alterations to church (4,000); Mr. A. B. Plummer, architect, 13, Grey street, Newcastle.
 Workshop.—Additions to Victoria Hospital (2,012); Mr. J. Doncaster, builder, Workshop.
 Yoker.—Additions to Messrs. Bull's Metal & Melloid Company's works (4,000); Messrs. Warren & Stuart, 94, Hope-street, Glasgow.

CANADIAN ARCHITECTURE.

We take the following from a paper read by Mr. Percy E. Nobbs at a meeting of the Royal Architectural Institute of Canada at Winnipeg:—

"As Canadian architecture is as yet a small affair, though, I verily believe, a thing of mighty promise for the future, I hope I shall not bore you if I deal very little with its facts and rather profusely with its theories. Theories are, of course, invented to help us to 'bear our ignorance,' so I take it they are the proper medium wherein to discuss that which is not yet.

And, before going any further, it is necessary, in justice to those who will disagree with what I have to say, to state the fundamental artistic creed underlying what follows, so that they may at once perceive wherein 'their doxy' and 'our doxy' differ, and leave it at that without further ado, for nothing in this world is less profitable than an argument on matters æsthetic and, I would add, on matters ethical when the disputants erect their relicts on foundations different in kind.

Hedonism and Mysticism.

The epicurean sty in which those wallow who eternally do sing 'Art for art's sake,' and base their æsthetic satisfaction on the mere charm of the senses, is an unavailing quag wholly unfitted to be considered even as a possible site on which to rear our structure. The Hedonistic theory which measures the arts in terms of pleasure has, unfortunately, permeated the literature of the last century, so that it is now in all men's minds; and that is why the public and the artists of to-day are more thoroughly out of sympathy with each other than ever they were since history began.

And even less suited for a foundation do we consider the clouds of mystification where the idealists flap their undisciplined wings in search of artistic delights "too utterly utter" to be expressed by the aid of any known syntax. To come to the point, let me state briefly that art is a simple and natural human activity, not an inexplicable, quintessential mystery, that its purpose is always expression, that the subject-matter of this mode of expression is that whole range and gamut of emotion and sentiment, and that the means employed—the raw material of this expression—is sensuous pleasure. It is by arrangement that this raw material undergoes its transmutation into that very elusive thing called beauty, best described, in the words of Santayana, as "pleasure regarded as a quality of a thing." Pleasure and pain are, as it were, the light and shade of consciousness. Beauty, you see, is just a state of mind. Without producing that state of mind the arts are dumb.

A little illustration will show you what I mean by artistic expression in this context, for there is no art in merely expressing. Such expression merely informs us and leaves us cold. But when form or arrangement enters into the expression its effects are magical. It was many years ago this point was first brought to our attention by an old painter.

"If you are leaving the country," said he, "and sup at a restaurant with the lady of your choice before train time, and say, 'Waiter! Wine list. Thanks! No. 95, Moët and Chandon. That's right!' there is no art, although the mere act of incurring the expense has expressed an emotion; but if you say or sing:—

"Gae bring to me a pint o' wine,
And put it in a silver tassie,
That I may drink afore I gae
A service to my bonnie lassie!"

that is art, and every man with bowels of compassion who hears not only knows just how you feel, but feels that way himself."

Now this is, I believe, a common-sense view of the great æsthetic problem. Any mere bank director, or Cabinet Minister, or dry-goods clerk could by applying it get an infinite insight into the arts, but persons of these classes, as a rule, much prefer, if they design to give arts a moment's attention, to content themselves with what they call their 'likes and dislikes'; to approach the arts, that is, as we approach a bar where mixed drinks are sold, for the sake of just such sensual pleasure. If a building only "pleases the eye," as the phrase is, it fails utterly as architecture. And how many buildings there

are concerning which that is about all that we can say! Now the builders of past generations have succeeded marvelously well, not only to express through what may be called pure design (*i.e.*, structural truth and honest relation between planning and elevating, etc.), but also through the use of ornament added thereto, a wealth of feeling and emotional thought.

Past Ages.

The styles of various periods convey to us the very spirit of the ages that brought them forth. If no Greek or Latin or Early English literature had come down to us we could still reconstruct from extant monuments of Rome and mediæval England, but, what is far more important, the sentiment with which these peoples at certain periods regard life in general. But, more than that, going behind the generalisations of periodic style, we can realise the very spirit in which various types of buildings were wrought, and, more yet, the individual feelings of the individual man who gave character to individual buildings, for architecture is essentially monumental—history writ large and lastingly.

And from such a point of view it is a matter of no small satisfaction to our national interest to realise that at certain periods Englishmen, Scotsmen, and Irishmen had sentiments to express, and a power to express them in no sense inferior to the best in the glory that was Greece or Rome, or Italy or France.

And perhaps our art, so near to nature in the matter of materials and science, so close to humanity in her dependence on social conditions, has expressed better than any other art the peculiar characteristics of nationalities. Certainly, it is the most democratic of all arts; no affair of luxurious personal patronage or public treasure-houses, but a very adornment of popular life, both private and public.

When men have had great feelings to express and great power of expressing them, happily joined with great opportunities, styles have been developed and evolved and brought to perfection, and from these we can deduce something of the everlasting laws and principles of our art in the light of which to model all sorts and conditions of designs.

Think of a real cosy Jacobean dining-room in some old English manor-house. With you, I know, I need not dwell on the elements of such a composition with any searching description. You know how the two great oak beams carry the lesser joisting of the ceiling, and how the plaster is put up between them. You know the mullioned window, with its leaded glazing and iron casements; the broad brick hearth, on which the crimply iron dogs keep quiet company within the delicately-moulded jambs and lintel; the panelling on the walls; the heavy floorboards; the tapestry at the end; the tall-backed chairs; the squat, pot-bellied table legs—yes, you know! And it is all to speak to you of a certain kind of life and character, which, as I am a builder and not an historical novelist, I shall say nothing more about.

Without a gradually-evolved tradition behind it, in those chief matters of scale and proportion and a naturalness in construction, the thing could convey no impression at all. The ultimate laws of design are all respected there just as truly as in the Doric temple or the Early English abbey, the great Italian palazzo, or City church by Wren. The thing possesses an essential unity of its own, not fortuitous or accidental.

Modern School's.

Of schools of architectural thought to-day there are two (and I purposely ignore the claims of the Secessionists and Art Nouveauists to form the third. Let the heathen rage!). The great exponents of the academic school recognise the eternal principles of design and composition, the everlasting unities, and they use for purposes of exemplification and instruction a convenient cut-and-dry set of forms—the Order and arches, etc. They fail utterly to interest their votaries and neophytes in the technique of the crafts. To them a column is a column, whether made of big stones or little ones, plaster wire, lath or pine boards, cast-iron or trelliswork, and their lintel may be one stone or a hundred pieces of terra-cotta. On the other hand, the non-academic school

knows naught of the grand manner, and still less about the abstract proportions of columns, so they are big enough to lay down their work in whatever material they like, their being. Craftsmanship and the regulation of ornament and decorative art are main cares. This they hope to attain to by the study of mediæval technique.

The stronghold of the academic school, of course, the École des Beaux-Arts in Paris, and, as there is wonderfully little but going on in France, its fruits are to be chiefly in the United States of America. And London is the stronghold of the craftsman architect, with his imitation and highly-coloured politics.

Now if the academic school could be induced to pay more attention to the flung vault of Beauvais and the jewelled of Blois there would be more hope for and if the English exponents of architecture could realise that the grand manner, as practised in Egypt and Babylon and the cities of Alexander's Empire—and the Imperial Rome and gay Versailles has that in it?—would impart a discipline to their plan and a coherence to their composition—too, would gain in power of expression, the rival systems are too deeply rooted in its own custom to afford much widened horizons. To come nearer to there is an interesting development going on. The Anglo-Maniacs of New York have challenged the supremacy of the Beaux-Arts influence that in a recent novel the author makes bold to write the following:—

"Architecture!" said Smugg one. "There's been no such thing since that drunk and disorderly Dago tripped a smashed Corinthian capital, and saw it for the first time after he and the rest of 'em had messed around it for a thousand years. There Renaissance you been talking about nothing but a surgical operation for the 'school of thought,' the first idiot 'correspondent' for the suppression of intellect, 'translations and ratios! Men were so crazy their foot-rulers measured rather than their cornice than figure out a new grained arch took brains and blood to build Karnak at Parthenon and St. Mark's and Durham and Chartres! But these modern monkeys are working out puzzle pictures for fools! I would think the Parthenon had gone wrong and come over and littered all over Manhattan Greek temples for bun-shops, Greek temples for subway-entrances, and Greek temples for garages! Judging from the Penny Station, how far have we advanced from Ta Mahal? Is the Singer Building better than the Doge's Palace? And how about that Cathedral that garbage box with the foisted approach? Is it up to the standards any little old parish church in England?"

Oh, I've been talking with these arch chaps and think on a scale of one-sixteen an-inch-to-the-foot, and I know what's there! There's a bucket shop called the École des Beaux-Arts over in Paris, where the little Vandykes and gives up the last bit of small of feeling they have, and they get in rebunch of stock-certificates in a bum good hope, and then they cheat themselves back to the Atlantic, and the hay-seeds of his gurgles. 'Oh, ain't them columns and cornices and cartouches elegant!' That's all they get out of a Roman translation of the Greek! Gawd! Every time I see an old memory of the unknown dead. Yes, I there's a few men trying to do Gothic, they ain't got no Gothic minds. Well, they're butchers at a real style, anyway, and they be pitted, because they know right from wrong, but these academic asses, I envy them. Don't even know there is any such thing as right!"

The great leading influence of McKim American taste has tended latterly toward Roman Renaissance rather than Egyptian models, and from that it is but a step to sobriety of Georgian tradition, the very which is undoubtedly on the increase. Architecture in the States is not a question of evolution of styles, but merely of institution of fashions, and that is a matter wherein we should do well to fall in with our great neighbours by imitating example.

If the true teaching lies, as I believe, where between the Beaux-Arts and the Crafts, we are indeed well situated to develop a sound foundation for the structure of Canadian design. Though French Canadians have a little common with Parisian ideals, they always constitute a channel through French influences, both old and new.

* *Lady Macbante; or, Life as it Should Be* by Gelett Burgess.

our way to us, and we can rely on the Beaux-Artist from across the border let it be his fault if our cities lack of follies, bedight with columns and ches. The English culture of the is also with us, and gives every promise of a strengthening tie to the bond of British ideals. Let us hope that our academically-inclined designers will learn to wrought-iron and cast-iron are perfectly different things, and that if order comes in too high to do their will they will at least take the trouble to draw the details before calling for their in mahogany; and also that the d d crafty ones among us will try and at the meanings of the words "scale" proportion," and apply that known in their efforts in opal glass.

The Growth of Tradition.

tion grows, it cannot be made, and asonable goodwill it might grow very among us. Without tradition we have an art at all, and must contrive with going on being clever. If we can see our way to attaining a art, that is only one matter out of many the future of our art in Canada. ur and artisanship, these are the most aging questions we have to face. Unionism, in its early days, did much out of late it has tended to produce ing slavery, which robs the nations best effort of their sons of toil. I try w and I hope I love my partner, the man, but I feel the realisation of his artistic hobby would destroy utterly as left of the soul he once had in nce.

in and Morris sought to regenerate the through the revival of the happy con- of the Middle Ages, when a man's pride was in his work, as what Time of it to us most clearly shows. But labour has made unnatural laws for to exist by skilled employment or the of the hand has come to be a humilia- Ruskin and Morris failed egregiously. se we architects realise more clearly the people that the working man, when individually, is not as black as he is by any means, and that if his master, tractor, on the one hand, and his the union, on the other, would only n, he would be willing enough to a higher ideal of execution and to think for himself. I have no on in stating that in the ordinary stonecutter, mason, bricklayer, ry, and joiner—this country is rapidly ago to a barbarous standard. Eighty, erty, yes, twenty years ago, all these were better done in this country than e to-day. For neither love nor money get a ceiling put up in Montreal that of crack inside three months, and al has lots of ceilings half a century out a shake in them, and so all

urse, in ordinary work to-day we must o without ornament and decoration quite as much as reward, are able to (labour), except mere enrichment of ost perfunctory, cast-by-the-yard, by-the-mile kind. Yet but 500 to any cottage, any village church had upon it a taste in design and a skill ution which would to-day obtain for or a reputation as a past-master.

Expressing the Conditions.

we must adapt our work to the con- of our age, and do without a great nice things, and, above all, we must be temptation to resort to fakes and ns and shams of better things. That, is the great blot on the taste of o here—that neither architects, nor ors, nor workmen, nor clients, nor leral public seem to resent the most e shams and hypocrites, and it is in ches that the defect of stage carpentry of building is most in evidence. n churches are sometimes well venti- usually well heated, nearly always able, and invariably full of structural erial lies. In notable contrast to the ss and vulgarity of our places of of all denominations is the good and extravagant outlay (and these to not necessarily always have to go

(together) on the banks of most of the financial corporations. I am not here to judge between the tanker and the parson on the question of which vocation is most necessary. Every community builds its best monuments in honour of that which it most reveres; that has been true since the dawn of civilisation. Undoubtedly, the future of Canadian architecture is bound up with the evolution of the banking-hall. There has been no visible effort in any section of the community to advance the art of church building, which has, from the beginning of historic times, been the main problem of the art.

We shall, therefore, expect that the sentiment of unbounded wealth-rolling prairie, limitless forest, and all that sort of thing, converted into barrels, nay, cargoes of gold will not fail to evince itself in Canadian architecture.

Just as the XIVth-century architecture of our race is inspired in the main by the sense of pageantry and chivalry—the zenith of feudalism in all its glory—while the temper of our art in the XIIIth century was by contrast an affair of disciplined monastic refinement, and in the XVth a decidedly bourgeois affair, so we must expect to see a barbaric plutocracy as the backbone of our social system affecting our art just as did the abbot of 1250, or the baron of 1350, or the burgess of 1450. But that is neither your affair nor mine, gentlemen; what is "our affairs" is to express in our designs the temper of the time we live in, and, just for the initiated, a little of what we feel about it; and we are beginning to do it.

But perhaps I am dwelling too much on the difficulties before us, and not saying enough about the great prospects for architecture as an art in this country.

In art, as in war, it is the opportunity that makes the master, and surely nowhere in the world is our profession better situated. Study and training can perhaps lay the foundations of skill in design, but it is only by actually designing and carrying out work that a man can master this art, trade, and mystery. Wren was about in middle life before he built anything. His early efforts were neither better nor worse than those of other much younger architects, but he got the opportunity and he had the head and the heart to profit by it. And Michelangelo had architecture forced on him late in life, and his earlier efforts were preposterous absurdities, but he profited by experience, lived a great age, and abandoned all the other arts of which he was a master for "the mistress art," and his masterpiece, the Dome of St. Peter's, means something.

Truly, we have the opportunity if we have but the power to avail ourselves of it.

The Conditions in Canada.

And apart from this question of actual chance of practising, we have another very great advantage in our miraculous climate. A friend of mine considers the climate, or rather climates, of Canada excellent, but complains that we have too much of them, and I believe there have been very few normal days during the last ten years.

To the climate I shall add the material available and their market forms, and to the materials I shall add the technical devices for handling them.

Here we have three sets of conditions unlike anything that our ancestors who built so well knew. Surely we can rely on these to help us out of the rut of style-mongering towards the evolution of sane design. Originality in art is not a thing worth striving after for its own sake, and when so sought is fatal to success, but inventiveness has always been the life and soul of our art, and we have got to be inventive, whether we like it or not.

It seems from the look of the plates in the British professional Press to be very difficult to be at all inventive over there. The Georgian plaster ceiling and the Elizabethan plaster ceiling seem to have come to stay. The millioned country house and the sash-windowed country house seem to be fixed quantities down to their least details, each type maintaining its respectful relation to the work of 1600 and 1750, and this is not unnatural, since the climate and materials are as they were in 1600 and 1750, and the type of window and roof thereby evolved to perfection at these dates cannot be improved upon.

But we should, in establishing our type,

derive great benefit from the fact that we have to invent our own solutions of the roof problem, and not accept our great-grand-father's; and as to the window question, there is no really satisfactory solution in sight yet that I am aware of. If we remember that it is the roof and the window that makes the architecture, we see that we have our work before us. The feature of the English architecture chimneys, parapets, bays, ranges of lights, rainheads, and all the rest of it—are absolutely inappropriate for our use. But the simple inventive spirit in which these things were evolved and welded together in vernacular use and the reserved but kindly sentiment which these evinced we can surely take to heart and apply now.

Our predecessors in this country up to about 1825 were doing pretty well in this matter. The stone houses of Quebec and Nova Scotia and the clap-board houses of New England showed real evolution of style, and in them a good many of our problems were solved at an early date. The lamentable thing is that the secret has been lost, and we have now to substitute architectural education at universities and other temporary expedients till such time as it is regained. To think that neither for love nor money could such a thoroughly sound piece of work, sound in taste and sound in construction, be put up to day in any town or village throughout this broad Dominion as can be found, once at least in five miles, on the shore all the way from Mulgrave Straits to Ottawa City, and all dated before 1840!

Tradition v. Scholarship.

Now when I say we cannot borrow a tradition ready-made from Europe or anywhere else, I must not be understood as deprecating the study of European architecture. It is for this very reason that the study of ancient architecture can do us nothing but good. The master builders of 1370 did not study any ancient architecture at all, but then they had traditions, and the same applies to the master builders of 450 B.C.

When, for a variety of causes, which it is quite beyond the scope of the present paper to analyse, the XVIIIth century tradition was lost in the XIXth-century revivals and scholarship was resorted to as a substitute, artistic achievement in design ceased altogether for the space of half a century or more. But certainly we need have no fear of scholarship as long as we do not misuse it and regard it as technology. The masterpieces of the past, if approached in the light of the theory with which we started, can show us many a useful principle in design—how to express sentiment by means of the beauty that is in stone and brick and other common things. And besides that, they can fill our hearts with the very soul and spirit of many a bygone poet in stone, when for a time we drop the inquiry of how the thing is done, and are content to apprehend the resulting meaning, for to that end were these things created.

But we allow the false hedonistic theory of art to possess us, and what can scholarship do for us? We would then approach the very Parthenon, not for its meaning, but for a sensuous satisfaction; we would conclude that this building was very successful because so many people "liked it"; and we would assume some magic virtue to "please" in the proportions of its part as such, and probably miss the spirit of the thing as a significant whole. Then, in the hope of giving as much "pleasure" as is possible in this sad world, and getting as much credit for it in fame and dollars as we could, we would proceed to put up things as like it as we could, which, I believe, is the practice of fellows of the baser sort, who, having eyes, yet do not see. Scholarship pursued in that spirit leads nowhere.

Honesty in Design.

Our responsibilities are immense. Every time we put up a meaningless ornament, a blank carouche, run a moulding round three sides of a stair well in plaster, and the fourth in cast iron, build a stone front with brick flanks, rule ashlar joints in Caen stone cement, make a false construction or emulate a superior material we prostitute the ideals of our art. All these things come so easily, naturally, and logically once we accept the theory that is in the function of the arts to please.

But when art is recognised as the most potent of modes of expression, these devices fail utterly.

It may be some time before the new philosophy of art gains general acceptance among designers. . . . It will be longer still before our lot will remain a hard one, out of sympathy with our public and our executive labour.

In the present lamentable state of ignorance or rather positive misinformation on the subject, beauty is taken to be a matter of prescription, like a peach melba or a mint julep. "Take four Ionic columns, put them in a row with the caps uppermost, flank with ashlar pilons pieced with bulls' eyes, garished with cartouches on top; over the column place an entablature, with blocking course or parapet to taste; serve as a bank. If the columns are large and ripe flute them, roof with a skylight powdered with snow, and serve as a picture-gallery. If the columns are small and meagre then pierce the pilons with windows as required and serve as bank manager's house. Note.—The other ingredients will in all cases be proportionate to the columns as explained in preliminary chapter of this cook book."

There is probably a really best way to build a bank of given size in Canada, just as there is to build a temple of given size in Greece, or a parish church in England. Then, again, a post-office, a museum, a private house should be very different from the bank, temple, or church, and from each other, not only in size and form, because the practical requirements are different, but in sentiment and expression, because the ideas associated with these things are so very different.

Yet, if all these things are in Canada, and done in one decade, they should express that, too, in a certain technical similarity. Now I think we all have a good deal to learn, because we have not established the type of our cycle very clearly, and we are still at sixes and sevens with our tradition. The French, who profess to know, say: "L'art c'est d'être toujours soi-même."

These, gentlemen, are the conditions of our competition; designs should be sent in to-morrow, and the award will be made on doomsday.

The Future.

I verily believe that the next fifty years will decide the type and character of Canadian architecture for centuries to come. Is it to become a blind, second-hand, late-in-the-day imitation of the art of luxurious cosmopolitanism which passes muster in the United States, or is it to express something distinctive and characteristic of our aspirations and institutions and the sources from which they spring.

If we have any hopes or intentions towards this latter alternative, it is high time we bestowed ourselves to that end.

The first and most essential step to take is the institution of travelling studentships, that our young men may go to Europe and see for themselves that the traditions of our civilisation are something more than the tricks of manner invented for the delectation of Louis XIV., and watered down in the practice of the U.S.A. offices, to which our best draughtsmen drift at present for wider experience.

Such scholarships should involve at least as much attention to the architecture of the United Kingdom as to that of France and Italy.

The next matter to consider is that of museums. The splendid model of the Trocadero Museum, of Paris, should find its counterpart in each of our great cities. At the Trocadero there is an historically-arranged collection of many thousands of casts and full-sized models of French architecture and sculpture, with subsidiary collections representing the typical achievements of different countries. It has been my endeavour for several years past to make such collections possible for us. The great difficulty has been the lack of initiative at South Kensington, where one can buy a cast or photograph of almost any subject of art in Europe in five minutes, and where, neither for love nor money, can you obtain a photograph of an English building or cast of an English arch mould or niche figure. I am glad to say that a beginning is being made at the Victoria Memorial Museum

at Ottawa, and that within a couple of years I hope to see there a collection of architectural ornament and sculpture in three dimensions of equal scope:—

- (a) Classic and Italian.
- (b) French.
- (c) English—at last!

Also that the museums now in course of erection at Toronto and Montreal will ere long be provided with a properly-selected set of casts and models to illustrate the evolution of British art.

Such a collection as I propose would be an educational force of immense value in any community to the designers and to the general public alike.

A third matter would be the establishment of a proper system of indentured pupilage. Our young architects learn their trade too cheap, and, like anything else that is too cheap, what they get in the deal is often not worth having. I am a strong believer in the good old system of apprenticeships in the interest of the student, the principal, and the art.

We are prone, on this continent, to expect too much of schools of architecture at universities. The result is that such schools have to do a lot of teaching which is mere technology, and are unable to find time in the curriculum for the foundations of culture so essential to our vocation as artists and as professional men.

I have endeavoured to enunciate a plain common-sense theory of art, which would guide us to use our art rather than to play with it—to express rather than to please. I have endeavoured to suggest what some of the main meaning and feelings contained in our art might be; I have enumerated the disabilities under which we labour and the advantages we enjoy; and I have ventured to suggest certain steps for the fuller realisation of those great advantages. Our art in this land has plenty of head behind it, and plenty of hand in it, but it still lacks something in matters pertaining to the heart."

LONDON COUNCILS.

Barnet.—Plans have been passed by the Urban Council for a block of offices, in Wellhouse-lane, for the Guardians of Barnet Union.

Charlton.—The building formerly occupied by the Lee District Board of Works is to be repaired at a cost of between £500. and £600. jointly by the Greenwich, Lewisham, and Woolwich Councils, who now have interests in same, and tenders are to be invited by the Greenwich Council for the work.

East Molesey.—The pathways on the south side of Beauchamp-road and the west side of Seymour-road are to be made up at an estimated total cost of £450.

Fulham.—A plan submitted by Mr. W. Harbrow for alterations to premises in Railway-place, occupied by the Ideal Composition Company, Ltd., has been passed.

Finsbury.—At the last meeting of the Urban District Council, Mr. J. A. Craig, of the Bucks Education Office, Aylesbury, was appointed architectural assistant for about twelve months in connexion with the new school proposed to be built in New North-road, at a salary of £1. 5s. per week. The following plans have been passed:—Mr. A. Marchi, motor garage, Holden-road; Mr. S. J. Hunnings, twelve houses, Windermere-avenue; Mr. A. J. Harris, five houses, Lankaster-gardens. The following plans were lodged:—Mr. W. Penchev, four houses, Etchingham Park-road; Mr. G. F. Taylor, building line, Regent's Park-road; Mrs. Garcia, motor garage, Kingswood, Dollis-avenue.

LAW REPORT.

Howlett v. Harrods, Ltd.

THIS case, which came before the Vacation Judge, Mr. Justice Lush, on Wednesday, arose out of certain structural alterations on premises of the defendant adjoining the flat of the plaintiff, and which the latter complained constituted an annoyance to him, and obtained an injunction restraining the defendants from continuing the nuisance.

His Lordship remarked that this was the case where the workmen worked all night.

Mr. Bramwell Davis, K.C. (for the applicant), agreed, and said there was now an affidavit from the managing-director of Harrods, saying, he did not intend to work any more at night. Therefore, he asked his

learned friend on the other side to undertake that that effect.

The Court had already granted an injunction against any work being undertaken between the hours of 10 p.m. and 6 a.m. this had not been obeyed.

Mr. Hunt, for Harrods, said that some difficulty in giving such an undertaking as asked. Some of the complaints of the taking into the building of iron weighing between ten and twelve tons a night. Unfortunately, this had to be under the London County Council regulations and could not be helped. One other complaint concerned the working of plasterers at night; but that could constitute an annoyance.

His Lordship: Why cannot you undertake that it will not be carried out? Mr. Hunt said the difficulty was that the injunction, if they gave such an undertaking, it might lead to difficulties, night work had been going on, and causing any annoyance at all.

His Lordship said he had carefully considered the London County Council regulations, the injunction to any form of annoyance, the occupant of the flat. In large buildings was very difficult to know how much was made.

Mr. Hunt pointed out that Harrods had a large number of flats, whose tenants were clients of theirs, and they desired to have the best of terms with them. There had been isolated occurrences, which, he did not justify an injunction. He asked for the application to stand over defendants, at the same time, saying they would take all reasonable steps to prevent any annoyance.

His Lordship: Mr. Davis, cannot arrange this matter?

Mr. Davis said this was not the first time the thing had occurred. In April, 1909, the plaintiff's wife, Mrs. Howlett, wrote defendants, and an undertaking was not kept, and now plaintiff placed reliance on the defendant's undertaking.

His Lordship thought the only thing an injunction. He had no doubt that Harrods had the best of intentions in making no noise at all, but the contractors make noises, and an injunction would take that.

Mr. Hunt: There may be an actual noise, my lord?

His Lordship: But surely that would be treated as a nuisance?

Mr. Davis: No, of course not, plaintiff (added Counsel) had been molested but the noises went on during his absence from his flat, and the poor unhappy lady was disturbed.

His Lordship said what the defendant was to let a flat to a gentleman, and to make such a noise that he could not live in it, and then they gave a promise to continue it.

Mr. Hunt said he could not give an undertaking, as the consequences were so serious. He asked for the motion to stand over, liberty to restore.

His Lordship thought it very regrettable that the parties could not come to an arrangement. He would allow the matter to stand over, but would continue the injunction.

PATENTS.

APPLICATIONS PUBLISHED.*

19,346 of 1910.—Domenico Accetola: Manufacture of artificial marble and the like.

19,401 of 1910.—David Barclay: Method of hinging casements.

25,011 of 1910. Theodor Vogt: Process of apparatus for making cement stone slabs.

25,286 of 1910.—Walter Sommer: Drums and rollers.

25,322 of 1910.—Joseph Crook: Means of connecting closet-seats and covers to the portion of the seat.

25,947 of 1910.—Adolf Vietor: Gripping devices such as pipe wrenches, lathe carriers, the like.

596 of 1911.—Marcel Lamort: Machine for cutting and perforating sheet metal.

2,865 of 1911.—Fernand Paul Raoul Latil: Kilns for bricks and the like.

7,963 of 1911.—John Bird-Howard: Window frames and sashes.

9,628 of 1911.—William Edward Lake (Electric Machine Company): Machine for routing and other wood-working operations.

9,628 of 1911.—William Edward Lake (Electric Machine Company): Guide device for routing and like wood-working machines.

* All these applications are in the stage which opposition to the grant of Patents them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointment, xvii.; Auction Sales, xxi.

ertain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

he date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 19-25.—**Athens.**—**COURT OF JUSTICE.**—International competition is instituted by Ministry of the Interior, for the erection of buildings, to cost 160,000l. The Official may be seen at the Library of the A.

SEPTEMBER 15.—**Lowestoft.**—**SCHOOL.**—The Local Education Committee invite designs for elementary school for 600 boys at Roman-Three premiums are offered: 20, 10, and 5l. See advertisement in issue of June 16 other particulars.

SEPTEMBER 16.—**Manchester.**—**LIBRARY AND GALLERIES.**—Limited to the ten selected titors in the first competition. See issue of 23, p. 780.

SEPTEMBER 4.—**Eastington R.D.C.**—100 model for Merton Colliery, Durham. 2l per net cost to successful architect.

SEPTEMBER 7.—**Barnsley.**—**EXTENSION OF**—The Barnsley T.C. invite drawings for further extension of Public Baths. Three premiums are offered—50l., 30l., 20l. See advertisement in issue of August 11 for further particulars.

SEPTEMBER 7.—**Evesham U.D.C.**—Designs for out site and erecting thereon thirty es. Particulars from the Clerk to the U.D.C.

SEPTEMBER 12.—**Coseley.**—Plans are invited for a to accommodate about 200 children. Particulars from the Education Officer, Coseley, near B.

SEPTEMBER 14.—**Bristol.**—**ALTERATIONS IN THE HOTEL.**—Particulars from Mr. F. A. 14, Corn-street, Bristol.

SEPTEMBER 23.—**Salford.**—Extension of office medation on workhouse site at Eccles New. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford. Limited to acts practising in Salford and district only.

SEPTEMBER 30.—**Holland.**—**STAINED GLASS WIN-**—Designs are invited for a stained glass w to be erected in the University at n. See advertisement in issue of June 9 other particulars.

SEPTEMBER 31.—**Marlybone.**—**NEW MUNICIPAL**—Premiums of 100l., 50l., and 25l. Particulars in Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

SEPTEMBER 1.—**City of St. Petersburg.**—**CONTRACT TO ALEXANDER II.**—Particulars in our of August 13, 1910.

SEPTEMBER 30.—**Cardiff.**—**TECHNICAL INSTITUTE.**—Cardiff Education Committee invite designs and estimates for a technical institute. Advertisement in issue of August 18 for other particulars. Successful architect to carry out. Premiums of 125l., 75l., and 50l. to competitors. Mr. J. S. Gibson, assessor.

SEPTEMBER 30.—**Hastings.**—**EAST SUSSEX**—The Joint Committee of the East Hospital and King Edward VII. Local Funds invite designs for new hospital. Advertisement in issue of August 25 for other particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

SEPTEMBER 29.—**Glasgow.**—**DESIGN FOR A**—Designs are invited (Alexander Thom- travelling Studentship) for a bridge. Pre- Particulars from Messrs. Burke & Jack- 20, 37d. Conditions on application to chief Burgomaster Dusseldorf.

SEPTEMBER 29, 1912.—**Montevideo.**—**GOVERNMENT** (premiums 2,355, and 650l.) and town im- nent scheme (premiums 1,060l., 640l., and 200l.) Conditions on application to the Board of 73, Basinghall-street, E.C.

SEPTEMBER 31, 1912.—**Australia.**—**DESIGNS FOR A**—Capital City. The Government of the onwealth of Australia invite competitive s for the laying out of this Federal capital. See advertisement in issue of September 1 other particulars.

SEPTEMBER 1, 1912.—**Dusseldorf.**—A plan for the on of Dusseldorf. Premiums 100l. to 37d. Conditions on application to chief Burgomaster Dusseldorf.

DATE.—**Nottingham.**—**BAPTIST CHURCH**—Remises—Limited to Nottingham archi- Particulars from Messrs. Burke & Jack- 20, 37d. Conditions on application to chief Burgomaster Dusseldorf.

DATE.—**Rochdale Infirmary.**—**EXTENSIONS**—sor. Mr. Alex. Graham, F.R.I.B.A.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 18.—**Blarncaldach.**—**SCHOOL.**—Erection of school and teacher's house. Plans seen, and quantities from Mr. J. G. Falconer, architect, Fort William.

SEPTEMBER 16.—**Landrindod Wells.**—**SHOPS,** etc. Erection of a block of shops and two houses. Plans and specification from Mr. W. Scott-Deakin, F.R.I.B.A., architect, Shrewbury.

SEPTEMBER 16.—**Waberthwaite.**—**VILLA.**—Erection of a villa. Mr. W. T. Noon, Waberthwaite, Cumberland.

SEPTEMBER 18.—**Conway.**—**RESIDENCE.**—Erection of a residence. Messrs. Richard Davies & Son, L.R.I.B.A., architects, Bangor.

SEPTEMBER 18.—**Dundalk.**—**OFFICES.**—Erection of offices in Barrack-street. Plans and specifications from Mr. J. F. McGahon, architect, Exchange-buildings.

SEPTEMBER 15.—**London.**—**ENCLOSURE.**—Erection of a cinematograph enclosure at Goulston-street Baths, Stepney. Borough Engineer, Mr. M. W. Jameson, A.M.Inst.C.E., Municipal Offices, 15, Great Aisle-street, Whitechapel, E. Deposit of 1l.

SEPTEMBER 18.—**Rhynlleid.**—**ALTERATIONS.**—Additions and alterations at Rhynlleid Public School. Plans and specifications with Messrs. Brown & Watt, F.R.I.B.A., 17, Union-terrace, Aberdeen.

SEPTEMBER 18.—**Sheringham.**—**DOCK.**—Erection and completion of proposed dock, etc. Beeston Approach. Quantities from Mr. F. Hall Smith, Surveyor to the Council, Sheringham.

SEPTEMBER 18.—**Wakefield.**—**PLANT-HOUSE.**—Erection of a plant-house at the park. Plan and specification seen, and quantities from Mr. J. P. Wakeford, A.M.Inst.C.E., City Surveyor, Town Hall, Wakefield.

SEPTEMBER 19.—**Skelmankirk.**—**SHED.**—Erection of a weaving shed at Tenter Croft mills. Plans seen, and quantities from Mr. J. Berry, architect, 3, Market-place, Huddersfield.

SEPTEMBER 20.—**Aberdare.**—**HOUSES.**—Erection of seventeen dwelling-houses. Goddardman & the Fitzhugh Building Club. Plans and specification with Mr. C. H. Ellford, architect, 32, Canon-street, Aberdare.

SEPTEMBER 20.—**Cardiff.**—**SHED.**—Extension of the existing wagon shed at the cleansing depot. Drawings and specification seen, and form of tender from the City Engineer, City Hall, Cardiff.

SEPTEMBER 20.—**Kinsale.**—**COTTAGES.**—Erection of forty-six cottages. Mr. J. Murphy, Clerk, Council Office, Kinsale.

SEPTEMBER 21.—**Darlington.**—**ADDITIONS.**—Erection of additions to the Corporation-road School. Plans and specification seen, and quantities, on deposit of 2l. 2s., from Mr. George Winter, Borough Surveyor, Town Hall.

SEPTEMBER 21.—**London.**—**HOUSE.** etc.—Enlargement of Chief Engineer's house and erection of lavatories on the Bancroft-road premises, Mile End, E. Specification from Mr. T. Rowland, Acting Clerk to the Guardians, Guardians' Offices, Bancroft-road, Mile End, E.

SEPTEMBER 22.—**Bempton.**—**SCHOOL.**—Erection of a Council school. Plans seen, and quantities, on deposit of 1l. 1s. from the Building Surveyor, County Hall, Beverley.

* SEPTEMBER 22.—**Watton.**—**NEW INFIRMARY.**—The Guardians of the Waynfleet Union, Norfolk, invite tenders for new infirmary buildings. See advertisement in this issue for further particulars.

SEPTEMBER 23.—**Mansfield.**—**SCHOOLS.**—For alteration of the chapel and schools. Drawings and specifications with the Surveyor, Mr. E. F. Cook, A.M.Inst.C.E. Leamington-street, Mansfield.

SEPTEMBER 23.—**Morpeth.**—**ADDITIONS.**—Alterations and additions to premises, Bridge-street. Drawings and specifications seen, and quantities, on deposit of 1l. 1s., from the architect, Mr. C. Franklin Murphy, Newgate-street, Morpeth.

* SEPTEMBER 23.—**South Chingford.**—**SCHOOL.**—The Essex Education Committee (Essex District Sub-Committee) invite tenders for public elementary school in the New-road, South Chingford. See advertisement in this issue for further particulars.

SEPTEMBER 25.—**Bristol.**—**TRANSIT SHED.**—Con- struction of a single-floor transit shed on the west wall of the Royal Edward Dock, Avon- mouth. Deposit of 5l. to Mr. W. W. Squire, Engineer, Engineer's Office, Cumberland-road, Bristol.

SEPTEMBER 25.—**Chesterfield.**—**COTTAGES, ETC.**—Erection of two cottages and appurtenant build- ings at the junction of Rothwale-road with Stortforth-road, South Ward. Plans, specifica- tion, and form of tender, on deposit of 2l. 2s., from the Borough Surveyor, Salter Gate.

SEPTEMBER 25.—**Elworth.**—**CHAPEL, ETC.**—Erection of chapel and school. Plans and specifica- tions with Messrs. A. Price & Son, architects, Sandbach.

SEPTEMBER 26.—**London.**—**REPAIRS.**—The Council of the Metropolitan Borough of Green- wich invite tenders for external repairs to the baths and washhouses, London-street. Specifi- cations seen, and forms of tender from Borough Engineer, Town Hall, Greenwich.

SEPTEMBER 26.—**Aspatia.**—**HOUSES.**—Erection of two dwelling-houses. Plans and specifications with Mr. J. Henney, architect and surveyor, 39, Senhouse-street, Martport.

SEPTEMBER 26.—**Epsom.**—**WARD.**—Erection of an operation ward at Workhouse Infirmary. Drawings, specification, and form of tender, on deposit of 10s., from the Architect, Mr. A. C. Williams, 53, Doughty-street, W.C.

* SEPTEMBER 27.—**Ash-next-Sandwich.**—**PARISH HALL.**—Tenders are invited for new parish hall, etc. See advertisement in this issue for further particulars.

* SEPTEMBER 27.—**London.**—**S.W.**—**REPAIRS.**—The Metropolitan Asylums Board invite tenders for repairs to roof and gutters at Fountain Hospital, Tooting, S.W. See advertisement in this issue for further particulars.

* SEPTEMBER 27.—**London.**—**W.**—**EXTENSION OF DINING-HALL.**—The Guardians of Paddington in- vite tenders for extension of dining-hall at Work- house, No. 5 Woodfield-road, Harrow-road. See advertisement in this issue for further particulars.

SEPTEMBER 27.—**Sevenoaks.**—**ADDITIONS.**—Alterations and additions to the Children's Homes, Chipstead Common. Plans and specifi- cations seen, and quantities from the architect, Mr. Ernest Pawley, 86, High-street, Sevenoaks, on deposit of 1l. 1s.

SEPTEMBER 28.—**Widnes.**—**HALL.**—Erection of a new drill-hall. Plans and specifications with the architect, Mr. J. P. Fraser, 14, Elliot- street, Liverpool.

* SEPTEMBER 29.—**Birkenhead.**—**SORTING OFFICE.**—The Commissioners of H.M. Office of Works and Public Buildings invite tenders for new sorting office (Birkenhead). See advertisement in this issue for further particulars.

* SEPTEMBER 29.—**Southampton.**—**IRON**—**COOKERY-ROOM.**—The Southampton C.C. invite tenders for a corrugated-iron cookery-room at Broughton Council School. See advertisement in this issue for further particulars.

OCTOBER 2.—**Chertsey.**—**HOME.**—Erection of a home for children. Deposit of 1l. to Mr. H. E. Paine, Clerk, 30, Guildford-street, Chertsey.

OCTOBER 2.—**Glanton.**—**ALTERATIONS.**—Alter- ations and improvements to church and manse. Plans and specifications with Mr. G. Reavell, Sur., A.R.I.B.A., Alwicks.

* OCTOBER 2.—**Ottershaw.**—**HOME FOR CHILDREN.**—The Guardians of Chertsey invite tenders for a home for children. See advertise- ment in this issue for further particulars.

* OCTOBER 3.—**Birmingham.**—**TELEGRAPH STORES.**—The Commissioners of H.M. Works and Public Buildings invite tenders for the finishings (second) contract at block C, Bir- mingham Telegraph Stores. See advertisement in this issue for further particulars.

* OCTOBER 3.—**London.**—**EXTENSION OF LAND**—**REGISTRY.**—The Commissioners of H.M. Works and Public Buildings invite tenders for exten- sion of the Land Registry. See advertisement in this issue for further particulars.

OCTOBER 7.—**Halifax.**—**SHELTERS.**—Erection of tramway shelters. Particulars from Borough Engineer, Town Hall, Halifax.

No DATE.—**Aberdeen.**—**THEATRE.**—Erection of an electric theatre, 476, Union-street, Aberdeen. Apply to the British Cinematograph Theatre, Ltd., 199, Piccadilly, London, W.

No DATE.—**Bewdley.**—**ALTERATIONS, ETC.**—For additions and alterations to Leam-lane school. Quantities, on deposit of 2l. 2s., from Messrs. Pritchard & Pritchard, architects, Bank-build- ings, Kidderminster.

No DATE.—**Crossgates.**—**VILLAS.**—Erection of two semi-detached villas. Mr. Eric V. Wim- penny, architect, West Bar-chambers, 38, Bar- lane, Leeds.

No DATE.—**Cushendall.**—**CHURCH.**—Extension and improvements to R.C. church. Plans, specifi- cations, and particulars from Messrs. Moore & Fleming, architects, 35, Royal-avenue, Belfast.

BUILDING—Continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

No DATE.—**Cushendall**.—HOTEL. For rebuilding hotel. Plans and specification from the architects, Messrs. Connolly & M'Avoy, M.R.I.A.I., Oxford House, 35, Oxford street, Belfast.

No DATE.—**Dublin**.—WORKS.—For building a new printing works at Boyce-street. Quantities from Messrs. Morris & Co., surveyors, 48, Harcourt-street, Dublin. Messrs. Doolin & Butler, architects, Dawson-chambers, Dublin.

No DATE.—**Duygysylchi**.—COTTAGE.—Erection of a cottage. Messrs. Richard Davies & Son, L.R.I.B.A., architects, Bangor.

No DATE.—**Ilkley**.—RESIDENCE.—Erection of a residence. Messrs. Empsall & Clarkson, architects and surveyors, 7, Exchange, Bradford.

No DATE.—**Langammarch Wells**.—ADDITIONS.—Alterations and additions to Afan Lodge, comprising new dining and billiard rooms, etc., and about twenty bedrooms. Plans, specification, and particulars from Messrs. Alfred Swash & Son, F.R.I.B.A., architects, Llandrindod Wells.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 18.—**Radcliffe**.—PLANT.—Erection of a water-softening and purifying plant at electricity works. Specifications with the Electrical Engineer, Electricity Works.

SEPTEMBER 19.—**Castleford**.—HEATING.—For a new heating apparatus at Allerton. Bywater Cook-John Council School. Specifications from Mr. J. H. Thorpe, Divisional Clerk, Education Office, Castleford, W.R.

SEPTEMBER 20.—**Edinburgh**.—HEATING.—For installation of heating apparatus in new science laboratories at George Heriot's School. Plans and drawings seen, and specifications at the office of the Superintendent of Works, Mr. Peter MacNaughton, S.S.C., Clerk and Law Agent, Heriot Trust Offices, 20, York-place, Edinburgh.

SEPTEMBER 20.—**Vara (Sofia)**.—STATION.—Erection of a power station. Particulars from the Commercial Intelligence Branch of the Board of Trade, 78, Basinghall-street, E.C.

OCTOBER 5.—**Margate**.—ADDITIONS, ETC.—Alterations and additions to purifying-house at gasworks. Drawings and specification with the Company's Engineer and Manager, Mr. J. M. Campbell, Isle of Thanet Gas, Light, and Coke Company. Deposit of 2s. 2d.

OCTOBER 9.—**Horton**.—RAILWAY SIDINGS.—The Asylums Committee of the London C.C. invite tenders for the construction of railway sidings to connect the various parts of the Horton Estate, Epsom. Drawings with the London and South-Western Railway at Ewell. Specification and schedules, with plans, from the Clerk of the Committee, 6, Waterloo-place, London, S.W., on deposit of 5s. for each copy.

OCTOBER 23.—**Shotley Bridge**.—HEATING, ETC.—Erection of a heating and hot-water installation at the Whitney House Estate. Deposit of 5s. for specifications, from the consulting engineers, Messrs. Tennant & Barrs, Cathedral-buildings, Dean-street, Newcastle-upon-Tyne.

No DATE.—**Birmingham**.—WELL, ETC.—Construction of a cast iron lined well, and sinking a bore-hole. Specification from Mr. J. Cox, Superintendent Engineer, Kent-street, Birmingham.

No DATE.—**Hindley**.—HEATING.—For the erection of heating apparatus at Lowe Green Council school. Plans. Bridge. Particulars from Mr. Oswald P. Abbott, Surveyor to the Council.

FURNITURE, PAINTING, MATERIALS, etc.

SEPTEMBER 18.—**Brentwood**.—PAINTING, ETC.—For inside repainting and repairing of cottages. Specification with Mr. A. J. Messon, Town Hall, Brentwood.

SEPTEMBER 18.—**Cardiff**.—PAINTING, ETC.—For painting and renovating the interiors of the Nonconformist and Episcopal chapels and exterior of the manager's house at the Cardiff Cemetery. Specification and particulars from the City Engineer, City Hall, Cardiff.

SEPTEMBER 18.—**Lincoln**.—PAINTING.—For painting of the external parts of the Workhouse. Specification at the Clerk's Office, Workhouse.

SEPTEMBER 18.—**Macclesfield**.—PAINTING.—For painting exterior of Workhouse. Particulars from the Workhouse Master.

SEPTEMBER 18.—**Trawden**.—PAINTING, ETC.—For painting and decorating two cottages, two shops, and stables. Particulars from Manager, Trawden Co-operative Society, Ltd.

SEPTEMBER 19.—**Bacup**.—PAINTING.—For painting Cowds Mills. Specification from Borough Engineer, Municipal Offices, Bacup.

SEPTEMBER 19.—**Etherley**.—PAINTING.—For painting and colouring Etherley Council School. Specification from Mr. J. T. Rudd, Clerk, Cockton-hill, Bishop Auckland.

SEPTEMBER 19.—**Keighley**.—PAINTING.—For interior painting at the Workhouse. Quantities from Messrs. Moore & Crabtree, architects, York-chambers, Keighley.

SEPTEMBER 19.—**Rushyford**.—PAINTING.—For painting and colouring Rushyford Council School. Specification from Mr. J. T. Rudd, Clerk, Cockton-hill, Bishop Auckland.

SEPTEMBER 20.—**Barrow-in-Furness**.—PAINTING.—For the outside painting at the Cottage Homes. Specification with Mr. H. T. Fowler, A.R.I.B.A., 6, Cornwallis street, Barrow.

SEPTEMBER 20.—**Bootle**.—PAINTING.—For painting the railings, gates, etc., at the Darby-park and Peel-road children's playground. Specification seen, and forms of tender from the Borough Engineer, Town Hall, Bootle.

SEPTEMBER 20.—**Leeds**.—PAINTING, ETC.—For cleaning down, painting, etc., various rooms and offices in the Town Hall and Municipal-buildings. Leads. Specifications seen, and schedules from Mr. W. T. Lancashire, City Engineer, Municipal-buildings, Leeds.

SEPTEMBER 20.—**Winsley**.—DECORATION, ETC.—For extensive decorative repairs and general work at the Sanatorium. Specification from Mr. Frederick Jones, Secretary, Winsley Sanatorium, near Bath.

SEPTEMBER 21.—**Darlington**.—PAINTING.—For painting interior of Fever Hospital. Specification seen, and quantities from Mr. G. Winter, Borough Surveyor, Town Hall, Darlington.

SEPTEMBER 21.—**Salisbury**.—PAINTING.—For painting the main block of Workhouse. Specification from Messrs. J. Harding & Son, High-street, Salisbury.

SEPTEMBER 21.—**Winchester**.—PAINTING.—For painting the Guildhall. Specification from the City Surveyor, Guildhall, Winchester.

SEPTEMBER 22.—**Pentre**.—PAINTING, ETC.—For repainting and painting the Institute. Specification with Mr. Jacob Keen, architect, Pentre.

SEPTEMBER 25.—**Barnes**.—PAVING.—For paving with deal blocks. Plans and specification seen, and schedule from Mr. B. Tomes, A.M.Inst.C.E., Surveyor, Council House, High-street, Mordlake, S.W.

SEPTEMBER 25.—**Leeds**.—PAINTING.—For painting at Block B, Block B, and the Nurses' Home of the Union Infirmary. Specifications from Mr. James H. Ford, Clerk to the Guardians, Poor Law Office, Leeds.

SEPTEMBER 26.—**Nelson**.—PAINTING, ETC.—For painting and decorating at the Town Hall. Specification and sketch, on deposit of 10s., from the Borough Surveyor, Nelson.

ROADS, SANITARY AND WATER WORKS.

SEPTEMBER 18.—**Baldon**.—SEWER.—Construction of main sewer. Specifications and quantities, on deposit of 5s., from Mr. J. Myers, the Council's Surveyor, Council Offices, Baldon.

SEPTEMBER 18.—**Briton Ferry**.—SEWER.—Supply of granite. Mr. H. Alex. Clarke, Engineer and Surveyor, Council Offices, Briton Ferry.

SEPTEMBER 18.—**Broadstairs**.—MATERIALS.—For supply of materials, etc. Mr. H. Hurd, C.E., Town Surveyor, Council Offices, Broadstairs.

SEPTEMBER 18.—**Dudley**.—SEWAGE.—For various sewage works. Drawings and specifications seen, and quantities, on deposit of 1s. from Mr. J. Gammage, Borough Surveyor, Town Hall, Dudley.

SEPTEMBER 18.—**Harrington**.—ROAD, ETC.—Widening portion of main road and erection of a wall. Plan and specification with the Surveyor, Mr. C. W. Eaglesfield, at Gordon-street, Workington.

SEPTEMBER 18.—**Whitefield**.—SETTS.—Supply of granite setts. Specification from Mr. C. T. Hage, Surveyor to the Council, Elms street, Whitefield.

SEPTEMBER 19.—**Altrincham**.—DRAINAGE.—Surface-water drainage. Plans, specification and quantities, on deposit of 1s. from Mr. H. E. Brown, Surveyor, Town Hall, Altrincham.

SEPTEMBER 19.—**Frinton-on-Sea**.—STREET.—For private street works. Quantities, on deposit of 2s. 6d., from Mr. F. M. Bates, Surveyor, Council, Council Offices, Frinton-on-Sea.

SEPTEMBER 19.—**London**.—GRANITE.—Supply blue Guernsey and Aberdeen granite. Edmondson Station, Park at the Council Offices, Town Hall, Edmondson.

SEPTEMBER 19.—**London**.—PIPER.—For supply and delivery at Edmondson of stone pipes. Forms of tender at the Council's Office, Town Hall, Edmondson.

SEPTEMBER 21.—**Blackwood**.—ROADS.—Construction of new roads. Plans and specifications seen, and quantities, on deposit of 1s. 1s. 7d., from Mr. A. F. Webb, M.S.A., Architect and Surveyor, Blackwood, Mon.

SEPTEMBER 21.—**Luton**.—STREETS.—For private street works. Plans and specification with the Borough Engineer, Town Hall, Luton.

SEPTEMBER 22.—**Loch Burn, Scotland**.—PIPER.—For laying and jointing cast-iron pipes in the road. Drawings by Mr. F. A. Pringle, Surveyor to the Town, 94, Hope-street, Glasgow. Deposit of 1s. 1s.

SEPTEMBER 22.—**Staines**.—ROADS.—Construction of roads and footpaths. Plans, specifications, and particulars from the architect, Mr. G. W. Manning, L.R.I.B.A., London-road, Ashford, Middlesex.

SEPTEMBER 23.—**Stanwell**.—ROADS.—Construction of roads and footpaths. Plans, specifications, and particulars from the Architect, Mr. C. W. Manning, L.R.I.B.A., London-road, Ashford, Middlesex.

SEPTEMBER 23.—**Stanwell**.—ROADS, ETC.—Staines Joint Hospital Committee invite tenders for construction of roads and footpaths at Stanwell, Middlesex. See advertisement in this issue for further particulars.

SEPTEMBER 23.—**Barnes**.—PAVING.—For paving carriage-way. Plans and specification seen, and form of tender from Mr. G. B. Tomes, A.M.Inst.C.E., Surveyor, Council House, High-street, Mordlake.

SEPTEMBER 26.—**Epsom**.—SEWER.—Construction of a 9-in. sewer, with manholes. Specifications and plans from Mr. F. E. Pringle, Surveyor to the Council, R.D.C. Office, Waterloo-road, Epsom Surrey.

SEPTEMBER 26.—**Kilburn**.—WOOD PAVING.—The Willesden D.C. invite tenders for wood paving in Dyne-road. See advertisement in this issue for further particulars.

SEPTEMBER 27.—**Ashby**.—SEWER.—Construction of sewage disposal works. Plans, specifications, and quantities from Mr. F. C. Hett, Solicitor, Clerk to the Council, Bridge, Lincolnshire.

SEPTEMBER 28.—**Liandudno**.—SEWER.—Construction and extension of main sewer. Drawings seen, and specification, quantities, and form of tender from Mr. W. T. Ward, Deputy Engineer, Town Hall, Liandudno. Deposit 10s. 6d.

SEPTEMBER 29.—**Blackburn**.—SETTS.—Granite setts. Mr. William Stubbs, A.M.Inst.C.E., Borough Engineer, Municipal Offices, Blackburn.

SEPTEMBER 29.—**Brighton**.—GRANITE.—Supply of broken granite. Specification and form of tender from the Borough Surveyor at the Town Hall, Brighton.

SEPTEMBER 29.—**Rogerstone**.—SEWAGE.—Providing and laying stoneware pipe sewer. Plans and specifications seen, and quantities, on deposit of 2s. 2s., from the Engineer, Mr. Gomer S. Morgan, Church-street-chamber, Pontypridd.

SEPTEMBER 30.—**Lymington**.—GRANITE.—Supply of granite and granite chippings. Mr. J. Barnes, Borough Surveyor, Lymington Harbours.

NOVEMBER 6.—**Barnet**.—SEWERAGE.—Construction of sewers, tanks, engine-house, pump wells, and other works at irrigation farm. May plans. Specification and drawings seen, and quantities, on deposit of 3s. 3s., from William Fairley, M.Inst.C.E., Parliament-mansions, Victoria-street, Westminster.

No DATE.—**Yarncliffe**.—ROAD, ETC.—Formation of new road and stairway of Innersley. Specifications and quantities from Mr. William Telfer, Burgh Surveyor, Buckhaven.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*INSTRUCTOR OF HANDICRAFT (WOODWORK)	London C.C.	100l. per annum	Sept. 23

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*CONTRACTOR'S STOCK AND PLANT, NORTHAMPTON—On the Premises	Woods & Co.	Sept. 18
*BUILDING MATERIALS, WALWORTH RD., S.E.—On the Premises	Vereyard & Yates	Sept. 19
*30,000 PIECES OF WALLPAPER—at 3, Redcross-street, E.C.	Fryer, Cooper, & Co.	Sept. 19
*BUILDERS STOCK, PLANT AND MACHINERY, LAMBETH, S.E.—On the Premises	J. T. Skelding & Holland	Sept. 21
*BUILDERS AND CONTRACTORS PLANT, SERRANUS, BARACLOS—On the Premises	J. T. Skelding & Holland	Sept. 21
*PLANT AND MACHINERY, COUNTY HALL SITE, S.E.—On the Premises	H. J. Bromley	Sept. 23
*FREEHOLD SITES, SUBURBAN—At the Mart.	Douglas Young & Co.	Sept. 28
*FREEHOLD BUILDING SITE, ST. ST. HELEN'S, E.C.—At the Mart.	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct. 118

VARNISHES, &c.

	Per gallon.	& s. d.
Fine Pale Oak Varnish	0	8 0
Fine Copal Oak	0	10 0
Superfine Pale Elastic Oak	0	12 6
Fine Extra Hard Church Oak	0	10 0
Superfine Hard-drying Oak, for gates of Churches	0	14 6
Superfine Pale Elastic Carriage	0	12 0
Fine Pale Maple	0	16 0
Finest Pale Durable Copal	0	10 0
Extra Pale French Oil	0	18 0
Superfine Flating Varnish	1	4 0
White Pale Enamel	0	12 0
Extra Pale Paper	0	10 6
Best Japan Gold Size	0	9 0
Best Black Japan	0	8 0
Oak and Mahogany Stain	0	16 0
Bruswick Black	0	10 9
Berlin Black	0	10 9
French and Brush Polish	0	10 6

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 1s. 6d. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.
To Canada, post free, 25s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 25s. per annum.
Remittances payable to J. MORGAN should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]
* Denotes accepted. † Denotes provisionally accepted.

BARNESLEY.—For erection of a small church and school-room, etc. at Hoyland Nether. Mr. Wm Allen, architect, Market-street, Hoyland. *Estimate* 4,850 0
E. M., & Bricklayer J. Parr, Hoyland, N. Barnesley*
C. & Jenner, N. Melli, Hoyland, N. Barnesley* 334 0
Parker J. McPartlin, Hoyland, N. Barnesley* 54 0
Slater, G. H. Cooper, Westwood, N. Rotherham* 85 0
P. G. & Painter C. Firth & Sons, Hoyland, N. Barnesley* 180 0
Heating: Newton, Chambers & Co., Thorncliffe Ironworks, N. R. Sheffield* 54 16

BIRMINGHAM.—For additions to premises, Livery-street and Edmund-street, Birmingham, for Messrs. Hudson & Son. Messrs. Ingall, Bridgwater, & Porter, L.B.E.A., architects and surveyors, 3, Temple-row, west, Birmingham.
H. Lovatt, Ltd. £1,505 J. Johnson £1,290
W. Bishop 1,377 J. J. Teal & Son, 1,377
J. Dallow & Sons 1,325 Ltd. 1,243
W. Lee & Son 1,320 J. E. Harper* 1,198

CARLOW.—For erection of sixteen artisans' dwellings on two different sites, for the Urban District Council. Mr. Peter P. Carlow, Town Surveyor, Carlow. Quantities by Mr. James Mackey, 58, Dame-street, Dublin.
E. W. Warren £3,500 J. Murphy £3,290
J. W. Mitchell 3,478 J. J. Dunphy 3,277
J. Dougan 3,437 T. & M. Richards 2,960
T. Thompson & Son 3,348 J. Walsh, Carlow* 2,946
M. O'Brien 3,321

OGILVIE & CO.,

Telephone: DALSTON 1524.
Many years connected with the late firm of W. H. Lascelles & Co., Ltd., of Bankhill Row.

Amhurst Works, DALSTON LANE, N.E.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS.

ESTIMATES FREE.

EARLESTOWN.—For erection of an isolation hospital. Mr. A. Bowes, surveyor, Town Hall, Earlestown. —
G. Finning Earlestown* £3,700

LONDON.—For alterations and additions to Nos. 27 and 28, Pall Mall, for the Daimler Co., Ltd. Messrs. Bryant & Son, surveyors, 230, Kensington Park road, S.E. —
W. Cubitt & Co. £320 0
White, Allon, & Co. 391 10
Lenn, Thornton, & Co. 538 10
Patman & Fotheringham, Ltd. 528 0
J. Marshall & Sons, York-road, Walworth* 492 0

RICHMOND.—For erection of a receiving home at Parkshot, for Richmond Board of Guardians. Mr. Ed. J. Partridge, architect, Bank Chambers, Richmond. Quantities by Mr. T. J. Carless, surveyor, 38, Old Queen-street, Westminster:—
G. Smith & Sons £2,739 Speechley & Smith, Goble & Son 2,700 Richmond* 62,469
Jarman & Co. 2,489 Gibson & Co. 2,434
† Recommended for acceptance.

SHOREHAM-BY-SEA.—For construction of sewers, etc. Mr. A. W. Nye, architect, Town Hall, Shoreham:—
S. A. Holman £1,071 2 3 Fearless, Dennis, & Co. £824 0 0
J. Parsons 937 0 Williams & Co., Curmyn and Conway* 769 0 0
McKellar & Westernman 572 19 8

THORNHURBY. For Thornbury Grammar School. Mr. R. S. Phillips, architect, Gloucester:—
Tucker Bros. £368 0 W. W. Pitcher £745 0
D. J. Tanner & Son 837 0 P. G. Hawkins, W. T. Nicholls 834 10
Orchard & Peir 795 0 Thornbury* 699 10

TOTNES.—For erection of buildings, bullock and sheep pens, in Totnes market. Mr. W. F. Tolitt, Borough Surveyor, 10, High-street, Totnes:—
W. Reeves & Son, Totnes* £230

WALTHAMSTOW. For alterations and additions at 39, St. James-street, Walthamstow, for Everett's Stores, Ltd. Mr. J. Williams Dunford, architect, 1000, Queen Victoria street, E.C.:—
G. W. Barker £192 10 F. J. Coxhead, Fuller & Son 175 0 Leytonstone* £166 10

WALTHAMSTOW. For alterations and additions at 82, Hoe-street, Walthamstow, for Everett's Stores, Ltd. Mr. J. Williams Dunford, architect, 1000, Queen Victoria-street, E.C.:—
West Bros. & Pettit £190 G. W. Barker, Walthamstow* £163
Fuller & Son 162
M. Congdon & Son 170

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.

EXPERTS IN

SLATING, TILING.

BEST WORK ONLY.

Telephone 2683 Wall, or write

BETHNAL GREEN SLATE WORKS.

BETHNAL GREEN, LONDON, E.

Ham Hill Stone, Douling Stone, Portland Stone.

The Ham Hill and Douling Stone Co., Ltd. (Incorporating the Ham Hill Stone Co. and C. Track & The Douling Stone Co.)
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. William, 16 Craven-street, Strand.

Grey Stone Lim

GROUND LIME, WHITE CHALK LIME.

PORTLAND CEMENT

PLASTER, STRAPITE, AND SAND.

Delivered in truck loads to any Station, or by vans in I.

ADDRESS: **JOSEPH S. PETERS.**

Works: MERSTHAM, SURREY. Tel. Merstham 417, OLD KENT ROAD. Tel. Hon 1981.

WHAT!

USE WHITE

LIME-SAND BRICK

(Of the Finest Quality)

FOR CONTRACT WORK?

WHY?

B The Bricks are uniform.
C Less mortar is required.
C Closer joints can be made.
U 15 per cent. more bricks can be laid per day.
U Where lime is required they need no whitewashing.
S Saving of material and labour.
B USED BY THE MILLION IN GERMANY, AMERICA, AND IN THIS COUNTRY.

These Bricks are made by the

GODSTONE BRICK & TILE CO. LTD.

Oxted Road, Godstone, Surrey, and can be delivered in quantities of not less than 500 within 10 miles of the Company's Works at 25s. per 1,000, or Send for Free Samples

Asphalte.—The Seyssel and Metallic L. Asphalte Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and m. rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge

SPRAGUE & CO., Ltd.

LITHOGRAPHERS,

Employ a Large and efficient Staff especially Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

ASPHALTE

For Horizontal & Vertical Damp Courses

For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied

THE

French Asphalte Co.

Whose name and address should be inserted in specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL,

CANNON STREET, E.C.

EWART'S

"EMPRESS"

Established 1834.

Telephone: 2570 North.

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

SMOKE-CURE

THE BUILDER

VOL. CL.—No. 3581.

SEPTEMBER 22, 1911.

CONTENTS.

PAGE	PAGE	PAGE	PAGE
RENAISSANCE IN FRANCE (WITH ILLUSTRATIONS).....	319	THE BUILDING TRADE:—	
CONTRACT VERSUS COMPETITION.....	322	THE NEW YORK BUREAU OF BUILDINGS IN 1910.....	335
WORK OF THE BRIDGE. VII.—HITS ON THE	322	OLD MATERIALS ON A BUILDING SITE.....	335
OF BRIDGE DECORATION (WITH ILLUSTRATIONS).....	323	BOILER EXPLOSIONS IN 1910.....	336
AL NEWS.....	327	PALMER'S TRAVELLING CRADLES AT THE ARMY	
IAL SUMMARY.....	327	AND NAVY STORES (WITH ILLUSTRATION).....	336
INGS.....	328	ASPHALT: SUPPLIES AND PREPARATION.....	336
ITION NEWS.....	328	THE STRIKES AND EMPLOYMENT.....	337
PROVIDENCE.....	328	GOVERNMENT CONTRACTS.....	337
COMMUNICATION COLUMNS.....	329	GENERAL BUILDING NEWS.....	337
TO ILLUSTRATIONS.....	329	PROJECTED NEW BUILDINGS IN THE PROVINCES.....	338
YEARS AGO.....	330	RESIDENCE, DUNEDIN, NEW ZEALAND (WITH PLAN	
LY REVIEW OF ENGINEERING:		AND VIEW).....	339
ERICK COTTON MILL, BOSTON, U.S.A. (WITH		THE MISEUR OF STONE.....	339
ILLUSTRATIONS).....	331	WINDOW IN ST. ANN'S CHURCH, MANCHESTER.....	341
EDUCATION LOADS. I.....	332	ARCHITECTURE AT SOUTH KENSINGTON.....	342
W PILES IN THE VICTORIA PIER, FLEETWOOD		THE MANOR AND THE BUILDING OF MARLBOROUGH.....	342
(WITH ILLUSTRATION).....	331	LEGAL COLUMN.....	343
ES (WITH ILLUSTRATIONS).....	331	LAW REPORT.....	343
		METROPOLITAN ASYLUMS BOARD.....	344
		LONDON COUNCILS.....	343
		OBITUARY.....	344
		FOREIGN AND COLONIAL.....	344
		PATENTS.....	344
		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN.....	345
		SOME RECENT SALES.....	346
		PRICES CURRENT.....	347
		TENDERS.....	348

Illustrations.

NATIONAL MUSEUM OF WALES, CARDIFF. DESIGN BY MESSRS. H. V. LANCKESTER, F.R.I.B.A., & E. A. RICKARDS, F.R.I.B.A.

SENOWE PARK, NORFOLK. MR. G. J. SKIFFER, F.R.I.B.A., ARCHITECT.

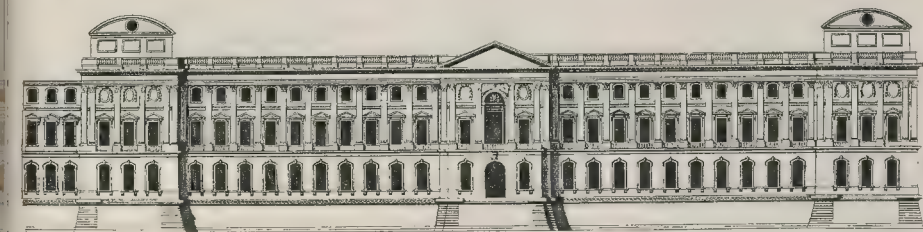
RECREATION HALL, SOUTHALL. MESSRS. A. MARSHALL MACKENZIE, A.R.S.A., AND A. G. R. MACKENZIE, A.R.I.B.A., ARCHITECTS.

MOSELLE BRIDGE, COBLENZ.

NEW BRIDGE, MAYENCE.



The Louvre (South Front) as completed by Le Vau (1664). From Marot.



The Louvre (South Front) as refaced by Perrault (1667-80). From Marot.
From Mr. W. H. Ward's "The Architecture of the Renaissance in France." (B. T. Batsford.)

THE RENAISSANCE IN FRANCE.*

PROBABLY no phase of the Renaissance was so complex and subjected to so many conflicting influences as that which developed in France. In the domination of the Classicism quite overshadowed the relatively Gothic tradition. In Germany the buildings of this age retained the vernacular, and are less indebted to ideas imported from elsewhere. In Spain and Portugal alone show the influence of forces that failed to penetrate France. As for our own country, all our Renaissance architecture is its characteristics to one or other of the intermediate countries, and, while the routes by which it reached us

can be traced, it cannot be contended that it shows the same quality of conflict and gradual assimilation of varying ideals in the subtle and intricate manner to be found in contemporary architecture in France.

France, with its high technical achievement in mediæval buildings, offers an example of the effect of a sudden importation of utterly dissimilar conceptions of architecture on a skilful and well-trained body of artisans; and the way in which this inflowing wave gradually overcomes the national tradition in some directions, while it expends itself in vain in others, affords the material for many interesting studies.

The difficulties in the path of one setting himself the task of dealing adequately with the subject can only

be realised on reading such a work as that from the pen of Mr. W. H. Ward which has just been published. As our readers are probably aware, it would be difficult to find an author better qualified to deal with this architectural development. Mr. Ward's "French Châteaux" and other historical researches must have formed useful preliminary studies for this more comprehensive work. In a subject having so broad a platform it is a difficult task to determine a scheme of arrangement. Geographical, chronological, biographical, and other methods all have their claims to recognition, and the adoption of any one of these to the exclusion of the others at once makes any adequate treatment impossible.

Mr. Ward has, we think, displayed very

*The Architecture of the Renaissance in France, 1580." By W. H. Ward, M.A., A.R.I.B.A. Two large octavo. London: B. T. Batsford, 1911.



The Châtelet, Chantilly. By Jean Bullant.

sound judgment in the system he has adopted in the arrangement of his work. Without some such system, indeed, a work covering such a wide field would have failed to achieve its purpose of giving a clear and proportionate impression of French architecture during the important period extending over the XVIth, XVIIth, and XVIIIth centuries.

As, must, obviously be the case in a work of history, the most important divisions are made chronologically. The eight chapters that make up the two volumes each deal with a style having definite characteristics of its own. Minor subdivisions are made, but substantially the eight styles fall within the following periods, and the usual nomenclature, viz., that of the monarch at the time, is adopted:—

- 1st—1495-1515—Louis XII.
- 2nd—1515-1545—Francis I.
- 3rd—1530-1590—Henry II.
- 4th—1590-1660—Henry IV. & Louis XIII.
- 5th—1640-1710—Louis XIV.
- 6th—1710-1770—Louis XV.
- 7th—1730-1790—Louis XVI.
- 8th—1790-1830—Empire.

Each chapter opens with a brief but telling sketch of the general history of the period. Then we find descriptive notes on the architectural characteristics of the work of the time, and following this the most important buildings are

described. They are grouped under two headings—"Secular" and "Church." In each case the principal buildings are first described and those of less importance dealt with together, having regard to their geographical distribution.



Château de Rougemont.

When, later on, the recognition of the individual architect becomes general, the attribution of buildings to their authors forms the basis of arrangement, and the biographical method comes more into use. We find most admirable the method by which, while a general con-

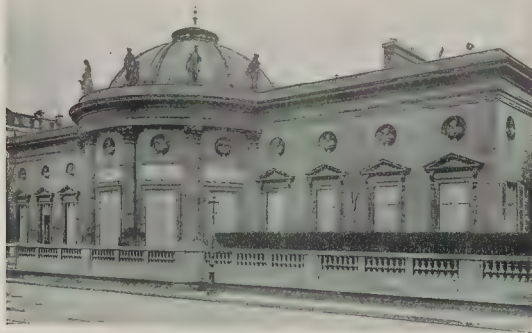
sistency of treatment runs through whole work, the author avoids a slavish adherence to mechanical routine, and adapts his method of exposition to circumstances of the period.

If we have appeared to dwell at unlength on the structural form of Ward's work our excuse must be that we rarely find books of this character which combine so happily the systematic arrangement of the text-book with flexibility of method that alone suggest sympathetically the spirit of each successive development.

These two volumes, handy in the size, containing over 500 pages with 465 illustrations, cover the wide area of their subject in a way that would hardly have been expected from their small bulk. This compression has been effected by a most careful study of proportionate interest both in the text and in the scale of the illustrations, and the result reflects the greatest credit on the author. Only a most thorough and comprehensive knowledge would have enabled him to deal with his subject in such a concise and at the same time interesting fashion.

The Introduction opens with a review of the conditions in France immediately prior to the Renaissance, and goes on to indicate in outline the earlier influence, opening the way to its advent from Italy. Following the fluctuations of its varying fortunes, we see from time to time fresh developments either evolved from within or due to external influences from one direction or another. Dealing with the revival of the pure Classic school in the XVIIth century, Mr. Ward aptly likens this admixture of motives to the stock and the graft:—

"The native element supplies the sap, the life, without which the graft must perish. But it is by virtue of the graft, an importation from outside, yet remotely of its own kin, that the tree is saved from running to waste and enabled to bear a crop of fragrant blossom and mellow fruit. Though the detail and typical features of the native element soon disappeared, yet the principle which underlay them remained. It survived in many characteristic arrangements, in the insistence on verticality, in endeavours to express actual construction and plan in the architectural treatment, and in the consequent soaring and picturesque effects. The imported element brought with it the love of the horizontal line, the idealism which does not scruple to imitate or retain, for their intrinsic beauty, forms once originated by structural needs, but afterwards elaborated into objects of admiration for their own sake."



Hôtel de Salm: River Front.

Chapter I. we see the results of the invasions of Italy under Louis VIII. and Louis XII., the importation of Italian craftsmen and taste, and the influence of this school on the French artisan. The Lombard character of this earlier work is contrasted with the stronger influence of the school to which reference is made in Chapter II., where we come to Francis I. and his imported Italians at work on the chateau de Chambord. During this reign the position of the director of works as architect became more clearly defined, the influence of such men as Il Rosso, Primaticcio, and Primaticcio in forming the style of Henry II. is traced in the comment of Chapter III. Further on we read of the almost contemporaneous work of the distinguished French architects, Jean Goujon, Philibert de l'Orme, Jacques Androuet du Cerceau, Pierre de la Fontaine, and Jean Bullant. Mr. Ward points out that, while these men shared the Italian versatility that enabled them to practise two or more styles, they differed from them in that they broke less completely with Gothic tradition and had less mastery of the principles of Classic design, while their grasp of construction made it of greater importance as influencing their designs.

During this period the individuality of the artist was more marked than during subsequent reigns, when, after a period of anarchy, the restoration of a strong government brought in its train a demand for uniformity that crushed the individualistic spirit. Thus we reach Chapter IV. the times of Henry IV. and Louis XIII. The work under these reigns displays less imagination than the earlier phases of the French Renaissance, and in the author's words: "Economy, sobriety, and reason are admirable as steadying forces, but they are insufficient as an inspiration," constantly artists still turned to Rome for models on which to base their designs. The characteristics of the work of these reigns are summed up as follows:—

"The average buildings of the age of Henry IV. and Louis XIII. rarely possess the qualities of distinction and grace, they have a certain charm from that air of repose, of tranquillity, and substantial comfort which they share with the domestic architecture of England and Holland of a little later date, while in the work of the greater masters the style is capable of considerable grandeur. Its system of decoration is undeniably grotesque and lacking in refinement, but equally undeniably it has the decorative qualities of a vigorous and original character."

Chapter V., in dealing with the long reign of Louis XIV., divides it into three periods—the first marked by the growth of the classical spirit, and an increase of refinement and concentration, resulting in the formation of a new style; the second in which this matured style reaches its most brilliant expression; and the third, which is characterised by a change not in the quality of architecture, but in the unity of its aim. The unclassical, naturalistic tendencies, formerly repressed, once more raise their heads.

The work of Perrault at the Louvre (illustration on page 319) displays a tendency towards dignified severity,

while under J. H. Mansart and his pupils architecture passed on from this phase towards variety and gaiety, qualities that had previously begun to show themselves in decoration even while the architectural lines remained severe.

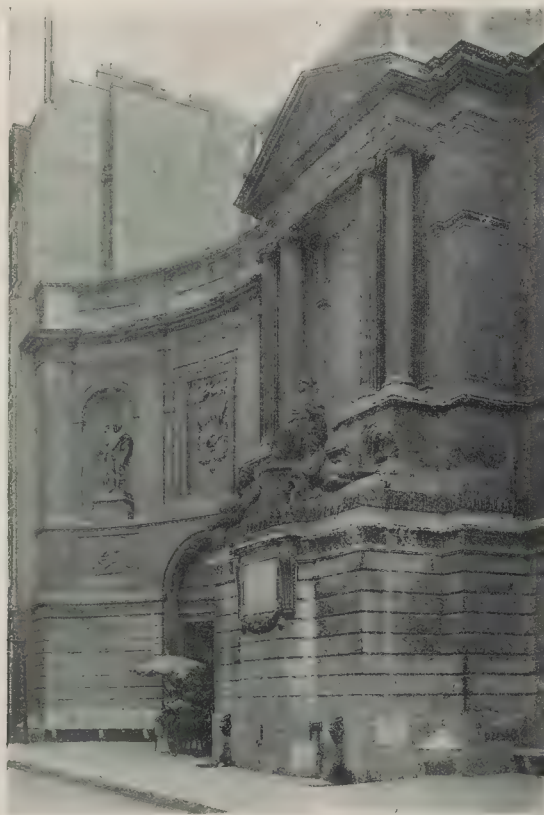
In Chapter VI. we are brought to the amazing development of decorative ornament identified with the reign of Louis XV. Even the reaction from the severity of the official architecture of Louis XIV. hardly seems sufficient to account for the remarkable quality in the types of design denominated "Régence," "Rocaille," and Rococo. We have always felt the difficulty of realising the genesis of this rapid break away from tradition—more especially in view of the originality it displays in the treatment of form. Beyond making it clear that it seems to have taken contemporary artists almost as much by surprise, and exercised the wits of the Academy as to how far it should be recognised, Mr. Ward does not quite clear up the question. He is careful, however, to point out the foreign influences, and takes note of the fact that in France structural architecture was far less affected than in the rest of Europe.

The fall of this style is almost as dramatic as its rise; but for a few

lingering examples of later years, the change took place in 1750, and, as may be realised from Chapter VII. of our book, the style of Louis XVI. took up the traditions of that of Louis XIV., almost completely skipping over those immediately preceding it. Thus some fifty years covers the whole life of one of the most remarkable expositions of decorative art the world has ever seen.

Mr. Ward accepts the usual claim of the reign of Louis XVI. to give its name to a style, but qualifies this by the admission that the style so named was, in a large measure, the creation of the two architects—Jean Nicholas Servandoni (1695-1766) and Jacques Germain Soufflot (1714-80), both citizens of Lyons, a city always in close contact with Italian thought.

The last chapter on the style of the Empire dismisses it somewhat briefly, but it may be that, despite some fine works belonging to this period, one cannot pursue the study of so vital a development as the Renaissance in France without feeling that it dies out in a dry scholasticism, and that its latter days fail to excite the interest evoked by those ages when knowledge counted for less and imagination for more.



Paris: Fontaine de Grenelle. By E. Bouchardon (1739).

BUREAUCRACY VERSUS COMPETITION.

THE Aberdeen Education Committee, with a view to obtaining the best design for their new buildings, proposed to hold a limited competition between eight architects, but, having already had plans prepared showing the accommodation required, they, on submitting their proposal to the Scottish Education Department, received the following reply:—

“Scotch Education Department,
September 2, 1911.

Sir,—Adverting to your letter of the 23rd ultimo, I am directed to state that if, as the Department understand from previous correspondence, your Committee have already in their possession plans which are of such a character as to make it certain that their author would do the whole work adequately and satisfactorily in the event of its being entrusted to him, then the Department could not sanction the contemplated competition. It appears to them that it would be altogether unjustifiable, particularly in the present state of the Education (Scotland) Fund, to approve the expenditure of more than 1,000*l.* of public money on purposes that were not strictly necessary. They cannot think that such a course would be followed in the conduct of any private business concern.—I am, etc.,

G. W. ALEXANDER.”

It is perhaps more to be deplored than wondered at if a public body discourages the advantages to be gained by obtaining competitive designs. To put the matter in the lowest basis of mere economy, it is easy to conceive that the 1,000*l.* referred to might be more than saved by

improvements in arrangement that the best of eight designs would be expected to show, so that the idea of extravagance is short-sighted and fallacious.

We are, however, in official work, gradually coming more and more under the domination of bureaucratic methods that make for stereotyped design, and must necessarily discourage all proposals tending to promote experiment and innovations, without which, what hope is there of improvement and progress?

Human nature being what it is, how can the permanent official have the same incentive to modify and to improve which open competition among unfettered minds automatically gives? and the whole tendency of our governing bodies seems to be towards substituting the work of the permanent official for the independent practitioner. We hold no brief against the qualified official; he has much important work to do, and may do it exceedingly well, but we would take the opportunity of protesting against the growing tendency to throw all the work involving design and invention into his hands, as tending to stifle progress and lose to the public the advantages of unfettered minds working on problems ever developing.

The policy of government includes not only the immediate needs of the community as a whole, but their future advancement, and this entails provision being made for the encouragement of the more active and intelligent and for setting them in a path that shall keep

this activity and intelligence at its tension. Now, the system of increasing the number of officials has an effect—reverse of this, while that of open competition for work, whenever possible, fosters it. Therefore the right policy those controlling public interests should be to limit their official staff to the actual strength demanded by the routine work and place as much of their work as possible in the open market, in order that they may be in a position to take advantage of every new idea and encourage those on whose ability the future depends.

We have referred to this question before, and shall probably have occasion to revert to it again, as the direction which we are travelling appears likely to lead to national disaster. For us, as a nation are already ultra-conservative in regard to ideas, to accentuate this by discouraging initiative is likely to prove fatal to our future welfare, and the course is exactly the one now being taken by our public authorities.

NOTES.

The City Corporation at Vienna.

ALL those who cherish the imperishable memory of the lavish and graceful hospitality extended by the Court and City of Vienna to the International Congress of Architects, will realise that the Lord Mayor and Corporation of London are indeed fortunate in being the recipients of so warmly hearted a welcome from one of the most charming of European capitals. Apart from the value of such visits as promoting the cause of international goodwill and the general progress of humanity, they have a special value for the somewhat insular Englishman, and to no class of the community are their educational advantages more valuable than to those who undertake the responsibility for the government of our great cities, and for the control of their amenities—our civil authorities are not unconscious of this responsibility. They undertake it with a conscientious regard for honest government and the material interests of the city. But there is such a thing as an artistic conscience as well as a moral one, a sense of right and wrong in dealing with artistic questions as well as with commercial ones. It is this sense that is lacking here, and we know no better way of acquiring it than by sympathetic intercourse with the inhabitants of the great cities of other nations where the artistic conscience is a national possession. Would that this visit had taken place before the scheme for St. Paul's Bridge was finally settled. Possibly it might have led to a stirring of conscience. However, it is not too late yet; there is always time for repentance even at the eleventh hour. The bridge is not yet built.

State Aid for Housing Schemes.

MR. ARTHUR GRIFFITH BOSCAWEN, writing in the *Times* of September 12, advocates that the State should provide half the net cost of clearing insanitary areas in our cities, and justifies his contention by the claim that improvements of this character have just



Theatre at Amiens. By J. Rousseau (1778-1780).

From Mr. W. H. Ward's "The Architecture of the Renaissance in France." (B. T. Batsford.)

great a claim on the State as others which the national funds are already distributing. As a matter of principle it can hardly see the justification for a claim. A State contribution ought to be sought in cases affecting the community as a whole, and the detrimental influence of the slum is as infinitely local in character as almost anything one could name. It appears manifestly unfair to tax a community that might have, through far-sighted and careful local government, checked the development of slum areas for the advantage of one that had proved itself neglectful and slack. It is all very well to regard the State as a milch cow of limited capacity, but such an attitude is to weaken the sense of local responsibility and to produce a condition of affairs that would result in a careless regard of ways and means. In shifting the burden laid on our great cities for the improvement of the conditions of life in them, on whom would it fall? Either other cities which have their own problems to cope with, and, as we have it, should not be penalised if they have it with them more effectually, or else rural areas which are poorer and could afford to contribute to the cost of civic improvements.

At the moment when we were congratulating ourselves on the fact that, through the public-spirited action of Sir Francis Trippel, Tattershall Castle and mantelpieces were saved to the nation, comes the disconcerting intelligence that at least of these mantelpieces have been so badly damaged by removal that the possibility of their restoration is in doubt. It might have been thought that the responsibility for this destruction should at least have had the common sense to satisfy themselves that removal was practicable, and, if so, to ensure that

it should be done in such a manner as to enable the product of their misguided efforts to be of a character suitable for reconstruction, otherwise of what value were their labours? According to Canon Rawnsley, even these precautions seem to have been neglected, and it appears as if the loss is irreparable. The expert who has investigated the condition of the fragments declares that even if restored the mantelpieces can never be what they were. The National Trust has decided not to proceed further in the matter, and it seems certain that Tattershall Castle will be denuded finally of its attributes, in a way which is nothing short of scandalous. It is clearly the duty of the nation immediately to take such steps as will render impossible the repetition of vandalism of this kind. Mr. Leonard Stokes, in a letter to the *Times*, promises that the R.I.B.A. will support any movement for the protection of such buildings from injury.

LOVERS of our country scenery will welcome the step taken by the Hampshire County Council under the Regulation of Advertisements Act, 1907, as recently announced by Mr. Richardson Evans, the Chairman of the "Scapa" Society, an association which secured the passing of the above Act, and which has done valuable service in protecting scenery. The provisions of the Act enable local authorities to make by-laws for "regulating, restricting, or preventing the exhibition of advertisements in such places and in such manner or by such means as to affect injuriously the amenities of a public park or pleasure promenade, or to disfigure the natural beauties of a landscape." There has been great difficulty in giving practical effect to the latter words of the sub-section because the Home Office held that to make a by-law operative specific places or spots must

be indicated. With such a limitation it has appeared impossible to protect in general terms the amenities of our roadsides. The Hampshire County Council have now drawn up the following by-law, and have undertaken to defend its validity in the courts if it be called in question:—"No advertisements shall be exhibited on any hoarding, stand, or other erection visible from any public highway (whether carriageway, highway, or footway), and so placed as to disfigure the natural beauty of the landscape." It may be well to explain that the above by-law will in no way affect notices necessary for the business purposes of those actually occupying land or buildings. Common sense will support the above by-law, and it is to be hoped that no legal flaw will be discovered in its terms.

Taxation of Posters No Deterrent.

WHILST advertising to this subject we may observe that it has been often suggested that a tax might well be imposed on poster advertisements. In France some considerable revenue is derived from this source, but, far from appearing to check this form of advertising, we find the scenery in France more disfigured than our own by this barbarous method of advertising, and in such "beauty spots" as the Riviera the local authorities are much exercised by the question of checking the abuse. The taxing of such advertisements only appears to give official sanction to their use.

THE STORY OF THE BRIDGE.

By WALTER SHAW SPARROW.

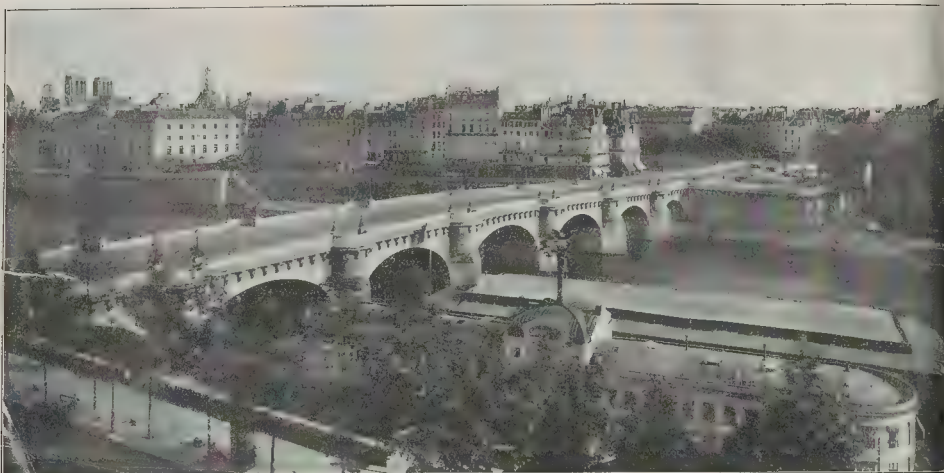
VII.—HINTS ON THE STUDY OF BRIDGE DECORATION.

M. CHARLES BÉRANGER, of the *Librairie Polytechnique*, Paris, has begun to publish a series of full and thorough books on bridge-building, as useful to us as to French



High Level Bridge at Newcastle: Early Victorian.

[Photo. by Frith.]



The Pont Neuf, Paris.

[Photo. by Frith.]

students. Already eight volumes have been issued. They include:

1. "Ponts en Maçonnerie." Par E. Degrand, Inspecteur-Général des Ponts et Chaussées, et Jean Résal, Ingénieur des Ponts et Chaussées. Two volumes, illustrated; 40 francs.

2. "Ponts Métalliques." Par M. Pascal, Ingénieur. One volume; 15 francs. Illustrated.

3. "Croquis de Ponts Métalliques." Par Jules Gaudard, Ingénieur Civil et Professeur Honoraire de L'Université de Lausanne. Profusely illustrated; 20 francs.

4. "Cours de Ponts Métalliques." Par Jean Résal. Tome i. 375 illustrations; 20 francs.

5. "Manuel Théorique et Pratique du Constructeur en Ciment Armé." Par MM. N. de Tédesco et V. Forestier. One volume, 242 illustrations; 20 francs.

6. "Etudes sur Les Ponts en Pierre Remarquables par Leur Décoration." Par F. De Dartin, Inspecteur-Général des Ponts et Chaussées en Retraite, etc. Vol. i., Ponts Français antérieurs au xix. siècle; not yet published. Vol. ii., Ponts Français du xviii. siècle; Centre; published. Vol. iii., Ponts Français du xviii. siècle; Languedoc; published. Vol. iv., Ponts Français du xviii. siècle; Bourgogne; published. Vol. v., Ponts Etrangers antérieurs au xix. siècle: Italiens, Espagnols et Anglais; 25 francs the volume; not yet published.

For this great work, to be completed in five abundant parts, M. De Dartin has made exact measured drawings from sixty-eight bridges, and each example represents a well-chosen type having great historic interest. The author has taken a line of his own, dwelling on the ornament of bridges, their decoration, and from his earnest study

of the XVIIIth century we learn what he admires in one varied phase of French design. He is thoughtful and thorough, but I wish some photographs had been added to the illustrations, because measured drawings give only the dry bones of constructed work.

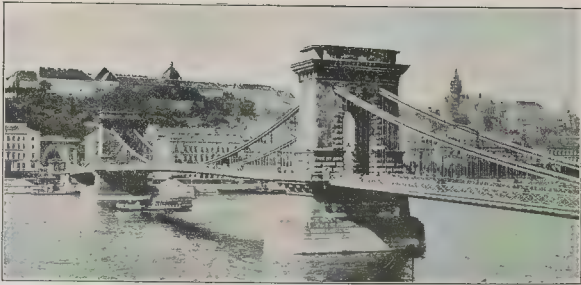
How to decorate a bridge is a question beset with so many practical difficulties and so many artistic problems that it ought to be discussed by a congress of architects and engineers. I cannot think that M. De Dartin will say the last word on this important theme, but his material and his personal taste will be invaluable, presenting facts and provoking discussion. He lingers often enough over details of ornament, which, so they seem to me, are superfluities in a bridge, because they swell the cost of production without any real benefit to the mingled utility and dignity needful in bridges.



Kirchenfeldbrücke, Berne.

[Photo. by Frith.]

se qualities should appeal to us in great lines, in rhythmic proportions, and in scale that befits the surroundings. No bridge can be fine and beautiful when it is lifted by its environment or when it trades a neighbourhood. Many engineers do not grasp the truth of this criticism; their metal monsters are often as wrongly placed in a quiet and gentle landscape as a giant from Brodlinz nag would be at a quiet spot. The Roman bridge at Alcantara is noble and heroic just because the scale is in grand accord with the rocky vale of the Tagus. It completes a grand site, finds its own completion in that site. It happened also in the Roman bridge at Narni, by which two mountains were led together across the River Nerva. I have spoken of this bridge in an earlier issue, but may add that in the existing plans, consisting of a pier and a fine arch, there is no applied decoration. The main thing to be noted is the powerful ring of the piers, because, extradosed in a very remarkable manner, it is independent from the spandrels. A bridge with arches of that kind has architectural character, and this quality is obtained by designing arches for



Bridge at Budapest.

designs; and so, if he in his duties as an engineer is to produce art, he must achieve that good thing by deliberate effort and without help from his employers. Every now and again, by rare good fortune, an engineer builds a bridge having some rude grace of its own, some quality that seems a near neighbour to art itself. Thus the

Pont de La Caille on the route between Geneva and Annecy, or the steel suspension over Niagara Gorge, would have little value as a road if even one shell struck the permanent way, so called.

This consideration is one among many that we have to weigh carefully when we wish to look at bridges in their relation to life and art. M. De Darleins. I believe, lingering over decorative features, loses count of the plain fact that bridges ought to show in their construction some fitness for their great work as essential agents in military tactics and strategy. At a time when a secret society of bridge-wreckers, guided and disciplined by a military power, could do incalculable damage to railways and other roads at the outbreak of hostilities, having previously sent two thousand men with explosives into the country to be attacked; at such a time, surely, bridges should not be studied because of their ornamentation. All spies and secret agents could be bridge-wreckers also, and a good many of them may be, for we cannot suppose that strategists on the Continent are blind to the demoralisation that would seize upon an enemy if at the beginning of a war the business of concentrating troops to resist invasion were seriously impeded by shattered railway bridges. Are you not amazed, therefore, that the utility for war in medieval bridges became a lapsed principle, when it ought to have been handed on to our time in a series of adaptations responsive to new conditions? For this principle in bridges, as in battleships, is certainly susceptible of progressive readaptations, if science and art do their duty well.

So my views on the decorative aspect of bridges, like those on other questions belonging to my subject, have for their aim the realisation of what a bridge should be in an age that prepares for war. I am not moved by those types of modern bridge-building that crib from civic architecture, displaying columns, pilasters, niches,



Widnes and Runcorn Transporter Bridge.

special purpose, i.e., to save them as much as possible from the vibration of heavy traffic sent down from the roadway through the spandrels. Still, it cannot be said that all fine Roman bridges were free from redundant ornament. Pomp and pride exerted a bad influence at times; and from the Roman genius later borrowed numerous superfluities that clouded the aspect of bridges in many instances. It is in such Roman work as the Pont du Gard, where no detail is called for and where the architect's aim was to nobly the needs of a well-considered programme, that we realise the utility of clinging to a bridge any detail that neither adds nor calls attention to some thing essential. To construct ornament is easy—is, indeed, a commonplace and taste, while to ornament construction is difficult, because judgment tells us that a design carried out in simple and rough masonry is in itself ornamental and complete. Applied decoration may be it, just as a human face is disfigured by sticking-plaster.

Consider, too, the bridge-builder's own attitude towards his art, for upon that more than anything else the character of his work depends. What has he got now as an inspiration? He has all the self-consciousness that modern life produces; he has also as a dictating the industrial spirit, with its delight in cheapness and its tolerance for hideous

Menai Bridge does not spoil a glorious landscape, unlike the Britannia, a monstrosity that cost 3982. per foot run. From one point of view the Menai Bridge is bad, and we return to an important subject when we note that suspension bridges are so vulnerable as to be unfit public servants in a time of war. They represent a sort of aviation in mechanics, which modern artillery would soon destroy. Any such bridge as the



Clifton Suspension Bridge.

Photo. by C. S. Sargisson.



The First Cast-Iron Bridge (about 1780), Coalbrookdale, Severn Valley.

battlements, balustrades, turrets, and towers, pinnacles, statues along parapets, and statues above the cut-waters of piers, with other finery that serves no purpose in the essential life of a contemporary bridge. What Hoskings said in 1842 is good as a criticism to-day. He pointed out that the most eminent engineer-architects, in their efforts to take hints from street buildings, had failed to produce anything but meanness and absurdity, or a combination of both.

What this critic would have said had he lived to see the Tower Bridge, with its spurious medievalism and its biscuit-like aspect, I cannot imagine. Hosking had common sense, and he seems to have been allied with a bad temper. Among the principles that he advocated strenuously I should like to note three:—

1. That bridges, in the combination of their leading lines, should be bold and simple;

2. That infinite care and skill should try to make their passage across dangerous places a secure and safe highway; and

3. That far too much money is wasted in stone bridges on the high finish of exterior surfaces. Hosking was disinclined to regard great city bridges as probable exceptions to this rule, for he said:—"It may be fairly questioned whether both Waterloo and London Bridges would not have been finer objects had the masonry of their external faces been merely rough-axed, or even left scabbled, instead of being fair hammer-dressed; and certainly many thousands of pounds might have been saved in the execution of the former work, and a much better result produced, by the

omission of the coupled columns and their immediate accessories, and by the use of a plain parapet of a more reasonable height, instead of the high, the enormously expensive, and absurdly ugly balustraded enclosures which now aid the columns and their projected entablatures to deform that splendid structure."

This Puritan outlook appeals to me, for I believe that good bridges should be as sternly efficient, as indomitably fit for their purpose, as were the Ironsides of Cromwell's army. Beauty in a bridge is a thing apart from any Cavalier-like finery of dressing ornament. It shows that the different members forming a bridge are co-ordinated with fine judgment, and that the build of each member is in nice accord with its own work and with the great office which the bridge as a whole has to fulfil daily under varying conditions of stress and strain, and in relation to its environment.

When the railway bridge at Ludgate-hill was finished there was a public outcry against its gaunt and shabby ugliness; but as soon as some ornamental metalwork was fastened upon its sides the outcry ceased, as if such a trumphy makeshift could give merit to an imbecile design that disgraced the main road leading to St. Paul's Cathedral. When things of this kind are allowed to happen in the heart of a great city, who can have confidence in civic authorities? What chance is there that new projects for bridges will be considered publicly and officially from the various standpoints determining their value in peace and in war?

Some types of bridge-building stand apart



The Old Brig of Stirling.

Photo. by Frith.

from each other in abrupt contrast. The Tower Bridge, London, and the Roman bridge at Narni, Italy, are separated not centuries only, but by a marked degeneracy in the spirit of craftsmanship. What would be the use of those ornate towers if suspended roadway connecting them on the banksides were cut by a shell or explosives? And what historic relationship exists between the principle of metal suspension and the towers, whose conical turrets and tall pyramidal roofs seem like feeble echoes from the French Renaissance and its Gothic inheritance? The Menai Bridge is better by far, and note that its cables rest on the summit of their support, unlike the tubes of the Britannia Bridge which pass through the towered piers about two-thirds up, so that we wonder how the masonry of the upper parts is upheld. The mistake had its original source in a misunderstanding of two things—first, that a column or a pier is meant to bear a weight placed on the top of it; second, that bridge towers of old were neither decorations nor make-believes, but necessities of medieval town life and warfare. They were to defend the bridge and its service to citizens. Everything that made a medieval bridge picturesque sprang from some public need. A chapel was there for pilgrims and other wayfarers, for instance, and the houses that lined Paris bridges, Old London Bridge, the Ponte Vecchio, and other examples remind us not only that shops on a crowded thoroughfare enriched tradesmen, but that land in walled cities being circumscribed it was frugal to make use of bridges as building sites. The distant past knew how to use with judgment its own opportunities, while bridge-builders of recent times and to-day are apt to produce work that is no constructive art in complete accord with current needs and conditions. The Tower Bridge is a typical affectation.

Note the difference in spirit between the Old Brig of Stirling, that we must place among the best bridges of its period. Its design has a fine rhythm, its round arches are admirably handled, and the simple masonry has vigour and grace. I give, too, by way of contrast, a photograph of the first metal bridge, dating from about the year 1780. At an earlier date, in France, an attempt was made to erect a bridge of cast-iron, but the project was given up as too costly. This occurred at Lyons in 1755. Then an English ironmaster, Abraham Darby, became possessed by the same idea, and he made use of it with practical success in the Severn valley, hard by the town of Ironbridge. Cast-iron was chosen, in ribs consisting of two pieces; and a bold design proved that a new principle could be adapted with grace and efficient skill to the historic tradition of semicircular arches. This bridge still exists. It crosses the Severn in a span of 100 ft. 6 in.; its roadway shelves a little; and perhaps we find in this original work a clue towards the solution of that pressing problem as to the type best suited for a war bridge under present-day conditions. For arches of this kind, strong enough to bear traffic and railways across rivers, might be designed with such abutment piers as would not obstruct the waterway too much. The New Bridge at Mayence belongs to this type. For the rest, the width of arches in a war bridge would be determined by the reasonable degree of ease with which a broken span could be repaired after being cut by a shell; or, if not repaired, made temporarily efficient for light traffic. But it seems certain that a war bridge in any strategic position should have an "understudy"—that is to say, a bridge similar to itself, but at some little distance from it, and having a branch road or line to connect it with the main line or highway. Usual hazards of war, we may suppose, would not be likely to breach both bridges at the same time.

* The total weight of ironwork in this bridge is 378½ tons.

GENERAL NEWS.

Professional Announcements.

Messrs. Newman & Newman, architects and surveyors, have removed their offices to St. James' Chambers, 24, Railway approach, London Bridge, S.E.

Mr. Dan. S. Williams, Civil Engineer, (diff), has been retained by the Town Council to report upon the drainage of the Trough of Llandoverly, and to submit proposals for new schemes of sewerage and sewage disposal.

Junior Institution of Engineers.

Commendators G. Marconi, D.Sc., LL.D., have been elected President of the Junior Institution of Engineers in succession to Sir J. Thomson, F.R.S.

Inspectors of Mines and Quarries.

The Home Secretary has framed a fresh scheme of examination for inspectors of mines and quarries. Candidates must be between twenty-three and thirty-five years of age; they must hold first class certificates under the Coal Regulation Act, and must within five years previously have been employed for two years as managers, or under-managers, of mines, or in some other responsible capacities requiring regular attendance underground in coal mines; practical knowledge and experience of metalliferous mining and quarrying will also be taken into consideration. Nominations to compete will be given only by the Home Secretary upon the advice of a Departmental Committee of Selection, who will reject all testimonials and recommendations that are not based upon personal knowledge of the candidate's character and attainments. The scales of yearly salaries are for junior inspectors, 300*l.*-450*l.*; for senior inspectors, 500*l.*-700*l.*; for divisional inspectors, 750*l.*-1,000*l.*; and there are posts of inspector and electrical inspector. Applications for nomination to a forthcoming examination to fill several vacancies in the ranks of junior inspectors must be made to the Private Secretary, Home Office, before September 15 next.

Liverpool University.

The prospectus of the School of Architecture of the University of Liverpool contains details of a new feature, namely, a certificate in architectural design. This certificate is designed to meet the case of students who wish to come to the School of Architecture for its special teaching in architectural design. Students, unless admitted to the Board of Studies on the ground of special qualifications, must have already obtained the certificate in architecture awarded by the University, or have satisfied the examiners of the Royal Institute of British Architects at the Intermediate standard, or have been exempted at that standard. Candidates for the certificate must have attended approved courses in the School of Architecture, (i.) during one day session, or (ii.) during the autumn and Lent terms of two winter sessions, and have satisfied the Board of Studies in not less than six designs to approved programmes. The examination will consist of a design made in the School of Architecture under approved conditions, for which at least five days shall be allowed. In respect of the Liverpool School of Architecture is alive to the possibilities of good design, and it will be found that under Messrs. Reilly, Professor Adshead, and the associated staff, the courses of study are very considered in the interests of students.

The Polytechnic (Regent-street) School of Architecture.

We have received from the Regent-street Polytechnic particulars of the facilities offered both day and evening courses of instruction in all following, or intending to follow, the various branches attached to the building trades architectural profession. The Polytechnic has been rebuilt during the past twelve months at a cost of 90,000*l.*, and plans appeared in a recent issue of the *Builder*. The School is recognised by the Board of Architectural Education of the Royal Institute of British Architects, also H.M. Board

of Education. The day department is under the control of Mr. G. A. Mitchell, A.R.I.B.A., who was appointed by the Governors of the Institute as architect for the rebuilding scheme. This day school is suitable for youths and young men who intend entering builders' and contractors' offices and works, and for those who wish to follow any of the many designing and constructive industries where an art, technical, and trade training constitute the best basis for future excellence and success. The evening department is intended for those preparing for the various professional examinations, also for the craftsman in the various building trades. Mr. Charles Mitchell, M.S.A., is the Headmaster. To prevent loss of instruction to any who may be unavoidably compelled to be absent from the classes, arrangements have been made this session whereby, for a reasonable number of times absent, upon application by the students, the classwork, together with the homework, will be sent by post. In addition, students are advised to attend the tutorial classes held every Thursday evening in connection with the regular instruction. The object of these tutorial classes is to assist students in keeping up with the regular work of the session, and in overcoming any special individual difficulties. A special course of twelve lectures on "Illumination" will be delivered at the Polytechnic under the supervision of Mr. Leon Gaster. Six lectures of the course will be delivered before Christmas on Tuesday evenings, commencing October 31, and the remaining six after Christmas on Thursday evenings, commencing January 11. The lectures, by specialists, will deal impartially with all illuminants, including recent advances in electric, gas, oil, and acetylene lighting; the effect of light on the eye; the hygienic aspects of illumination; the measurement of light and illumination, etc. Practical problems, such as the lighting of schools, streets, factories, etc., will also be treated in the second half of these lectures.

Birkbeck College.

The eighty-ninth session of the College will commence on Wednesday, September 27. The opening address will be given in the theatre, at 7.30 p.m., by Sir William Tilden, D.Sc., F.R.S. The classrooms, etc., will afterwards be open for inspection, and there will be an exhibition in the art school. Visitors are invited. The College is conducted in relation with the University of London; classes are held both in the day and evening; thirty members of the staff are recognised teachers of the University. The courses of study provide for degrees in the faculties of arts, science, laws, and economics. There is a very complete curriculum for chemistry, physics, mathematics, geology, etc. The laboratories are well equipped with modern apparatus and appliances, and research work is encouraged in all the science departments. The College possesses an art school, which provides instruction in the various branches of artistic work (painting, modelling, life, design, etc.).

Glasgow Improvements.

The City Improvements Trust recommend the Corporation to apply for statutory powers to borrow 100,000*l.* for the completion of buildings now being erected in High and Bell streets, and the reconstruction of the old Tontine and the old Town's Buildings, destroyed by fire on September 3-4 last. The Tontine, formerly the Exchange, was built, in 1782, on the north side of Trongate, at the Cross. The fire extended to the Tolbooth and the old Town Hall, as well as the warehouses and shops which mark the site of the former Jail and Courthouse described in "Rob Roy."

BOOKS.

The Ground Plan of the English Parish Church. By A. H. THOMPSON, M.A., F.S.A. (Cambridge University Press. 1*s.*) THE Cambridge manuals have already established a high reputation. This volume is a distinct addition to the series, and we hope that there will be found enough people interested in the subject to make it a financial success. As the author says, there is

no book entirely devoted to the development of the ground plan of the parish church.

The author knows his subject well, and has handled a somewhat technical subject with considerable skill. His deductions are sound and the plan of his book well arranged. The illustrations are, on the whole, good.

His description of the extension of a church in the Middle Ages is very interesting. The building had to be in constant use. When, therefore, aisles were added to an aisleless nave the aisle walls were built beyond those of the nave, the roof was added, and then the arches and pillars were gradually inserted in the nave walls. Finally, the stonework within the arches was removed, hence Norman walls resting on arches of a later period, and remains of blocked windows, doors, etc.

The author fails, however, to explain the reason for the appearance of the tower, though he doubtless realised it himself.

He is careful to show that towers came into use about the time of the Danish invasion. They were often added to older buildings which originally had none, as at Brighthelmston. Further, a type of church appeared of which the main feature was a large and strong tower, with but rudimentary nave and chancel. Barton-on-Humber is a typical example, the mediaeval church to the east having taken the place of the small Saxon chancel.

This plan vanished in the 13th century. Surely the explanation is that the church, being the one permanent building, became the castle of refuge for the village from the raids of the Danes, and, as such, the tower was the strongest part. Here the villagers could take refuge and await in safety the advent of the relieving force—the levy of all the freemen of the shire—who could be summoned by bell and beacon.

It would be quite possible to bring forward a considerable amount of evidence in support of this view, but this is hardly the occasion for it.

The book is, therefore, valuable not only for the information it affords, but also for the interesting lines of thought to which it gives rise.

Building Construction and Drawing: A Text-Book on the Principles and Details of Modern Construction. By CHARLES F. MITCHELL, assisted by G. A. MITCHELL, A.R.I.B.A. Eighth Edition, revised and enlarged (eighty-second thousand), with about 1,100 illustrations, and 470 pages of text. (London: B. T. Batsford, High Holborn. Crown 8vo, cloth. Price 3*s.*)

It is with pleasure we call attention to the new edition of this excellent book, previous editions of which have been noticed in our pages. The work is designed to meet the requirements of the Board of Education, the Royal Institute of British Architects, the Surveyors' Institution, and other examining bodies, and as an elementary book on the subjects with which it deals it is doubtful if a better work could be produced. The author is not only a well-known lecturer on building construction at the Regent-street Polytechnic, but he is the Headmaster of the Polytechnic Technical School, and having, as he doubtless has, an intimate acquaintance of the difficulties and needs of students, he is well qualified to compile this work in order to meet the requirements of the various examining bodies. In any case, he has written a book which is a model of clearness and conciseness, and which should be in the hands of every student engaged in building construction. The aim of the author has been to give, with conciseness and accuracy, a clear statement of the principles which should govern the execution of building work, and whilst taking due note of all recent advances of importance, to so correlate and illustrate the subject matter of the work as to render it equally valuable as a guide for the student taking examinations, and for the practical man engaged on building. On a perusal of this edition, it will be found to contain the subject matter of the preceding ones carefully revised throughout, together with many items not hitherto treated or specially emphasised. The work is an invaluable one, and we know of no reason why the present edition should not be followed by many others.

EDITORIAL SUMMARY.

The leading article deals with the Renaissance in France—a review of Mr. W. H. Ward's able work, just published, on "The Architecture of the Renaissance in France, 1495-1830."

A second article is entitled "Bureaucracy versus Competition" (p. 322).

Notes (p. 322) include: "The Abuses of Advertising"; "Taxation of Posters No Deterrent"; "The Tattershall Mantelpieces"; "The City Corporation at Vienna"; "State Aid for Housing."

"The Story of the Bridge," by Mr. Walter Shaw Sparrow, is continued this week in part VII., which gives hints on the study of bridge decoration. The article is illustrated (p. 323).

Book reviews (p. 327) include: "Building Construction and Drawing"; "The Ground Plan of the English Parish Church."

In our Correspondence Column (p. 328) will be found letters on "Ventilation" and "A Quaint Text-Book."

The Monthly Review of Engineering, illustrated (p. 331), contains: "Maverick Cotton Mills, Boston"; "Foundation Loads—I"; "Screw Pile at Victoria Pier, Fleetwood"; and Notes.

The Building Trade Section (p. 335) includes: "New York Bureau of Buildings, 1910"; "Old Materials on a Building Site"; "Boiler Explosions in 1910"; "Palmer's Travelling Cradles"; "Asphalt Supplies and Preparation"; "The Strikes and Employment"; "Projected New Buildings in the Provinces."

An article on the misuse of stone is given on p. 339, while on p. 342 are articles on: "Architecture and Sculpture at South Kensington" and "The Manor and the Building of Marylebone."

MEETINGS.

MONDAY, SEPTEMBER 23.

North of Architectural Association. Visits to (1) Stella Hall, by permission of Mr. Jos. Cowen, (2) Aswell Park, by permission of Col. C. W. Napier-Clavering.

The Institution of Municipal and County Engineers. A special general meeting at the Town Planning Exhibition, Gidea Park, Romford, Essex, for the purpose of considering and, if approved of, adopting resolutions as special resolutions as to alterations in the Memorandum and Articles of Association. 3 p.m.

MONDAY, SEPTEMBER 25.

Architectural Association.—Opening meeting of Session 1911-12 of the School of Architecture. (1) Exhibition of Students' Work. (2) Professor Beresford Pile on "Architectural Education." 6.15 p.m.

TUESDAY, SEPTEMBER 26.

Junior Institution of Engineers.—Visit the Electrical Exhibition at Olympia, under the guidance of members of the Committee. 6.30 p.m.

COMPETITION NEWS.

The Tea House at Southampton.

The Public Lands and Markets Committee of Southampton Town Council have had before them a letter from the architects for the Tea House on the Common stating that they found the same could not be erected for the sum of 500l., and that they had altered the specification to bring it within that amount. The Borough Engineer has been instructed to reply to the effect that the Committee could not recommend the Council to proceed any further in the matter owing to the modification of the design and the curtailment of the specification in the matter of construction, especially as such deviation and discrepancies had taken place without the knowledge of the Council. The Borough Engineer was also instructed to obtain the design second in merit and ascertain if it could be carried out for the amount stipulated.

Art Competitions, Stockholm, 1912.

Competitions in architecture, sculpture, painting, music, and literature will be held in connexion with the Olympic Games of Stockholm next year. Competitors should notify their intention to enter for one or more of the competitions before January 15, and send in their exhibits before March 1. Sculptors must submit clay models not exceeding 80 centimetres in any dimension. Applications should be addressed to Olympiska Spelen, Stockholm, or to M. le Président du Comité International Olympique, 20, Rue Oudinot, Paris.

Cemetery Buildings, Newcastle-on-Tyne.

The award of Mr. Cross in the competition for a chapel, a house, and a cemetery wall in connexion with the new burial-ground at Newcastle-on-Tyne is as follows:—(1) Mr. Edward Craftney, of Wallsend; (2) Messrs. Oliver & Leeson, of Newcastle; (3) Mr. Scaife, of Whitley Bay.

The Berne Monument.

Signor Giuseppe Romagnoli, of Bologna, has been selected as the sculptor of the monument at Berne to celebrate the foundation of the International Telegraph Union.

BOOKS RECEIVED.

THE ARCHITECTURE OF THE RENAISSANCE IN FRANCE, 1495 TO 1830. In two volumes. By W. H. Ward, M.A., A.R.I.B.A. (London: B. T. Batsford. 50s. net.)

BUILDING CONSTRUCTION AND DRAWING. By Charles F. Mitchell, M.S.A. (London: B. Batsford. 3s.)

THE MAKING OF A GREAT CANADIAN RAILWAY. By F. A. Talbot. With illustration and map. (London: Seeley, Service, & Co. Ltd. 16s. net.)

AN ANALYSIS OF THE CHURCH OF ST. MARC CHOLSEY, IN THE COUNTY OF BERKSHIRE. By F. J. Cole, D.Sc. Oxon. (London: H. Frowde. 5s. net.)

IN THE MARCH AND BORDERLAND OF WALES. By A. G. Bradley. Illustrated: in two volumes, viz.:—Glamorgan and Gwent 3s. 6d. net, and Shropshire, Herefordshire and Monmouth, 5s. net. (London: Constable & Co.)

CORRESPONDENCE.

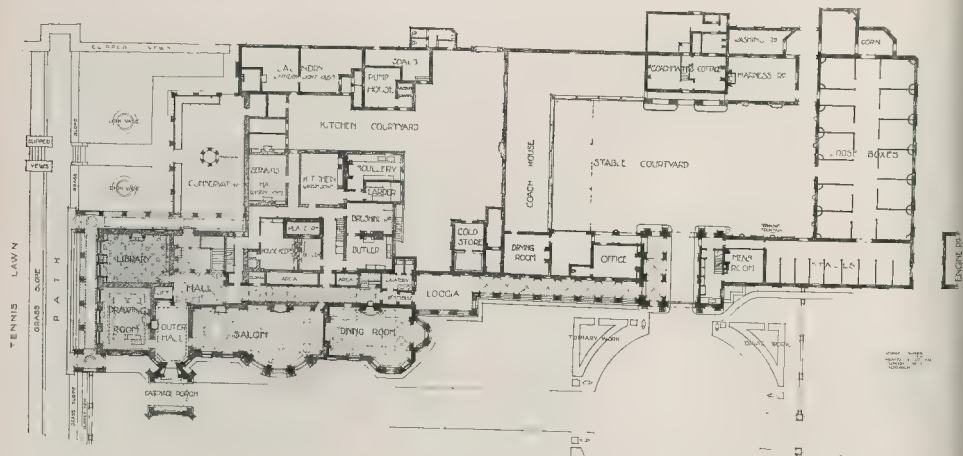
A Quaint Text-Book.

SIR,—From the extracts given in the *Builder* it is evident that the compilers of the "Quaint Text Book of 1734" owed a greater debt to Sir Henry Wotton's "Elements of Architecture" than they seem to have acknowledged. It was there that the "political" caution first appeared not to build "too near a great Neighbour," and it was from the same source that they learned the three conditions of well building: "Commoditie, Firminesse, and Delight." This *trinitas* necessities, if I may so call it, has, however, a higher authority than Sir Henry Wotton, for it appears to be an adaptation of the well-known passage in Vitruvius, Lib. I. cap. II., beginning, "Architectura autem constat ex ordinatione, quæ græce ratio dicitur."

Wotton published "the Elements of Architecture" in 1624. Various opinions have been expressed upon it. Mr. Sidney Lee, in the "Dictionary of National Biography" applies to it the epithet "jeune"; on the other hand, Mr. J. A. Gutch, in "The Growth of the English House," speaks of it as a "sensible treatise." BENJAMIN WALKER.

Ventilation.

SIR,—You referred, in your last issue, to Mr. Leonard Hill's paper read to the members of the British Association. Those whose business it is to design ventilation schemes must bear the brunt of the adverse criticisms, but I think it should be more widely realised that, whereas nine people out of ten will



Sennowe Park, Norfolk.

Mr. G. J. Skipper, F.R.I.B.A., Architect.

that the principle of a "cool moving dry atmosphere" is, at any rate, correct. Any, the difficulty is that the tenth man is just the opposite, and, when his com- is affected, he makes his voice loudly. The other and still greater difficulty is that the men, however much they may enjoy the breeze out of doors, will not endure the lack of movement of air in a room. The difficulties of the ventilating engineer are almost insuperable if his client no longer asked him "to provide ten changes of air per hour without perceptible movement."

S. WHITMORE ROBINSON.

INTERCOMMUNICATION COLUMN.

Fungus and Boarding.

About twelve months ago I had to have a builder to take up the whole of the boarding in my middle room, as the boards were eaten away by a kind of fungus. They were relaid again, but once more the same thing attacked the boards, making it necessary to take them out, as the wood was rotten. I then had the room covered with white-painted boards. About a month ago I noticed that the same white-coloured fungus was making its appearance in the skirting and around the frame, making it necessary to remove the same. There is a peculiar and nasty smell about the fungus, and it appears to make the wood quite rotten.

I have consulted a builder, who cannot understand what it is, and cannot suggest anything to remedy it.

My object in writing to you is to ask whether you can give me advice, as the growth seems to spread rapidly, and I am afraid that it will get into my front room boards.

The fungus is of a creamy colour, and has a very damp feeling when touched. There are no damp courses to the walls, but the worst part is that it attacks the walls on the inside of the house, and not the outside.

W. E. D.

ILLUSTRATIONS.

Design for the National Museum of Wales.

THE plans and elevation of this design by Messrs. Lanchester & Rickards were published in our issue of April 23, 1910. The drawing from our plate is taken was exhibited in the Academy this year.

Sennowe Park, Norfolk.

Extensive enlargements and alterations have been lately in progress to fit Sennowe Park, Norfolk, as a residence for Mr. Cook, are now completed.

The drawing reproduced on one of our plates shows the nature of the work on the entrance, and the south fronts. The right-hand object in the view is the entrance to the stable courtyard, and from this the road leading to a loggia under which is the entrance to the hall itself. The composition and design of the hall were largely determined by the existing building, the retention of which was desired; hence the two round turrets and the position of the loggia porch.

From the plan (p. 328) the scheme will be seen to embrace not only very large additions to the hall, but the complete range of stabling, coachhouses, motor garage, and electric power house, also an entirely new winter garden, water and belfry tower, laundry, etc., and beyond these buildings the terrace gardens have been largely extended, and the whole forecourt has been formed wholly new. Virtually the gardens have been completely redesigned and enlarged by tennis and croquet courts, a rose-garden, and a water-garden. From the water-garden a pergola leads to the pathway from the garden grounds to the rhododendron walk, running beside the stream, crossing it, and extending itself round the further, or south, side of a v-shaped lake of some 8 or 9 acres in extent. All the drives have been re-formed and new approaches made through the plantations to the hall connecting themselves up to



Sennowe Park, Norfolk: South Colonnade, showing Mr. H. C. Fehr's Figure, "Evening."

Mr. G. J. Skipper, F.R.I.B.A., Architect.

the pine avenue, which leads from the hall, past the gamekeeper's cottage, to the new lodges known as the Ryburgh Gates.

In an opposite direction an entirely new avenue, some three-quarters of a mile in length and in width about 120 ft., with double lines

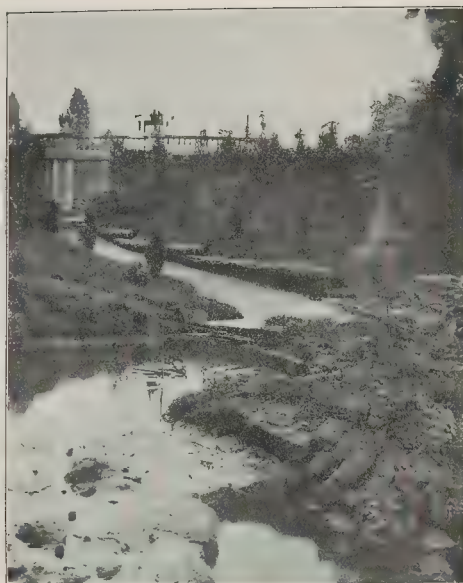
of elms and grass galloping tracks on either side of the broad carriage road, leads from the park to the new lodges known as the Norwich Gates.

The main reception-rooms were finished off in oak and hard woods, and a saloon some



Sennowe Park, Norfolk: Coachman's Cottage.

Mr. G. J. Skipper, F.R.I.B.A., Architect.



Sennowe Park, Norfolk: The Water Garden.

Mr. G. J. Skipper, F.R.I.B.A., Architect.

55 ft. long was carried out in Italian walnut.

Mr. George Riches, of Cromer, was the general contractor for the work, whilst the whole of the stonework has been carried out by Mr. E. W. D. Potter, of Norwich.

The exterior stone carving has been executed by Messrs. Farmer & Brindley, of Westminster, including the figures on the attic of the entrance front and also a good deal of the interior wood-carving.

Mr. H. Fehr, of Fulham-road, London, has executed many figures in bronze and stone and also many sculptured animals and birds to decorate the different gardens.

The decorative mural paintings of figure and sporting subjects were partly the work of Mr. George Murray, of London, and partly from the brush of the late Mr. W. J. Neatby, of London.

An oak staircase, with carved scroll foliage and flowers, the surrounding walls enriched with moulded oak panelling, is a feature of the interior.

The stable fittings and heating were carried out by Messrs. Musgrave & Co., of Belfast and London.

The gates and other wrought-iron fittings were made by Messrs. Singer, of Frome, and by Messrs. Hardman, Powell, & Co., of Birmingham.

Messrs. Wm. Paul & Sons, of Waltham Cross, carried out the whole of the garden work, topiary work, and all the planting in the different clumps and enclosures in the grounds and park.

The formation of the lake, the terrace gardens, and the whole of the roadwork was carried out by Messrs. Mornement & Ray, of East Harling. Mr. A. W. Roy acted as clerk of works.

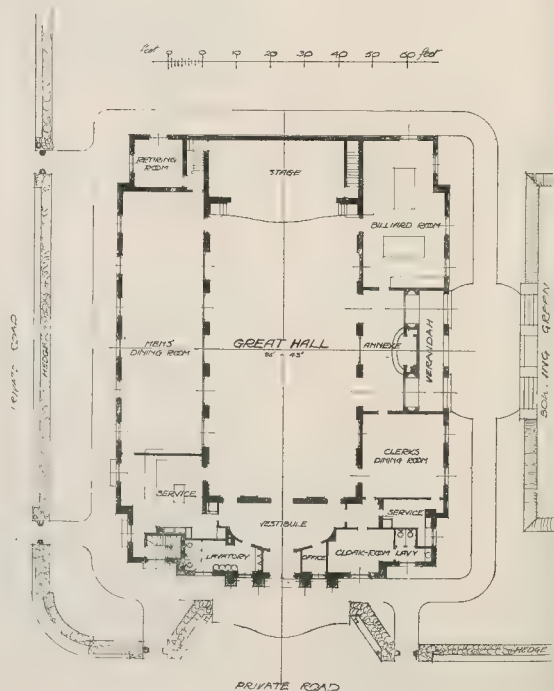
The whole of the undertaking, including the gardens and road works and also the interior decorations, was carried out from the designs of Mr. George J. Skipper, F.R.I.B.A., architect, of Norwich, with whom Mr. F. W. Skipper was in partnership at the time.

Recreation Hall, Southall.

This building has been erected at a cost of 11,000*l.* by Messrs. A. Marshall Mackenzie & Son for Messrs. Otto Monsted, Ltd., margarine manufacturers. It is well situated in front of the works at Southall, among trees, and overlooking bowling-green and tennis-lawns. The walls are finished in cement, painted white, and the roofs are covered with black Dutch tiles. The builders were Messrs. A. & B. Hanson, Southall.

The Story of the Bridge.

THE views of the Moselle Bridge, Coblenz, and the New Bridge, Mayence, are given in connexion with Mr. Shaw Sparrow's seventh article (p. 325).



Recreation Hall, Southall.

Messrs. A. Marshall Mackenzie, A.R.S.A., and A. G. B. Mackenzie, A.R.I.B.A., Architects.

FIFTY YEARS AGO.

From the *Builder* of September 21, 1861.

The Breakwater at Portland.

THE breakwater at Portland is finished, and the *Times* has given a warmly coloured account of the success which has been achieved. The writer says the shape of the breakwater is an obtuse angle, stretching from the island at first towards the north-east and then turning away due north in deep water, half across the splendid bay. Apparently, as one stands on the shore and looks along the interminable rows of black timbers peering up starkly out of the shallow reef of white stones, there does not seem a great deal to show for nearly thirty years of constant labour, for the fruits of this toil are, of course, beneath the water, the restless waves were away the visitor would behold a sort of ridgy mountain, or at least, a hill of colossal stones, more than a mile and a half long, 100 ft. high, and 300 ft. wide at its base.

PUBLIC WORKS LOAN COMMISSION.

The annual report of 1910-11 shows that the Commissioners have made advances to the aggregate of 3,860,301*l.*, whereof 311,443 was advanced for the provision of dwellings for the working classes, the loans being secured upon property of the London Housing Society, Ltd., East End Dwellings Company, Hampstead Tenants, Ltd., and several other kindred societies.

PAISLEY ABBEY.

The old houses in Gauze-street that have just been pulled down were constructed to a considerable extent of worked stone from the Abbey adjacent, which was founded in about 1160 by Walter Stuart, ancestor of the royal house of Scotland. The carved and moulded stones have been carefully preserved for return to their original uses in the restoration of the Abbey.

THE BUILDER, SEPTEMBER 22, 1911.



Photo by Firth.

MOSELLE BRIDGE, COBLENZ.

Spencer & Co., Ltd., Printers, 4 & 5 Fleet Street, E.C.4.

THE BUILDER, SEPTEMBER 22, 1911.





Royal Academy Exhibition, 1911.

NATIONAL MUSEUM OF WALES, CARDIFF—DESIGN



MANCHESTER, F.R.I.B.A., AND E. A. RICKARDS, F.R.I.B.A



RECREATION HALL, SOUTHALL.—MESSRS A. MARSHALL MACKENZIE, AR.SA., & A. G. R. MACKENZIE, AR.BA., ARCHITECTS



Photo by Tytha.

NEW BRIDGE, MAYENCE. FROM CASTEL.
"THE STORY OF THE BRIDGE."—VII.

Sprague & Co., Ltd., Printers, 4 & 5 South Harding St., E.C.

MONTHLY REVIEW *of* ENGINEERING.

Fig. 1. Maverick Cotton Mill: General View (July 27, 1910).

MAVERICK COTTON MILL, BOSTON, U.S.A.

Our issue of April 28 last details were given of the Massachusetts Cotton Mill, built over a canal, from the plans of Messrs. Lockwood, Greene, & Co., Boston. In the present article we illustrate the main structural features of another cotton mill designed by the same firm, also were the general contractors.

The building is of interest as an example of construction in reinforced concrete, shown by the photographs reproduced, also by the record of 100,000 sq. ft. of surface completed within one month.

It was at first intended to adopt what is called in America ordinary "mill construction," but, as the tenders submitted by building contractors were considered too high, copies of the plans prepared by Messrs. Lockwood, Greene, & Co. were sent to two construction companies, leaving their own system for reinforced concrete. One of these was the Hennebique Construction Company, of New York, whose plan was ultimately accepted on the basis of drawings prepared by them from general drawings.

Located at East Boston, at the northern end of the harbour and opposite the main part of the city, the buildings occupy a large area near the water front, as shown by Fig. 1, which is a general view of the spinning mill taken four months after the commencement of the concrete work.

The mill comprises four buildings:—(1) spinning mill; (2) weaving shed; (3) power house; (4) office building.

The spinning mill is 550 ft. long by 130 ft. wide by two stories high, and is built in bays measuring 25 ft. by 10 ft. 8 in. in plan. It also has a basement story, and provision was made in the design of the columns for adding two stories above the existing flat roof, which will then become the second floor of the building. The mill equipment at present includes 50,000 spindles for cotton spinning.

The soil on the margin of the harbour at East Boston is of marshy character, and to enable it to support the weight of the buildings was consolidated by means of timber piles driven during the autumn of the year 1909. Upon these piles were constructed the footings of the exterior and interior columns supporting the reinforced concrete skeleton of the mill, this framework being monolithic throughout and comprising columns, wall lintels, main girders, joists, floors, and roofing.

Construction was commenced at the beginning of March, 1910, the position of affairs on March 7 being indicated by Fig. 2, representing the erection of moulds for the reinforced concrete columns. This view shows the chaotic state of the site of that period, with the column moulds in long trenches partly full of surface water. In the background may be seen the centring for four of the saw-tooth roof spans of the weaving shed, and the construction tower provided for handling concrete and other materials.

The rapidity with which operations were

pushed forward is shown by comparing Fig. 2 with the photograph reproduced in Fig. 3, taken on May 4, or only fifty working days later, when a large area was covered by the moulds for beams at ground-floor level, several bays the full width of the building were partly completed to first floor level, and several others to roof level. In Fig. 3 a second construction tower may be seen at the right-hand side for serving men engaged on the mill building, the weaving shed and its construction tower being hidden behind the spinning mill.

The rapid progress made during the months of May and June is sufficiently indicated by Fig. 1, which is from a photograph taken on July 27, but we are informed that as a matter of fact all the concreting on the spinning mill was completed by July 1. Each of the floors in this building covers an area of 74,000 sq. ft., the total area of the three floors and flat roof being about 6½ acres. Operations were undoubtedly facilitated by the large amount of duplication in the design, which not only conduced to rapid work, but also to economy of timber used in the form of moulds, shuttering, and centring. The moulds were used four times on different parts of the building.

The weaving shed, providing accommodation for 1,200 looms, measures 340 ft. by 231 ft., and is designed with bays of 26 ft. by 21 ft. 4 in. in plan. It comprises basement and ground floor stories, the latter covered with a roof of the saw-tooth type.



Fig. 2. Spinning Mill: Erecting Column Moulds (March 7, 1910).



Fig. 3. Spinning Mill: Constructing Framework (May 4, 1910).



Fig. 4. Weaving Sheds (April 20, 1910).

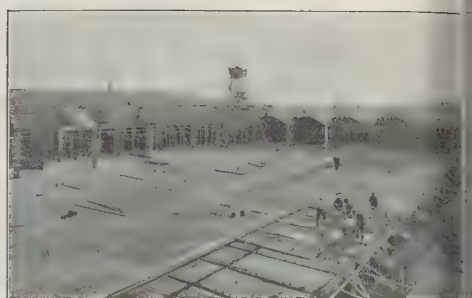


Fig. 5. Weaving Sheds (May 24, 1910).

Arrangements have been made for enlarging this building to four times its present capacity.

Construction was commenced towards the end of February, 1910. By April 20 a considerable portion of the building had been completed, including roof trusses and covering, and a large area provided with columns and timbering for concreting the ground floor. This stage is illustrated by Fig. 4, in the foreground of which can be seen the pits excavated for the construction of further columns on the area to be covered by the basement floor.

Fig. 5 indicates the substantial progress made during the succeeding month. The building was completed early in June so far as concerns the reinforced concrete work. A noteworthy feature of the shed is that the roof trusses and roof covering, except where glazing occurs on the north side of each span, are entirely of reinforced concrete. Although more costly than steel roof trusses, and ordinary covering, this method of construction is undoubtedly good, regarded from the standpoint of fire resistance, and it also has the merit of permitting the entire building to be moulded as a monolithic structure.

The power-house is a comparatively small building, measuring 80 ft. by 62 ft. in plan, and comprising a single-story boiler-room, with basement and a single-story engine-room. This building was commenced in May and completed during July. The office building, 40 ft. long by 30 ft. wide, with two stories and basement, was constructed about the same time.

FOUNDATION LOADS.—I.

IN an instructive lecture delivered several years ago Professor Boyd Dawkins discussed the relation of geology to engineering, with special reference to the utilisation of subterranean water for the benefit of the population. The study of geology is naturally of much importance in other branches of engineering work involving operations at considerable depths. In architectural practice the science of geology affords less aid to the designer, who is usually occupied with glacial drift and comparatively recent accretions of surface material.

Hence a moderate knowledge of geology will carry the architect a long way—at any rate, so far as concerns building construction in countries not subject to serious earthquakes.

Numerous ancient buildings in all parts of the world show conclusively that early architects devoted much thought to the nature of the ground on which they were about to build, and that they adopted precautions which in principle are closely allied to modern methods.

One excellent illustration of this fact is afforded by the foundations of the Campanile of St. Mark, Venice, which, as originally proportioned, proved capable of sustaining enormous pressures for more than a thousand years, and still remain in the foundations of the new tower.

The original Campanile was a marked exception to the general rule that failures of masonry work are more frequently due to

defective foundations than to weakness of the superstructure.

Other buildings of considerable age demonstrate the fact that early architects did not always carry the practice of applied geology quite far enough to ensure permanent stability. Winchester Cathedral and St. Paul's Cathedral illustrate this point, for, as shown by recent troubles, a somewhat greater foundation depth would have rendered these structures independent of the causes which have gradually reduced the bearing power of the upper strata.

In mentioning these examples we intend no slur on the memory of the original designers, our object being merely to indicate the connexion between geology and architecture.

Although the largest buildings erected to-day do not surpass in magnitude those constructed ages ago, the average dimensions, and particularly the height of modern buildings, has very much increased in cities and towns. Consequently, architects feel more than ever before the need for careful investigation into the design of foundations and the loads that may safely be imposed upon various kinds of rock and soil.

This attitude is denoted in a sense by the action of the Science Standing Committee of the Royal Institute of British Architects in asking members to furnish particulars of their personal experience concerning foundation loads.

Although heartily in accord with the movement in question, and believing that it will bring forth much interesting information, we are not sure that the facts collected will be suitable for anything more than general guidance. One reason for this supposition is to be found in the fact that conditions vary considerably according to locality and even in the same locality, and another is the difficulty of obtaining exact data which lend themselves to comparison.

A somewhat kindred appeal on the subject was recently made by an eminent American civil engineer, with the result that out of 300 engineers in various countries who were asked to contribute information as to safe pressures on foundations, only thirty replies of any value were received. Even those were indefinite on important matters connected with the pressures and local conditions.

The architect who builds upon solid rock is free from the uncertainty attaching to the pressure that may be applied to many kinds of soil, for all but the softest varieties of rock are capable of sustaining with perfect safety the greatest load due to any form of masonry foundations. Table I. gives the minimum and maximum results of numerous tests on some representative varieties of British rock, and for comparison the results obtained between 1883 and 1905 at Watertown Arsenal, U.S.A.

TABLE I. COMPRESSIVE RESISTANCE OF VARIOUS ROCKS TESTED IN THE FORM OF SMALL CUBES. RESULTS IN TONS (2,240 LB.) PER SQUARE INCH.

Kind of Rock.	British.	American.
Granites	144-1,614	131-1,780
Basalts	768-1,980	—
Slates	658-1,982	—
Sandstones	70-956	243-1,550
Limestones	156-778	280-965

Owing to the fact that available data concerning the compressive resistance of rocks have been furnished by testing cubes of different sizes, it is impossible to collate figures in the form of a table giving a reliable guide to the relative strength of strata occurring in various districts of the kingdom.

Moreover, it is known that a given volume of material under compression exhibits much greater resistance when incorporated in larger mass of the same material than that shown by the same volume in the form of a test cube.

Thus, a 12-in. cube examined in the testing machine will not bear so heavy a pressure as can be applied to an area of 144 sq. in., constituting part of the surface of a block measuring, say, 10 ft. in every direction. The reason for this increased resistance is obviously to be found in the lateral support furnished by the surrounding material at the distribution of the pressure over a large area. But it is not easy to compute with any degree of accuracy the greater strength so afforded.

Professor Ira O. Baker states in his standard treatise on "Masonry Construction" the results of experiments made by him with the object of establishing the ratio of the crushing pressure distributed over the whole surface of a block and the crushing pressure concentrated on a small portion of a block.

Table II. gives the results of the experiments, where the concentrated pressure was applied by means of a steel die, with the area of 0.277 sq. in., at varying distances from the corner of a large block, and the ordinary crushing strength was obtained by testing to destruction cubes of the same materials as used for the first experiments.

From this table it is clear that the resistance increases very rapidly with the thickness of the block, and with the distance of the concentrated pressure from the edge of the block.

These results, which are of special interest, should be found useful for guidance in various classes of design, as well as in connexion with the bearing power of rock.

If any uncertainty exists with respect to the adequate strength of the rock which is to form the site for a building, the proper course is to have carefully-selected specimens tested, and to take the safe-bearing load at one-eighth the compressive resistance of the weakest cube.

Whatever be the nature of the soil revealed by the excavation of foundation-pits or trenches, it is always necessary for the designer to know something of what lies below. In the case of moderately-heavy buildings, examination should be made to the depth of from 3 ft. to 5 ft., while for very heavy buildings trial borings should be carried down to much greater depths in order that the character of the underlying strata may be reliably gauged.

A simple and effective method of determining the bearing power of the soil in doubtful cases is to apply a test load to a square foot or square yard of the surface exposed by excavation or at the bottom of the hole dug for the purpose. By observing the consequent settlement, it is easy to arrive at a trustworthy conclusion. At the same time the designer must take due account of attendant circumstances, such as the compactness of the soil, the probable influence of variations of the underground water level—

II.—COMPRESSIVE RESISTANCE OF VARIOUS MATERIALS UNDER CONCENTRATED AND DISTRIBUTED PRESSURES. (IRA O. BAKER.)

Material.	Thickness of Block.	Centre of Die from Edge.	Crushing Strength.		Ratio.
			Concentrated Pressure.	Distributed Pressure.	
	In.	In.	Lb. per sq. in.	Lb. per sq. in.	
Lime mortar	1	2	3,610	3,430	27
Marble	2	2	18,050	10,500	17
Marble	2	2	36,100	10,100	36
Brick	2	2	11,880	3,650	11
Limestone	3	2	31,046	3,433	9.0
Sandstone	3	2	51,600	3,696	14.0
Limestone	4	2	75,361	4,761	16.0
Limestone	7	2	64,077	3,153	18.5
<hr/>					
Sandstone	3	2	51,600	3,696	14.0
Sandstone	3	3	59,204	3,696	16.0
Sandstone	3	4	75,810	3,696	20.5
<hr/>					
Limestone	4	2	75,361	4,761	16.0
Limestone	4	3	102,900	4,761	22.0
Limestone	4	4	111,388	4,761	24.0
<hr/>					
Limestone	7	2	64,077	3,433	18.5
Limestone	7	4	57,720	3,433	25.0

experience and discrimination being of no value should never be overlooked. Classification, even if accompanied by the most complete obtainable records of bearing, could afford a true and precise notion of the safe load for soil in different strata. The various kinds of soil do not have standardised qualities like manufactured products, they are found in strata of varying consolidation and thickness, and are less intermixed one with another, and less permeated by water.

CREW PILES IN THE
VICTORIA PIER, FLEETWOOD.

A new promenade pier opened at Fleet-
June last is a structure of steel and
with a timber jetty, and includes
the offices and a bandstand, with pro-
for the erection of a pavilion suitable
concerts and other entertainments.

ward end is situated on the fore-
point opposite Windsor-terrace,
Fielden Esplanade, the work having
been executed by the Fleetwood Victoria Pier
Co., Ltd., to the designs of Mr. J. E.
Hobbs, civil engineer, of Blackpool.

entrance offices and approach are constructed on a foundation formed by filling with stone, boulders, brickbats, and sand. The space bounded on the south side by the wall of the Fielden Esplanade and on the north, east, and west by new concrete walls. The entrance building is of brick, and provides suitable accommodation for the paymaster and stores. All columns or piles in the

and stores. All columns or piles in are of cast-iron with bracing of steel rails, girders, and joists being of mild with the exception of some timber joists top of the cross girders, and the is of crooked timber.

own in the accompanying illustration, are of 10-in. diameter, with a screw for a pointed end for driving to the length, and the requisite collars, caps, braces to the upper lengths. As the

ages to the upper lengths. As the
of construction are clearly shown in
wing, it is unnecessary to state them
The piles fitted with screw flange were
into position and sunk sufficiently

laid a firm and solid foundation in the soil underlying the sandy bed of the sea. In cases where the piles were driven in the ordinary way, they were sunk by vertical movement of not more than 10 ft. as caused by ten blows of a 20-cwt. hammer falling from the height of 6 ft.

piles of the type employed at Fleet-
er originally invented by Mr.
Mitchell, and have been largely
in India for the foundations of rail-
edges, as well as in marine works of
kinds throughout the world. Owing
greatly extended area of the bottom
the bearing power of screw piles is
onately large, and may often be
as an economical means of forming
foundations in soil of unstable nature.

ENGINEERING NOTES.

Deep-Level Aqueduct, New York.

Deep-Level Aqueduct, New York. TO BRING water from the new reservoir at Hill View in Yonkers, through the Borough of the Bronx and Manhattan Island, and under the East River to Brooklyn, it has been decided by the Board of Water Supply to construct an aqueduct in the form of a tunnel about 17½ miles long, ranging in diameter from 11 ft. to 15 ft., and in depth from 200 ft. to 750 ft. below surface level. This important engineering work will be executed throughout in solid rock, consisting of the gneiss, schist, and limestone formations underlying New York City.

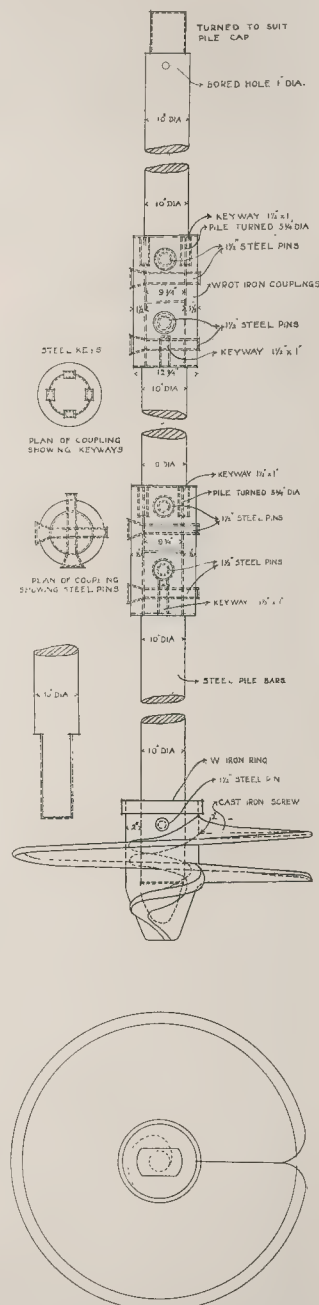
The tunnel will be lined with concrete, with the average thickness of 15 in., and special provision made for backing in places where soft rock may be encountered. The plans make provision for the distribution of water by way of twenty-three uptake shafts of 14 ft. diameter in each of which will be placed a 4-ft. diameter uptake shaft. Twenty shafts will be devoted to drainage purposes, one at a low point of the tunnel near the Harlem River, and another at the lower end of Manhattan Island. During construction the twenty-three shafts will be used as bases for the conduct of driving operations, as also will an additional shaft to be sunk at the northern end of the

tunnel, and afterwards filled up with concrete. Although careful geological investigations have been made by experts on behalf of the Board of Water Supply, the contractors cannot be sure that the rock will be sound throughout, and that there will be no risk of water from various underground springs. The tunnel is so great a depth as to prohibit the use of compressed air, and success can only be attained by pumping out water faster than it flows into the workings. Electrically-operated pumps will be employed throughout, and in cases of emergency the various power-stations in the city can be drawn upon for current. Therefore, given ample resources in the form of pumps, there should be no lack of motive power. Of course it is quite possible that water may be liberated in tremendous volume, but it is hoped that trouble may be averted by keeping the tunnel lined well up to the working face and by driving advance headings to tap underground springs before they can deluge the workings. Nevertheless, the risk both to the contractors and the city authorities is of sufficiently onerous nature to be well employed. The main aqueduct for the distribution of 500 million gallons of water daily to the various districts of Greater New York along the line. The undertaking is a remarkable illustration of the arduous tasks rendered necessary by the continued growth of large cities in modern times.

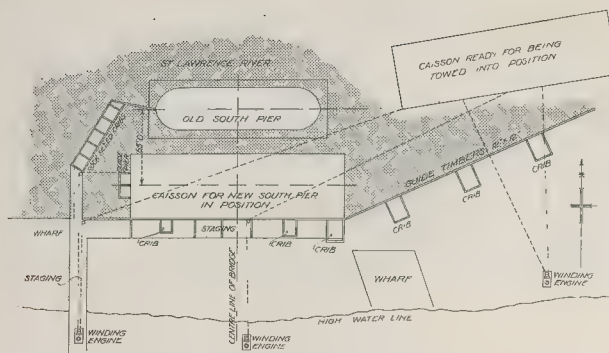
New Station
Buildings at
Baker-street.

New Station Buildings at Baker-street. THE Metropolitan Railway Company have commenced operations on the new building for Baker-street Station, with a frontage of 200 ft. long on Marylebone-road. Additional accommodation for trains will also be provided, including arrangements that will afford much-needed

facilities for the heavy traffic into and out of the City. A feature of the new building will be a spacious concourse 80 ft. long by 50 ft. wide, with stairways of ample width leading down to the station proper. At present the building will only extend to the height of one story above street level, but later it is intended to carry up the building in the form of a large hotel.



Victoria Pier, Fleetwood. Screw Pile.



Quebec Bridge Pier Caissons.

For the new piers destined Quebec Bridge to support the giant cantilever of the Quebec Bridge, three large caissons have been built—one for the south pier, 181 ft. long by 55 ft. 6 in. wide, and two for the north pier, each 85 ft. long by 60 ft. wide.

Caisson No. 1, completed last year, was originally intended for the north pier, but, owing to difficulties in the way of sinking it there, was removed to the dry dock at St. Joseph de Levis and kept there until the present spring. After having been strengthened and thoroughly caulked it was floated out and towed into position by the aid of steam tugs and winding engines, as shown in the accompanying diagram. This caisson is placed 65 ft. south of the old pier, centre to centre, a space of 10 ft. clear being left between the two structures. As the river bed is free from water at low tide the site was levelled in advance, and to assist operations a breakwater of rock-filled cribs was built on the up-stream side, as well as the staging and guide timbers shown in the plan.

The caisson was floated out of the dry dock on May 28 and towed to within about 150 ft. from the bridge, a distance of some 9 miles. Four steel wire cables connected with the winding engines were then attached, and the huge structure was successfully drawn into position, the only difficulty experienced having been to guide it in the rapid current due to the incoming tide. The caisson drew 10 ft. of water, the unsubmerged portion being 30 ft. high.

Caissons No. 2 and No. 3 for the north pier are completed, and were towed into position in May and June last. No. 2 has been sunk several feet below the river bed, and the sinking of No. 3 has been started by this time. These two caissons were 33 ft. high at the time of launching and drew 8 ft. 6 in. and 9 ft. of water respectively. They have been placed 65 ft. to the south of the old north pier, centre to centre, thus providing for the cantilever span of 1,800 ft., as in the original bridge design.

A PAPER read before the Institution of Heating and Ventilating Engineers by Mr. E. R. Dolby, M.Inst.C.E., discusses some of the methods used at the present time to determine the effective head in low-pressure hot-water installations where gravity alone is relied upon to produce the required circulation. Assuming a simple case where the water column is 40 ft. high, the flow temperature 200 deg. F., and the return temperature 160 deg. F., Mr. Dolby gives the head calculated by the formulae of four well-known authorities as follows:—

Hood	6.838 in.
Baldwin	6.708 "
Carpenter	3.900 "
Rietschel	6.710 "

It is seen, therefore, that, whatever be the methods adopted by Hood, Baldwin, and Rietschel in the particular case cited, the results differ very little, but that the head given by Carpenter's rule is only about 53 per cent. of the average value of the other three.

Professor Carpenter, in "Heating and Ventilating Buildings," states that "most computations of the velocity of circulation of hot water have entirely neglected the effect that the mass or weight of the water moved has

on the velocity, and hence the results as computed have been many times greater than actually found." On another page he says:—"As result of experiment the writer found considerable variation in different measurements of velocity, but in no case did he find a velocity greater than that indicated by the formula." The formula in question is:

$$V = \frac{2gh(W_1 - W)}{(W_1 + W)}$$

where W_1 represents the weight of water in the return column, and W the weight of water in the flow column.

The author admits Professor Carpenter to be one of the first authorities on heating in the United States, while pointing out that Professor Rietschel has for many years been esteemed one of the foremost authorities on the subject in Germany. Apparently it is owing to the great difference between the results given by the formulae of these authorities that Mr. Dolby calls into question the theory of Professor Carpenter.

At first sight, he says, it would appear that it should be easy to determine which of the two formulae is the correct one, but the matter is not so simple as it appears, accurate results depending upon a correct estimation of the frictional resistance of the internal surface of the pipes used, and the diminishing viscosity of water as temperature increases.

Discussion on the paper will be continued at the October meeting of the Institution, when it is expected that several interesting communications will be forthcoming.

The Risorgimento Bridge, Rome.

CONNECTING the artistic and ethnographic sections of the International Exhibition in Rome, the bridge opened this year across the River Tiber is remarkable as including the longest reinforced concrete arch hitherto completed, the clear span being 328 ft. and the rise 32.8 ft. The arch proper consists of a curved slab, approximately 66 ft. wide, 18 in. thick at the springings, and 8 in. thick at the crown. The spandrels are hollow, being formed of longitudinal and transverse walls and partitions supporting the roadway above. The abutments are founded on piers sunk by the Compressol system, and, like all other parts of the structure, consists of reinforced concrete. This notable work, which has been tested to the satisfaction of the city authorities, was executed by the Porcheddu Company, having been commenced in November, 1909.

Lifting Magnets.

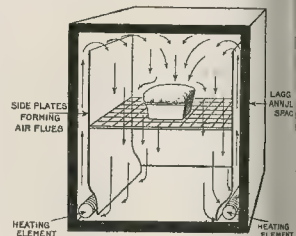
AN application of electricity which has not received the attention in this country that it deserves is indicated in the title of this note. A recent paper by Mr. H. F. Stratton, of Cleveland, U.S.A., gives particulars demonstrating the practical utility of lifting magnets in the iron trade. For a foundry turning out 35 tons of metal daily the crane and magnet installation with the lifting capacity of 1,350 lb. is about 800l., and the cost of handling pig-iron is not more than 3d. per ton. Depreciation is stated at 14l. per ton, thus bringing up the total cost to 25l. per ton. As the cost of handling by manual labour is probably about 5d. per ton, the economy of the magnet plant is obvious.

Electric Cooking Apparatus.

In the *Journal of the Institution of Electrical Engineers* a paper by Mr. Harold Gray discusses the position of "Electric Heating as Applied to Cooking Apparatus," a subject of considerable interest to many of our readers in their professional capacity. The author forwards the strong and weak points of electrical system with the object of indicating the directions in which further improvements are required to popularise a method of cooking possessing obvious advantages over gas from the hygienic standpoint.

Perhaps the most important piece of electrical cooking apparatus in general use and the which is most difficult to make satisfactory operation is the oven. Some makers for the lines of the gas range by combining oven with hot plates and similar appliances. Others make the oven an independent apparatus, an arrangement generally giving the most satisfactory results. It should be noted that the heat-energy applied inside an oven is consumed and lost in three ways: (1) Conduction, (2) loss by radiation, (3) loss due to escape of hot air chiefly when the door is opened. The greatest loss is that due to the fact that if the oven can be arranged so that the heat is only opened when the food is in and taken out, considerable heat economy may be effected.

The author has devoted some time to the problem of electric oven design, and believes that the whole secret of success depends on three things—the provision of uniform heat throughout the cooking space, and a steady circulation of the hot air currents in the correct direction to avoid "airlocks" over and around the food. Given these two conditions the cooking



Gray's Electric Oven.

perfectly uniform throughout the oven, and the door need not be opened periodically for the purpose of changing the position of the object under treatment. It is essential, however, that there should be a light inside and an inspection window, as well as an interior thermometer indicating the temperature.

The accompanying sketch illustrates the arrangements of the electric oven devised by Mr. Gray. Heat is generated by two elements at the bottom, the heated air rising in two side flues formed by plates, emerging at the top in the oven proper. After permeating the cooking space the heated air again passes over the heating elements, as shown by arrows, and the cycle is repeated as long as required. The oven is surrounded by lagging, from 1 1/2 to 2 in. thick, composed of slag wool or fire-divided asbestos.

The type of oven described represents an immense advance on the ordinary electric gas, or fuel oven, where too much top, bottom or side heat usually prevails, its uniformity of temperature, and the perfect distribution of heat being specially noteworthy features. Compared with a gas oven, where the food is bathed in the products of combustion of impure gas, the apparatus shows to much advantage and from figures given by the author it appears that the average cost of operation is not more than that of a gas oven.

The paper to which we refer will probably have the effect of stimulating the endeavours of electrical engineers to advance the application of electricity in the direction indicated, and may be commended to the attention of architects concerned in the equipment of public institutions, hotels, and other buildings where hygienic cooking is an important consideration.

THE BUILDING TRADE.

NEW YORK BUREAU OF BUILDINGS IN 1910.

REPORT just made by the Borough President of Manhattan by Mr. R. P. Miller, M.Am.Soc.C.E., records the operations of the Bureau of Buildings for last year, and in addition the customary statistics containing a deal of information which should be of interest to builders and public authorities in our country.

Building Applications.

The activity of building contractors on a small site where every square foot of land is saved, public parks and open spaces, long ago been allocated, is shown by the fact that in 1910 plans were approved for buildings to cost over 20,000,000, and for 800 new structures representing hundreds of millions of dollars. The average cost of building amounted to 25,000. Compared with the figures of 1870 for the entire city, including Manhattan and much of the Bronx, these for 1910 show two-and-three times the number of buildings and the value per building, the comparison appearing more remarkable when it is borne in mind that at the earlier date the rate of natural development was still in its infancy. The following table gives an analysis of building applications during 1910, excluding applications to existing structures:—

Kind of Building.	No.	Total Cost.	Cost per Building.
Residential Houses	43	\$31,369	\$729
Commercial Houses	208	7,384,600	35,500
Factories	7	191,000	27,286
Warehouses	230	6,106,940	26,550
Buildings	44	2,475,139	56,230
Shops and Workshops	33	441,880	13,388
Stables	11	481,400	43,760
Garages	12	325,000	27,080
Public Buildings	8	631,600	78,950
Private Buildings	10	530,420	53,042
Unfinished	20	29,544	1,477
Unknown	143	\$1,941	\$13

Types of New Buildings.

The satisfactory feature presented by the figures in respect of which applications were made is the large proportion represented by existing construction, as demonstrated in the following table:—

Kind of Building.	No.	Per cent. of Total.	Floor Area sq. ft.	Per cent. of Total.
Existing	250	31.0	19,128,300	68.0
New	413	51.3	8,768,200	31.2
Unknown	136	16.9	201,000	0.7
Total	800	100.0	28,097,500	100.0

Of the fire-resisting buildings are in Murray Hill district, bounded by Third, Twenty-sixth streets, and Lexington and Avenues, but a good many are situated in districts largely occupied by office buildings.

Breaches of Law.

During the year cases relating to lift regulations, breaches of the building law were reported. It is somewhat surprising that nearly 22 per cent. of these were in connection with new buildings and alterations at all. A class of violation that has been particularly troublesome is the use of frame buildings within the fire zone where such structures are prohibited. In the buildings have been completed an injunction could be obtained. The attempt of attempting to enforce the building law by levying fines is emphasised in the report, and it seems clear that prompter and more drastic punishment are needed to insure obedience.

Unsafe Buildings.

During the year 2,341 buildings were reported as unsafe, and of these 1,995 were made safe by the owners on order from the Bureau, in 104 others application to the Supreme Court had to be made, and in others, again, the buildings were demolished.

One very useful duty of the Bureau, finding no counterpart in Great Britain, is that of undertaking all emergency work that may arise in connexion with building operations. Thus the Bureau attend directly to the shoring or demolition of buildings that have partially collapsed, the object being to safeguard the public with the least possible delay. In one special case last year they had to dig out the body of a man who had tunneled under Ludlow street for the purpose of robbing a jeweller's shop, and was killed by a fall of the tunnel roof.

Fire Escapes.

The report states that strenuous resistance is offered to orders made by the Bureau, in compliance with sects. 103 and 108 of the Building Code, to provide adequate egress from buildings in case of fire or panic. Complaints as to the lack of facilities have been received from several sources, including the State Factory Inspector and the Fire Department. During 1910, some 872 cases were reported in which exit facilities were absent or defective, and we learn that a large number of cases still await settlement, many of them being from two to seven years old. This is a state of things clearly demanding attention. The 872 cases mentioned are thus analysed:—Outside escapes needed, 485; escapes out of order, 227; obstructions to be removed, 89; stairways required, 45; doors to open outward, 14.

Lift Inspection.

Periodical inspection is made by the Elevator Division of 8,420 passenger lifts, with the result that about 1,000 breaches of the rules were reported during the year. No inspection is made of the 10,000 goods lifts in the borough. Unfortunately, lift accidents are not fully reported at present, but from a record attempted during the last five months of 1910 it seems ten passenger and four goods lift accidents occurred, with seven persons killed and fourteen injured. Six of these misadventures were due to defective ropes and machinery, and five to carelessness of passengers.

In consequence of an accident early in the year, when a number of persons were injured owing to the fracture of the sheave strap in the lift of a ten story building, a new regulation was issued demanding the reconstruction or strengthening of all such straps in use. This regulation has been rigorously enforced, and its wisdom is justified by the discovery that in sixteen cases the straps were found broken when the machinery was taken apart, and it was mere good fortune that more accidents had not occurred.

Brick, Cement, and Concrete Tests.

An important duty undertaken by the Bureau is the testing of materials in the form of bricks, in order to furnish data for the issue of regulations and the modification of the regulations already in force. The following table gives the average results of tests made by the Bureau up to the end of last year:

Kind of Brick or Blocks.	No. Tested	Modulus of Rupture lb. per sq. in.	Compressive Strength lb. per sq. in.		Absorption by Weight per cent.
			Dry	Wet.	
Clay (common)	59	169	3,959	2,702	15.00
Clay (pressed)	6	983	6,361	8,924	9.80
Cement 1: 4	5	475	4,394	2,594	10.67
Concrete (limestone) 1: 1.2: 2.4	7	895	4,189	2,537	
Concrete (trap) 1: 2.5	10	946	3,856	3,328	9.40
Clinker	12	946	4,716	3,678	3.70
Sand Lime	150	500	3. 78	3,094	12.34

OLD MATERIALS ON A BUILDING SITE.

FROM A LEGAL CONTRIBUTOR.

Who is entitled to the old materials on the site when new buildings or works of any other description are to be erected? This is a question which is often asked in practice, and it is important for the builder to know the correct answer. Sometimes, of course, the matter is provided for in the contract entered into between the parties; and to avoid the possibility of dispute it is always best to insert a clause dealing with old materials, for, in spite of a common belief to the contrary effect, it is clear law that an obligation upon a contractor to clear away old materials does not necessarily vest those materials in him. Again, where, by his contract, a contractor is bound to make an excavation, the material excavated does not necessarily become vested in him. On the contrary, if a contractor make use of materials thus supplied to him, the employer may set off their price against the amount due under the contract. For instance, in one case the plaintiff contracted to do certain work for the defendant, and to find the materials which the plaintiff made use of in the work. It was held that the defendant was entitled to deduct the value of the materials supplied by him from the contract price.

The importance (to the employer) of some clause dealing with old materials lies in the fact that, if nothing is said about them, the contractor may remove them. Having removed them, he may sell them. In that case, if he were to become bankrupt, the employer could not get the goods back, but would be relegated to his right of proving for their value in the contractor's bankruptcy. In these circumstances the architect should be careful to secure the insertion of an old material clause in the contract, by which his employer is to become bound. Where the contract for erecting a building or executing other works makes no reference to old materials, it seems that the contractor will be under an implied obligation to clear them away. In drawing his specification, the architect often inserts a clause to the following effect:—"Materials on the site to be used as far as possible." If a tender is made by a builder on the basis of such a specification, care should be taken to ascertain whether any deduction has been made in respect of old materials. If the builder, having made no deduction, makes use of any of the materials, the architect may set their value off against the contract price; and even if he has made a deduction, but has not informed the architect of the fact, there may still be a set off. For instance, in a case tried in 1867, the plaintiff, a builder, sued for the sum of 800l., the contract price payable on completion of the works. The architect had certified that the works were completed. The contract contained the following clause:—"All old lead to be displaced by new to become the property of the contractor, who will make a due allowance for same." The defendant employer pleaded a set off of 38l., the estimated value of old lead. It was held that, as the contractor could not prove that he informed the employer or the architect that, in making his estimate, he had allowed for the value of the old lead, the set off was good.

The following is a convenient form of old material clause:—"All materials upon the site

or upon the space to be covered by the contract works at the date of the contract, and all materials and things excavated by the contractor from the works, shall remain the property of the employer until paid for by the contractor. Such of them as shall be approved by the architect for the purpose of the works shall be paid for by the contractor at a price to be named in his tender or, if not named, to be ascertained by the architect, and all other materials shall be removed by the contractor from, or deposited, stacked, or spread on the site as where and when directed by the architect."

In cases where the contractor is not permitted to remove gravel, ballast, etc., the following clause is sometimes used:—

"The contractor shall not sell or otherwise dispose of, except by using the same for the purpose of the contract and the works to be constructed and erected thereunder, any sand, stone, gravel, clay soil, or other material, or substance of any kind or description whatsoever which may be obtained from excavations or found on the ground by the contractor."

BOILER EXPLOSIONS IN 1910.

From the recently issued Board of Trade Report it appears that the total number of boiler explosions and personal injuries resulting therefrom during last year were above the average for the past twenty-seven years. Two satisfactory points, however, are that the number of persons injured was little above the average, and that the number of fatal accidents was only about half the average. As the term "boiler explosion" covers mishaps in steam pipes, steam chests, steam cooking ovens, and all kinds of apparatus where steam is used, the number of accidents reported is no criterion as to boiler explosions proper, and we are glad to find that there is no increase in serious explosions. Of the 103 explosions reported, sixty happened on land and forty-three on ships. The causes of explosion, as given in Appendix B, were as follows:—

Deterioration or corrosion, 26; defective design or excessive pressure, 32; defective workmanship or materials, 16; water-hammer, 9; ignorance or neglect of attendants, 8; miscellaneous, 12.

The following is a classified list of the boilers and apparatus in which explosions occurred:—

Horizontal multitubular boilers, 16; locomotive-type boilers, 3; water-tube boilers, 9; vertical boilers, 6; Lancashire boilers, 2; tubes in steam ovens, 16; heating apparatus, 3; steam pipes, stop-valve chests, etc., 30; miscellaneous, 19.

In forty-six cases the boilers and apparatus were not subject to insurance or expert inspection, the latter being a safeguard which should always be adopted in connexion with steam generating plant. From the first classified list given above it will be seen that most of the accidents were due to preventable causes, and we hope that avoidable explosions may soon be obviated entirely. The valuable work of the Board of Trade in investigating all mishaps, whether serious or trivial, is certainly helping towards this desirable end.

PALMER'S TRAVELLING CRADLES AT THE ARMY AND NAVY STORES.

MANY of our readers are familiar with the bridge connecting the front and back buildings of the Army and Navy Stores in Victoria-street, Westminster, the structure in question being at such a distance above the intermediate street as to render it inaccessible by ordinary means for the purpose of exterior cleaning and painting. If ordinary scaffolding were employed, the cost of erection, with due provision for the conduct of vehicular and pedestrian traffic, would be quite disproportionate, as may be understood without much consideration. Thanks, however, to the suspended scaffold introduced by Palmer's Travelling Cradle and Scaffold Company, the difficulty has been readily surmounted in the case of this and various other large buildings in London and elsewhere.

The accompanying view shows two of the cradles suspended from overhead wire cables stretched between the two blocks of the Army and Navy Stores, enabling workmen to get



Palmer's Travelling Cradles at Work at the Army and Navy Stores.

at every part of the intercommunication bridge without the least trouble.

It is unnecessary for us to give particulars as to the details of the cradles, as these were fully stated in our article of March 10 last on "Scaffolds for Steel-Frame Buildings."

ASPHALT: SUPPLIES AND PREPARATION.

JOSEPHUS, in his antiquities of the Jews, states that Nimrod, the grandson of Noah, incited the people to build a tower "which was so great and strongly built that its great height seemed, on the view, to be less than it really was. It was built of burnt brick cemented together with mortar made from bitumen that it might not be liable to admit water. The place where they built the tower is called Babylon." Herodotus says that, in building the walls of Babylon, the clay dug out of the trenches, afterwards to form the moat, was made into bricks as soon as it was carried up, and burnt in kilns. When they had a sufficient number the bricks were cemented together with hot bitumen, and at every thirtieth row craters of reeds were inserted.

The bitumen was obtained from the River Is, a tributary of the Euphrates, and was brought to Babylon; lumps of bitumen being found in great abundance floating in the river.

Josephus explains that it was collected in ships by those whose trade it was, and, being difficult to pick up, vinegar was poured over it, which stiffened it. Once having started one end into the ship the rest followed and continued until the ship was full. The sailors then cut it to prevent any more entering.

As a steel or brass knife would not cut, they had to resort to another expedient. They smeared blood across the bitumen, which caused a break immediately, and the knife ceased.

In the alluvial plains of Assyria, both clay and bitumen were found, the bituminous cement bubbling out of the ground. It collected by the Arabs at the present day.

There are also very early evidences of the use of bitumen as a lining for cisterns and water tanks.

Mineral pitch, asphalt or asphaltum, in the Dead Sea, where it was also found in ancient times, is produced by the decomposition of animal and vegetable substances. Its colour it varies from a black to a blackish brown not unlike coal in appearance. Its general nature is therefore resinous with a s.g. of 1.5, and its chemical formula is $C_{18}H_{16}O$.

The lake at Trinidad having an area of about 99 acres is the most remarkable deposit being of unknown depth intersected by streams of water. It also occurs in the surrounding country in deposits of varying size and as old floats down the river or is cast upon the seashore. It also is to be found in various places in Europe, but not to any great extent, usually being found in greatest abundance in hot climates.

In Cuba, a very fine asphalt is found known as Mexican asphalt, and also a fine asphalt of pure variety comes from Peru.

Asphalt stone, a limestone impregnated with bitumen, occurs in various parts of Europe in large quantities, is of greater commercial value. The best known are those of the Val de Travers canton of Neuchâtel, Seyssel in France, and Limmer near the city of

and also at Hölle, in Ditmarchin
Schellbronn in Alsace.
Asphalt is sometimes improperly
denote the natural bitumen or pitch,
impregnated with bitumen, tar-
oil, or tar-concrete, a mixture of
broken stone, and coal-tar, and pitches
of artificially-mixed residuum oils
and naphtha, oil and animal
oil, and asphalt. But true asphalt
is a natural product, and may be
found as "calcareous rock impregnated
with bitumen." The manufacturers
heat lumps of rock, mined in the ordinary
manner, and reduce them to powder by means of
rollers, screened, reground, and stored
over. It is then heated in slowly-
revolving cylinders at a temperature varying
from 200° Fahr. to 280° Fahr., or at a slightly
higher temperature in colder weather. The
heat of coal or wood, as coke, for
example, injures the asphalt. The heating
is for a few hours, during which
the asphalt is taken to maintain a uniform
temperature because if it is underheated the
mass will not bind properly when laid,
and if over-heated it will fuse.

The heating has for its object the removal
of water, and to obtain the best binding
for heavy traffic the powdered form
of asphalt has proved to be the best. It is
then powdered in thicknesses
from 2 in. to 3 in. thick, raked
and rammed or tamped with hot
iron about 12 lb. weight, and whilst still
hot rolled with a 10-ton roller to
make the whole even.

THE STRIKES AND EMPLOYMENT.

figures published in the *Board of Trade
Gazette* furnish food for thought.
Now an improvement in employment as
compared with a year ago. The trade union
show 33 per cent. unemployed as
compared with 4 per cent. August, 1910.
So show a net increase in the results
of the strikes in the rate of wages of 9,400
men, and these are two signs much relied
on indicating a period of prosperity; yet,
this, the strike demon overshadows
all, and during the month 100 new
strikes were commenced, and the number of
men involved in current disputes was
over 184,507 more than in July, whilst
working days lost during this one month
were 323,800. Up to the end of July
working days had been lost, so the
total now reached 7,821,800 working days.
Whole year 1909 but 2,560,425 working
days were lost, although 1908 was a bad year
with 6,625,678 working days lost through
strikes. We have not the figures for 1910
yet, but the above statistics surely show
that the industrial nation can prosper when
the conditions of trade are squandered
in strikes days lost to this extent through
strikes. The 7,821,800 working
days lost in the eight months of this year
represent a loss in wages to the working
classes approximating 2,000,000.

GOVERNMENT CONTRACTS.

Following tenders have been accepted
the past month by the Government
contracts named:—*Admiralty, Works De-
partment*: Tar macadam for Dover Messrs.
J. & Co., 20, Tothill-street, S.W.; works
for floating booms, and gates Mr. J. J. T.
Alison Shipyard, Portsmouth;
detention quarters, Chatham Messrs.
J. & Beal, Ltd., 1, Arthur-street, East,
reinforced concrete jetty, Portsmouth—
H. Lovatt, Ltd., Darlington-street,
London. *War Office*: Works services—
of Amey, Somerset Barracks, Shorn-
cliffe, J. T. Denno, Walmer, Kent;

erection of barrack store, Army Ordnance Es-
tablishment, Burscough—Mr. G. L. Desoer,
Everton-road, Liverpool; erection of bomb-
proof shelter, engine-house, Pon Farm—Mr. J.
Crockerell, Bulford Camp; erection of canteen,
Dunree—Mr. R. Coulhoun, Londonderry;
erection of fire engine shed and vehicle shed,
Presno—Mr. R. Holt, Badger-street, Bury;
erection of stables for commanding officers,
Bordon—Messrs. Martin, Wells, & Co., Ltd.,
Victoria-road, Aldershot; new drainage works,
etc., Glen Parva Barracks, Leicester, and
erection of reception station, Strensall, Mr.
A. Robinson, Woodbine Works, Idle, Brad-
ford; periodical works services at:—Black-
down and Deepcut, Bulford Camp, Chatham,
Kildare, and Woolwich (2nd Division)—Mr.
F. Holdsworth, Shipley, Yorks; Dublin (Por-
tello and Richmond Barracks)—G. Morrow
& Sons, Clifton-street, Belfast; Millbank,
London—Mr. M. McCarthy, Heidelberg,
King's-avenue, Clapham Park, S.W.; Netley
Hospital—Messrs. G. F. Smith & Co., Eldon-
street, Southsea; Norwich and Winchester—
Messrs. Skevington Bros., Bateman street,
Derby; Warrington—Mr. D. E. Hutton, 7,
Briggat, Shipley; re-crowning and repair of
gas holder, Royal Gas Factory, Woolwich
Arsenal Messrs. Newton Chambers & Co.,
Ltd., Thorncliffe Ironworks, near Sheffield;
remetalling roads and parades, Ponsonby and
Stewart Barracks, Curragh, and renewal of
rough casting, Newbridge—Mr. T. O'Mahony,
Fernoy, co. Cork; renewal of stable paving,
Royal Pavilion Stables, etc., Aldershot—Mr.
J. Crockerell, Stanhope Lines, Aldershot;
repair and maintenance of War Department
buildings, Landguard Messrs. W. F. Blay,
Ltd., Belford-grove, Woolwich; supply and
erection of aeroplane shed, Doughty Down,
Salisbury—Mr. W. Harbrow, South Bermond-
sey Station, S.E. *India Office, Store Depart-
ment*: Bridgework—Messrs. Horsley Com-
pany, Horsley. *Crown Agents for the
Colonies*: Bridge—Messrs. Thames Iron-
works, Ltd., Canning Town, E. *Bridge-
work*—Messrs. The Horsley Company, Ltd.,
Tipton, Staffs.; cement—Messrs. Associated
Portland Cement Manufacturers, Ltd., 8,
Boyd's-avenue, E.C.; Messrs. Peters Bros.,
12, Victoria-street, S.W. *Messrs. Woulham
Cement Company, Ltd.* 35, Great St. Helen's,
E.C.; steelwork, etc. Messrs. William Bain
& Co., Ltd., Lochrin Ironworks, Coatbridge;
structural work—Messrs. The Horsley Com-
pany, Ltd., Tipton, Staffs. *Office of War-
like Buildings*: work—National Gallery of Scotland,
reinforced concrete roofs—Messrs. Scott, Mar-
shall, & Co., 2, St. Andrew's-square, Edin-
burgh; Somerset House, repository—Messrs.
Galbraith Bros., Ltd., Chamberwell Green,
S.E.; drainage, Babney House—Messrs. Dent
& Hellyer, 35, Red Lion-square, W.C.;
Chelsea Hospital—Messrs. John Peattie &
Son, 3, Victoria-grove, Kensington, W.; forced
circulation heating apparatus, Windsor Castle,
Royal Gardens—Messrs. Mackenzie & Moncur,
Ltd., Balcanes-street, Edinburgh; heating
services, British Museum extension—Messrs.
The Brightside Foundry and Engineering
Company, Ltd., 28, Victoria-street, S.W.;
National Gallery, west wing, and Patent
Office extension—Messrs. Cammell & Heford,
Stanbury-road, Peckham, S.E.; hot-water
service, Imperial College of Science—Messrs.
The Brightside Foundry and Engineering
Company, Ltd., 28, Victoria street, S.W. *General
Post Office, Engineering Department*:
Electric lifts, West Central District Office,
London, W.C.—Messrs. Medwards Safety Lift
Company, Rolt-street, Deptford, S.E. *Metro-
politan Police*: Carrying out alterations at
Kennington-lane Section House—Messrs.
Prestige & Co. Ltd., Cambridge Wharf,
Grosvenor-road, S.W.; erection of new station
and stables at Plaistow—Messrs. E. Lawrence
& Sons, Ltd., 35, Wharf-road, City-road, N.

GENERAL BUILDING NEWS.

CONGREGATIONAL CHURCH, KINGSWOOD.

The various alterations and additions to
this church have been carried out from the
designs of Messrs. La Trobe & Weston, archi-
tects, of Bristol. The contract has been
carried out by Messrs. Palser & Newton,
builders, of Bath.

NEW CHURCH, PLYMOUTH.

The new church of St. Mary the Virgin is
being erected at a cost of about 10,000l., from
the designs of Mr. T. R. Kitsell, architect.
The builders are Messrs. Pethick Bros.

ST. JOHN'S CHURCH, CANNONBURY.

A new reredos and some carved panelling
have been placed in this church at a cost
of about 250l., and the panelling was executed
in Austrian oak by Mr. A. Robinson, of
Bloombury. Various other improvements
have been carried out, including the remodel-
ling of the electric-light installation. The

architect for the work was Mr. J. C. Stock-
dale, of Bloomsbury.

NEW HIGH SCHOOL, WELLINGBOROUGH.

This school for girls has been erected from
plans prepared by Messrs. Sharnham &
Archer, architects, of Wellingborough, and the
builders were Messrs. Hacksley Bros. The sub-
contractors were:—Messrs. Hargis & Sons
(stone work), Mr. Jayes (plastering), Mr.
Crisp (plumbing, painting, and glazing), Mr.
Mansell, Northampton (electric lighting). The
hot-water apparatus, Messrs. Marriott & Co.

NEW SCHOOL, RHYOL.

This school has been erected at a cost of
about 13,356l. from the designs of Mr. W.
Rushworth, architect, and provides accommo-
dation for 207 scholars. The contract was
carried out by Mr. W. B. Cooper, of Sunder-
land.

GRAMMAR SCHOOL, WOLINGHAM.

This new school has been erected at a cost
of 11,537l., and provides accommodation for
about 150 scholars, with an assembly hall, hold-
ing 200 persons. The architect was Mr. W. T.
Richardson, M.S.A., of Stockton-on-Tees, and
the contract was carried out by Mr. T. Hilton,
builder, of Bishop Auckland.

NEW SCHOOL, TEWLSBURY.

The estimated cost of the erection of this
school is about 1,800l., and the work has been
carried out by Messrs. Collins & Godfrey,
builders. The architect was Mr. R. S.
Phillips, of Gloucester.

NEW SCHOOL, UFFERMILL.

With reference to the short paragraph under
this heading in our last week's issue (page
310), an error was made in giving the name
of Mr. Graham as the county architect. The
plans for this school were prepared by Mr.
John Stuart, the county education architect,
and the work carried out under his supervision.
Mr. Graham was the contractor for the works,
and the clerk of works was Mr. H. Schofield.

LOWESTOFT PAROCHIAL HALL.

A new Parochial Hall is being erected at
Lowestoft in Alexandra-road. The contract
for the building of the institute was 4,000l.
Messrs. Mobbs Bros. have been entrusted with
the building contract, the architect being Mr.
H. C. W. Blyth, Lowestoft. St. Margaret's
Parish Institute is designed in the late Gothic
style, with a façade of red brick and bath-
stone dressings. It consists of a hall on the
first floor, 60 ft. by 30 ft. There are seven
class-rooms opening on each side, with a plat-
form at the end, retiring rooms, and lavatories.
On the ground floor are the institute rooms,
billiard-room, reading-room, a small hall 36 ft.
by 24 ft., choir practice-rooms, kitchen, guild
and class-rooms, and a crush hall. It is a
two-story building.

HALL, ST. ANDREW'S.

A large hall has been built for the quin-
centenary celebrations at St. Andrew's
University, by Messrs. D. Meandrew & Co.,
builders and contractors, Aberdeen. The hall
is situated on the tennis courts behind the
United College, and measures 225 ft. long by
50 ft. wide, and is seated for 3,500 people.
The hall is roofed in three bays, the central
bay having a span 50 ft. wide by 24 ft. high
to the underside of the tie, and two parallel
side bays each 20 ft. wide by 17 ft. high to
underside of tie. At the west end of the hall
the platform extends across the full width of
90 ft., and is 20 ft. wide, approached by three
sets of stairs from the main level of the floor
and with two exit doors leading from a plat-
form to a corridor behind. At the east end
of the hall there has been formed a band
gallery, with a floor area 30 ft. by 16 ft.,
approached by a separate stair outside. A
corridor 6 ft. wide extends from the east
door the full length of the hall, terminating
with a flight of steps to the platform. At the
quadrangle entrance a cloak-room has been
fitted up for 750 guests, and also a robing-
room, 40 ft. by 20 ft. At the Scores entrance
a cloak-room has been fitted up for 500 guests,
and for the guests entering from North-street
cloak-rooms have been formed in the Physics
Laboratory and the Chemical Laboratory.
The hall and corridors are lighted by
electricity.

TRADE NEWS.

Under the direction of Mr. S. Clifford Tee,
architect, 50, Moorgate-street, E.C., Boyle's
latest patent "air-pump" ventilators and air
inlets have been applied to the new Synagogue,
Harringay, N.

Kent-street School, Portsea, has recently
been fitted with a number of D. O. Boyd's
hygienic ventilating school grates, supplied by
Messrs. O'Brien, Thomas, & Co., Upper
Thames-street, London, E.C., and Excelsior
Works, South Bermondsey.

In reference to the illustration which
appeared in our issue for September 8, the fire-
places throughout the new building for the

King Edward Memorial Hospital, Ealing, were supplied by the Well Fire & Foundry Company, of Berners street, W.

Messrs. The Tilbury Contracting & Dredging Company, Ltd., of Westminster, have been successful in securing a contract for the supply of some 200,000 cubic feet of freestone from their Walldan Quarries. This stone is required for the construction of buildings at the Naval Base, Rosyth, among which are the Pumping Station, the Power Station, the sub-Electric Station, and the Boat House.

The new electric theatre, Bournbrook, Birmingham, is being supplied with Shorland's patent exhaust roof ventilators, by Messrs. E. H. Shorland & Brother, Ltd., of Fails-wharf, Manchester.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Baths (10,500l.). Mr. W. Dyack, Surveyor, Town-buildings, Aberdeen.

Aberford (Yorkshire).—Chapel (4,000l.). Mr. H. A. Chapman, Prudential-buildings, Leeds.

Alfredshot.—Drill hall; Mr. W. J. Snugg, builder, Birchett-road, Aldershot.

Arbroath.—Proposed reconstruction of infirmary (3,000l.); the Directors.

Banbury.—Offices and additions to mills. Station-road, for Messrs. Clarke, Ltd.

Barry.—Training college for women (36,000l.). Messrs. Tether & Wilson, architects, Queen-street, Cardiff. Messrs. W. Thomas & Co., builders, Tressilian terrace, Cardiff.

Broadford (Skeg).—McKinnon Memorial Hospital (3,000l.). Mr. W. L. Carruthers, architect, 22, Queensgate, Inverness.

Buckhurst (near Hatfield, Sussex).—Residence; Messrs. Tubbs & Messer, architects, Railway-approach, Woking; Messrs. Drowley Bros., builders, Woking.

Cardiff.—Offices, Queen-street, for the Principality Building Society; Messrs. Habershon, Fawcett, & Co., architects, 14, Pearl-street, South, Cardiff.

Cardinal (Renfrewshire).—Four cottages, Lennox and Westfield roads; Mr. John Young, Lennox-road, Cardonald.

Chester-on.—Pavilion, Milton-road, for the Marglens College Amalgamated Clubs. Extensions to works, Camford-street, for the Cambridge Scientific Instrument Company. Extensions to works, Garden-walk, for Messrs. Pollard & Co.

Clydebank.—Church; architect, care of the Trustees, Morrison Memorial Church.

Coatbridge.—Additional premises for the Coatbridge Co-operative Society.

Coloraine.—Sixty-six houses (11,300l.). Mr. S. J. M'Fadden, architect, care of the Clerk, Coleraine Rural District Council.

Countess Wear.—Farm buildings (4,000l.). Messrs. E. H. Harbottle & Son, County-chambers, Exeter.

Crewe.—Chapel (5,000l.), in connexion with the convent in Nantwich road.

Cwmbrwla (Swansea).—Proposed school; Mr. A. W. Halden, Secretary, Education Committee, Swansea Town Council. Three houses, Middle-road; Messrs. J. & F. Weaver, builders, Manselton Steam Joinery Works, Cardiff.

Dean Bank (Durham).—New church; Mr. J. R. Grossart, Durham-road, Finden hill, Sacriston, Durham.

Downfield School (4,000l.). Mr. R. S. Phillips, architect, The Cross, Gloucester.

Dublin.—Repairs to baths and wash-houses, Tara-street; Mr. C. J. McCarthy, Architect, Dublin Corporation.

Dunfermline. Laundry. Secretary, Dunfermline and West Fire Laundry, Ltd., 143, High-street, Dunfermline.

Earsdon.—Picture theatre; Mr. R. T. Whitebarn, Whitley Bay, Northumberland.

Eccles.—Extensions to Eccles and Patricroft Hospital (5,660l.). Messrs. Hardman & Jones, builders, Devonshire road, Eccles.

Edinburgh.—Nursing home, Chalmers-street (11,000l.); Mr. T. Duncan Rhind, architect, 28, Rutland-street, Edinburgh. Ice rink, Haymarket, for Messrs. John Swan & Sons.

Exmouth.—Police buildings (5,000l.). Messrs. Harbottle, architects, Queen-street, Exeter.

Gillingham (Dorset).—Swimming bath; Mr. W. J. M. Marriish, Wyke-road, Gillingham.

Gillingham (Kent).—Alterations to club and institute, Balmoral-road, for A. S. E. Club, Gillingham.

Glasgow.—Extensions to glass warehouse, Waterloo-street (2,500l.). Mr. John B. Wilson, architect, 82, Bath-street, Glasgow.

Govan.—Workshops for the London and Glasgow Shipbuilding Company.

Great Whyte (Hunts).—Four houses; Mr. A. J. Bateman, builder, High-street, Ramsey, Hunts.

* See also our list of Competitions, Contracts, etc., on another page

Gwaclodywain.—Proposed school; Mr. T. G. Jones, Secretary, Education Committee, Monmouthshire County Council, Newport.

Halifax. Conversion of premises, corner of Commercial street and Cheapside, for the Bradford and District Banking Company.

Hayes.—Offices, etc., for the Gramophone Company.

Hebburn. Officers and workshops, Messrs. Hawthorn, Leslie, & Co.'s shipyard; Messrs. Boyd & Groves, architects, Emerson-chambers, Blackett street. Newcastle-on-Tyne; Messrs. Lowry & Sons, builders, Newcastle-on-Tyne.

Hednesford (Staffs).—Technical institute; Messrs. H. Dorrie & Son, builders, King-street, Cradley Heath, Staffs.

High Springwell (Durham).—Villa (1,000l.); Mr. H. T. Gradon, architect, 22, Market-place, Durham.

Ilkeston.—School, Bennerley-street; Mr. H. T. Sudbury, architect, 35, Lord Haddon-road, Ilkeston.

Kirkmichael (Perthshire).—Extensions to school (2,200l.); Mr. Lake Falconer, architect, 27, Union Bank buildings, Blairgowrie.

Leirdale.—Additions to public school (1,800l.); Architect, care of the Kirkintilloch School Board.

Leigh.—Police officers' quarters; Mr. P. J. Sheldon, Surveyor, Essex County Council, Chelmsford.

Leominster.—Chapel, etc., at cemetery, Hereford road; Messrs. Turford & Southwell, builders, Ludlow.

Liverpool.—Additions to Parkhill Hospital (1,050l.); Mr. J. P. Alexander, City Building Surveyor, Liverpool Town Council.

Lowestoft.—The following plans have been passed:—Mr. C. E. Chitoph, four houses, Carlton-road; Trustees of Beaconfield Club, Club House, Surrey street.

Lurgan. Fifty houses; Surveyor, Lurgan Urban District Council. (Architect to be appointed.)

Lytham.—Institute in connexion with St. Peter's Roman Catholic Church, Lytham.

Maesteg (Glam.). Proposed Council offices; Mr. S. J. Harpur, Surveyor, Maesteg Urban District Council.

Mallaig.—Extensions to public school (2,105l.); Mr. James Falconer, architect, 4, Cameron square, Fort William.

Mansfield. Woodhouse. Adaptation of Wesleyan chapel and schools for public offices; Mr. F. P. Cook, Surveyor, Mansfield Woodhouse Urban District Council.

Mexborough.—Public baths (5,000l.); Mr. G. F. Carter, Rural District Council Offices, Mexborough.

Muirrow. School (5,000l.); Mr. Ralph Little, architect, 15, Ribblesdale place, Preston.

Monkerton Pinhoe. Extensions to farm house, also new farmhouse and six cottages; Messrs. Ellis, Son, & Bowden, Bedford chambers, Exeter.

Morton (Durham). Proposed house on Knarborough Estate; Mr. G. Waterhouse, Surveyor, Eastington Rural District Council.

Newcastle-on-Tyne.—Building, Market street; Messrs. Anderson, Sons, & Hedley, auctioneers, Market street, Newcastle-on-Tyne.

Newlands (Renfrewshire).—Nineteen cottages, Auldhouse-road; Mr. John Baxter, Woodhead-avenue, Kirkintilloch.

New Mills.—Shed for Messrs. Crowther, Bruce, & Co., Ltd.

Newport and Bedwellty (Mon.).—Police stations (3,600l. and 2,800l.); Mr. W. Tanner, Surveyor, County Hall, Newport, Mon.

Newtownards.—Reconstruction of post office; Messrs. J. A. Gordon & Sons, builders, Ann-street, Scrabo, Newtownards.

North Seaton, Throckley, and Emblethorpe.—Schools (2,600l., 7,000l., and 2,800l.); Mr. W. Crozier, County Surveyor, Shire Hall, Durham.

Paignton (Devon).—Alterations to school, Curledge-street (750l.); Mr. H. Drew, builder, care of Mr. J. F. Young, Secretary, Education Committee, Devon County Council, Exeter.

Paisley.—Additions to offices and stores, Hawkhead-road, for Messrs. Doultou & Co., Ltd.

Pengam (Mon.).—School (7,125l.); Mr. R. Jones, builder, Caerphilly.

Portadown.—Proposed eighty houses; Surveyor, Portadown Urban District Council.

Portsmouth.—Extensions to public school; Mr. John Wittet, architect, 81, High-street, Elgin, N.B.

Prestwood.—Extensions to car depot (3,400l.); Mr. H. F. Street, Electrical Engineer, Southampton Town Council.

Princes End (Tipton).—School; Mr. E. Richards, Secretary, Education Committee, Tipton Urban District Council.

Rugby.—Enlargement of St. Marie's Schools (700l.); Mr. Rourke, builder, Lutterworth.

Scarborough.—Proposed extensions to the sanatorium (600l.); Mr. P. H. Reed, Clerk, Board of Guardians, Scarborough.

Seaham Harbour (Durham).—Enlargement of school (500 additional places); Mr. J. A. L. Robson and A. J. Dawson, Secretaries, Education Committee, County Council, Durham.

Silksworth (Durham).—Enlargement of school (150 extra places); Messrs. J. Robson and A. J. Dawson, Joint Secs., Education Committee, Durham Council, Durham.

Southampton.—Shelter, convenient, Hollybrook Cemetery (475l.); Mr. R. Crowther, Borough Engineer, Southampton Council, Residence, 9, Park Bassett; Messrs. Potter & Warren, architect, Church-street, Yeovil.

Southchurch.—Police officers' quarters; Mr. J. Sheldon, Surveyor, Essex Council, Chelmsford.

Southend.—Parish hall (250 places), in connexion with St. Helen's Roman Church, Southend.

Southport.—Catholic school; Mr. Gilbertson, architect, 13, Harrington, Liverpool.

Stafford.—Proposed engineering works; Messrs. W. H. Dorman & Co., Ltd.

Staveley.—School, corner of Eckington Barrow Hill roads; Mr. E. W. Small, Surveyor, Education Committee, Derbyshire Council, Derby.

Stockport.—Police station and (30,000l.); Mr. J. Theo. Halliday and Peterson, architects, Manchester and port. Extensions to hospital, Dalston (ward); Mr. W. B. Beattie, builder, well-street, Stockport.

Stoney Stanton.—Additions to premises the Stoney Stanton Co-operative Society, Sunderland.—Premises for Messrs. C. Speeding Bros.

Swansea.—The following plans have passed:—Messrs. J. & F. Weaver, houses, Middle-road, Cwmbrwla; Mr. J. Williams, three houses, Mansel-road; Mr. David Symmons, twelve houses, Plasmyd; Mr. Hyman, additions to Olympic Skating Rink, Oxford.

Mr. David Thomas, eight houses, street; Mr. James Taylor, seven Monty-street; Messrs. J. B. Jenkins & four houses, Bernard-street; the Sec Education Committee, Swansea Town Council, additions to St. Thomas's School; Mr. Brown, six houses, Jersey-terrace; Charles Gustavus, three houses and High-street; Mr. William Coutts, bi hall, High-street; Messrs. Thorne & C. Williams, Cambrian-place. The following plans have been lodged: Mr. W. J. H. five houses, Spencer-street, Brynhyfryd; Hopkin Williams, ten houses, Mansel Chapel Trustees, proposed additional chapel, Sydney-street, Brynhyfryd; Mr. Thomas, four houses, Pentrechrystall; Tranent, School (5,000l.); Mr. P. J. cross, architect, Prestonpans.

Tredegar (Mon.).—Proposed swimming baths; Mr. W. L. Roach, Surveyor, Tre Urban District Council.

Treorchy.—Congregational school and schools (3,000l.); Mr. W. Beadon, architect, 3, Dunfries-street, Cardiff.

Turton.—Additions to Vale Mill, Edgworth Spinning Company, Ltd.

Twickenham.—The following plans have been lodged:—The Estate Land and H. Ltd., cinematograph theatre, Richmond.

Mr. F. J. Fisher, additions to "Head" public-house, Albion-road.

Utteter.—Remodelling the Smith (2,562l.); Mr. M. A. Boswell, builder, Hampton.

Valleyfield.—One hundred and nine houses for the Fire Coal Company.

Walsall. The following plans have passed: The Managers, additions to St. John-street; Mr. S. Wilkes, additions to Bullocks Fold, Bloxwich; Walsall Co-operative Society, Ltd., shop, etc., Wednesbury Pile.

Wells.—Extensions to Wells Blue (2,000l.); Mr. J. A. Pictou, architect, B. Somerset; Mr. S. Wikham, builder, L. water.

Whittle-le-Woods.—Institute; Architect of the Vicar, St. John's Church, Whittle Woods.

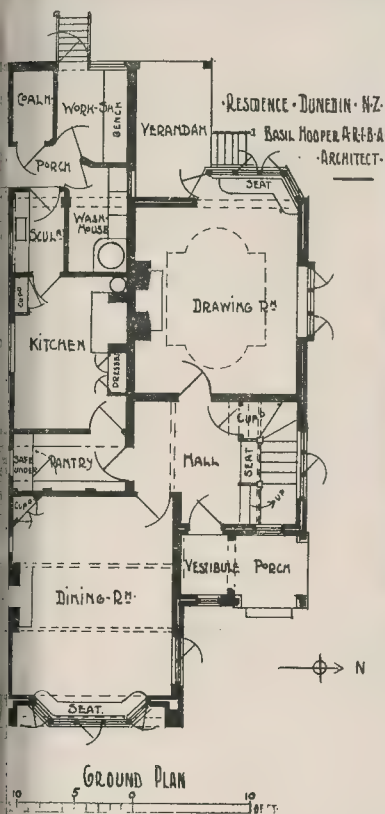
Willington.—Twenty houses; Mr. J. Armstrong, builder, care of Willington Co-operative Society, Willington.

Winchcombe (Gloucester).—Addition to workhouse; Mr. H. W. Stephens, Clerk, of Guardians, Winchcombe.

Wokingham.—Proposed public baths; Mr. W. Marks, Surveyor, Wokingham Council.

Wolverhampton.—Additions to electricity generating station (6,000l.); Messrs. J. C. Sons, builders, Wolverhampton.

Yoker (Renfrewshire).—Church and rooms, Harvey-street, for the Kirk Session the Yoker Parish Church.



Residence, Dunedin, New Zealand.

Mr. Basil B. Hooper, A.R.I.B.A., Architect.

This residence is on a site only 35 ft. frontage, which, of course, materially influenced the plan. The walls are in hollow brick, rough cast, and the roof is covered with green American slates.

THE MISUSE OF STONE.

It is wrong to condemn a stone which has been used in a particular case without further inquiry into the circumstances of its use. In the case of building stones of untested reputation, it is a mistake to assume that one stone is as good as another for all uses, and nothing has done more to injure the reputation of certain kinds of stone than the indiscriminate way in which they have been employed. In the selection of building stone too much importance is often laid upon such considerations as fashion, price, convenience, or cheapness, to the neglect of the particular conditions to which stone is to be used and its suitability for the purpose in view.

In this respect specifications often leave much to be desired in clearness and precision of terms employed. For example, Portland stone may be specified without distinction as to bed, although, as is well known, the bed and basebed have very different qualities, the former being more durable for work in large cities than the latter, and, in the absence of restrictions, the user may for various reasons prefer to use locally Bath stone, also, without defining quarry and even the bed from which it is taken is equally objectionable. The liability of stone is so great that general statements often mean very little, and loose specifications may be taken to be a fertile source of the misuse to which stone is sometimes put.

The use of various kinds of marble for ornamental work in cities and manufacturing districts is another example of the need of discrimination, not only as regards the marble, but also as to the locality in which it is used. Experience is quite adverse to the indiscriminate use of this material. Marble was very fashionable in New York in the early half of last century, but few have

proved capable of resisting atmospheric action for any length of time. Some of the monuments in that city, constructed of Vermont marble, are now covered with moss and lichen. In London, notwithstanding some sad experiences, such, for example, as the front of the Tivoli Music Hall in the Strand, marble façades are still erected, and some excellent examples from Greek and Italian quarries have lately been built, while in Liverpool the experiment has been also tried, the results of which time will show. In some Continental cities, where the air is dry and clean, marble structures are more durable, and striking effects are obtained by its use when properly selected. Of this there are many examples, of which mention may be made of the beautiful white marble from Ekeberg, in Narke, used in Stockholm. It seems to be clearly established that only perfectly homogeneous marbles have any chance of withstanding the action of town atmospheres, and these must be of a compact, non-absorptive character. The pure white kinds, however, are generally more granular and softer than the blue and grey varieties.

The presence of other minerals than pure calcite or dolomite has generally proved disadvantageous. Tremolite marble has been tried in New York with bad results, the tremolite veins weathering out and disfiguring the stone by ugly fissures. Seams of talc have behaved similarly in the marble statues of Lincoln in front of the City Hall, Washington. Breccia marbles and coloured varieties, such as Verde Antico, are liable to unequal weathering, and have not proved satisfactory for external use in an impure atmosphere.

A frequent cause of failure in building stone is the selection of too soft a material. Ease of dressing and working are too often the main inducements in such cases. Examples are innumerable. An instructive case is the failure of the soft Darley sandstone in various public buildings in Melbourne. For this

reason this stone was rejected in favour of the harder and more compact white Stawell sandstone for the new Houses of Parliament in that city.

Bad Results Due to Careless Quarrying.

However carefully a particular kind of stone may be selected, the material supplied is not always in accordance with requirements. It was stated before the Committee appointed to inquire into the cause of the decay of the stone used for the Houses of Parliament that the stone supplied was quarried indiscriminately from all the beds in the quarry face. Instead of following the best beds horizontally, the whole of the quarry was worked from top to bottom, and, although some softer beds were stated to have been rejected, there were noticeable differences in the nature of the stone delivered, which was determined rather by the size of the blocks than by their quality. The stone, moreover, was used without seasoning, and, even in the winter, was placed in position within a fortnight after being quarried.

Careless quarrying can also affect the soundness of the stone, and the mischief thus caused may easily escape notice. The "ring" of a stone can be rendered dull by the use of explosives, showing that incipient flaws have been developed. No stone with obvious flaws or blemishes should be used in construction, but unfortunately these are sometimes concealed. Thus we have examples of Belgian marble in which clay veins have been raked out and filled with stopping. The failure of such stone, which is sure to take place sooner or later, is a condemnation not of the stone, but of the way in which it has been misused. In South African buildings there has been much carelessness in respect of the use of unsound stone, resulting in bad fronts, cracked sills and lintels, and gaping fissures, arising from the want of any supervision over the despatch from the quarry.

* Senft. "Die Tonsubstanzen," pp. 21, 22

rendered conspicuous by the action of

the case of certain marbles, which are highly metamorphosed that all bedding planes are obliterated, it is possible that harm may be done by setting on edge, where mica foliation is present such a is likely to prove disastrous, as was the with some of the older beds of Pentelicon from which the ancient Greeks cut obliquely to the mica layers, with a loss of strength, while columns cut the micaceous Bunter sandstone of the Forest without regard to this have failed conspicuously from this. Even crystalline rocks, such as with pronounced mica foliation, have badly in New York when set on edge. On the other hand, Merrill has examined buildings in which Cockeysville marble set on edge without evil results to its extreme uniformity in texture in direction.*

the weight has to be carried the of oblique lamination produces glide which are especially to be avoided in covered structures not exposed to the of flaking by frost.

matter is further complicated when current bedding is present. It is then impossible to avoid the existence of planes. For example, in the New Red one of Scotland it is not uncommon to rent bedding at angles as high as forty true bedding; but the bad effect in cases may be almost negligible in a well-bedded rock, as may be seen in Nuremberg. Much current bedded material has been. Similarly, a pronounced current bed appears on weathering in some of the white sandstones used in Melbourne—the Stowell stone and Dunkeld stone. In any serious ill-effects; but the Table in sandstone, of Silurian age, used locally in Cape Town, splits badly in directions owing to this cause.

ough, as a general principle, all should be set with the natural bed peculiar to the pressure—that is, in most with the bedding planes in a horizontal—there are occasions when these should be vertical. Thus, in overhanging under- surfaces, or in projecting string courses, bedding planes should be vertical and run front to back, i.e., at right angles to the building, in order to avoid the risk of flaking. The same applies to copings and positions in which stones are exposed upper and under surfaces and carry the weight. Gothic tracery, also, is any more durable if face-bedded, because the planes are in so many directions that this is the only way to prevent the planes of bedding from crossing the points and causing them in time to split off. In arches the bedding planes should be at right angles to the direction of thrust. The practice of edge-bedding in order to show the pattern sometimes adopted on the bedding-planes, as in the some Connecticut brown stones, is not recommended, and has generally led to deterioration owing to flaking. The objectionable practice is to dress with a hollow bed in order to secure pointing. The result is that the weight is carried solely on the edges, instead of distributed over the whole bed, and is then liable to take place. Similar cases have been followed in the case of granite, with the result that even granite have cracked under the load upon them. The case of Holborn Viaduct have been as a striking example of this mistake.

Effects Due to Embedded Metal.

Fracture of stone by included iron has frequently been described. This effect has recently studied in detail by M. G. who has examined many cases in which stone posts have been broken by fixing iron rails, cramps, dowels, etc. He has attributed these fractures to the following

3. Fracture by frost, owing to infiltration of water into badly sealed iron fixing.
4. Fracture, owing to badly-worked holes to receive metal fixings.
5. Fracture by expansion, due to rusting of included iron.

To avoid these results, he recommends that only pure lead should be used for sealing. Portland cement and sulphur should be avoided. Iron is bad for cramps and dowels, owing to the effects of oxidation, which not only causes staining, but also results in expansion and splitting of the stone. Galvanised-iron is better than ordinary iron, and bronze is better than either. For fixing marble slabs copper cramps should always be used.

Errors Due to Position.

Certain parts of a building are especially susceptible to atmospheric disintegration. Staining is often the result of water running down a wall owing to bad construction. Atmospheric action often begins in masonry beneath cornices and projections. For this reason all cornices, sills, and projections should be "weathered," that is, inclined so that water runs off, and the softer the stone the steeper should be the inclination, reaching in extreme cases to one in ten. Otherwise the top should be covered with sheet lead.

The undersurface of projections should be "throated" to prevent water from running back to the wall. Inattention to these details has often led to speedy disfigurement of a façade.

Special conditions are also worthy of notice, such as may be observed in the doorway of the exit from the Central Low Level Station, Hope-street, Glasgow, which is in the path of the acid-laden air from the railway, and has suffered marked disintegration. In damp situations walls should not be built with porous stone. Hollow walls are an advantage in such cases. Neglect of this precaution has been a fruitful source of disintegration of buildings in Egypt, in a climate particularly favourable to durability. Mr. A. Lucas has called attention to the serious decay in buildings near the ground level in Cairo, owing to absorption of saline ground water, which on evaporation from the surface of the stone leaves a deposit of salts, not only as an efflorescence on the surface, but also within the pores of the stone, and leads to flaking owing to the expansive force of crystallisation.* An efficient dampcourse is a remedy in such cases, but in engineering work, such as bridges exposed to a fluctuating

* "Disintegration of Building Stone in Egypt," Cairo, 1906.



Window in St. Ann's Church, Manchester.

This window was designed by Mr. Arthur A. Orr and executed by Mr. Rueben Bennett, Manchester. Our illustration is from a drawing exhibited at the Royal Academy this year.

land Geol. Surv., II., p. 178 (1898).
Annales des Travaux Publics de
December, 1910.

water level, the use of non-porous stone is essential.

In some climates damp situations may cause decay even when salts are absent, owing to the influence of frost. Thus in hydraulic works the neighbourhood of the waterline is generally the first part to show decay in countries where the temperature falls below freezing-point.

Damp walls may produce still more insidious effects. Thus marble slabs have been ruined by fixing them against newly-built walls. The surface becomes pitted with small holes, especially when the stone is face-bedded. It is advisable never to fix marble slabs solidly to the wall, but to leave an intervening air space. Even a backing of green wood has led to staining from absorption of sap by the marble.

Instances could be multiplied indefinitely, but the above examples are enough to show how the wearing properties of stone may be injured by misuse.

ARCHITECTURE AND SCULPTURE AT SOUTH KENSINGTON

SIR CECIL SMITH'S report, issued by the Board of Education, contains some interesting references to recent acquisitions for the Victoria and Albert Museum. The increased valuation placed on all works of art in recent years makes more than ever welcome such bequests as those by George Salting and Captain Murray. Special thanks are due to Mr. Fitzhenry for contributing to the permanent features of the "Department of Architecture and Sculpture," as it is now called. In 1905 he presented a handsome wooden staircase from a house at Morlaix, in Brittany; it is French work of about 1500. This fine stair, which must have stood in the corner of a courtyard, is spiral in form, and has galleries and landings for three floors. The principal feature is a tall column, elaborately carved with figures, shields, leafwork, and imbricated ornament, and surmounted by a statuette of St. John the Baptist; the balustrades springing from this column have linen-fold panelling. This interesting type of staircase is apparently peculiar to the town of Morlaix. Mr. Fitzhenry presented also a wall-head of orange-coloured marble, dating from the first half of the XVth century, bearing on one of the sides the arms of the Concoreggio family of Verona, and a XVth-century Venetian sarcophagus of carved limestone, said to have come from the church of St. Giobbe, at Venice. Three XVIIIth-century marble fireplaces were presented by Mr. J. A. Dolmage. In 1910 a series of doorways and other architectural details, mainly in wood, were presented by H.M. Office of Works; these date from the XVIIIth century—mainly from the last quarter—and were obtained from houses demolished in the early part of the year in Great George street and Delahay street. The gift is particularly acceptable, as doorways of this class are perhaps more continually measured and studied by architectural students than any other exhibits in the department. Mr. J. H. Fitzhenry presented an interesting relief of the Virgin and Child in painted stucco, the work of a Florentine artist of the first half of the XVth century. Other work by cognate sculptors, sometimes gathered together under the name of the "Master of the Pellegrini Chapel," is already exhibited in the Museum; but this relief (of which there is a replica in the Kaiser-Friedrich Museum at Berlin) is an example of a particular group hitherto unrepresented. Mr. Fitzhenry has further presented a collection of architectural details, mainly classical Roman work, in stone and terra-cotta, but including Romanesque capitals, etc. Another gift was that of three Japanese architectural models—the Beltry of the Todaiji at Nara, the Tah-tô (great pagoda) at Daidenbo-in, and the Hi-un-kaku (pavilion) at the Nishi Hongwanji, Kyoto, presented by Mr. H. Yamawaki on behalf of the Imperial Commissioners of the Japan-British Exhibition.

The Salting Bequest.

The magnificent bequest made by the late Mr. George Salting enriched the department in several directions; by far the most important, both absolutely and in relation to the collections previously possessed by the Museum, being that of Italian bronzes. The

bronzes in the Salting Bequest (altogether about 120) do not, indeed, put the Victoria and Albert Museum on a level numerically with some of the great collections on the Continent; but many of the new acquisitions are of the finest possible quality, and almost all are of unimpeachable authenticity. Perhaps the first place in historic importance and artistic merit would be taken by the bronzes of the Paduan school, which are grouped round the name of Andrea Briosco (1470-1532) better known as Riccio. The Paduan workshops produced a very great number of bronzes, especially decorative objects, and the name of Riccio must often be taken rather as indicating a place and period than a single artistic personality. But the two magnificent sphinxes, replicas of those at the lower angles of the great Paschal candlestick in St. Antonio at Padua, may be ascribed with confidence to the master's own hand. Another school of bronze-workers well represented in the bequest is the Florentine. The influence of Donatello himself may be traced in the beautiful little bell, decorated in low relief with a band of dancing children and surmounted by a boy beating a tambourine for a handle, though it must have been made after the master's death in 1466. Bertoldo di Giovanni, the pupil of Donatello and master of Michelangelo, who died in 1491, was very probably the maker of the large Hercules, with which may be compared another smaller figure of the same deity slaying the Nemean lion, and perhaps the curious circular plaque with an allegorical relief of architecture. The group of Adonis and his dog has been assigned to the school of Andrea del Verrocchio; the Moses (2625) is an almost contemporary copy of the colossal marble statue by Michelangelo which forms part of the unfinished tomb of Pope Julius II. in St. Pietro in Vincoli at Rome. The most important works by Giovanni da Bologna (1529-1608), who may be reckoned among Florentine artists, although born at Douai in French Flanders, are the group of Nessus and Deianira, the fountain-figure of Venus, and the large Rape of a Sabine woman, the latter one of the finest bronzes in the collection, and one of the first which Mr. Salting acquired. The Venetian and other North Italian schools are mainly shown in small figures and decorative objects, such as a singularly graceful candlestick ascribed to Leon. Leoni (1509-1580), an inkstand with a kneeling warrior, and a small six-sided fountain.

The medals and plaquettes in the Salting Bequest have been grouped with the bronzes in the Department of Architecture and Sculpture for purposes of arrangement. The medals form a carefully-selected series of about 250, generally in fine condition, and are a most valuable addition to the specimens already in the Museum. Among the Italian medallists Antonio Pisano of Verona, better known as Pisanello, is represented by six medals:—Leonello d'Este, Lodovico Gonzaga, Sigismondo Pandolfo Malatesta, Malatesta Novello, John Paleologus, and Niccolò Piccinino. By Matteo de' Pasti, also of Verona, are four medals:—Leon Battista Alberti, Sigismondo Pandolfo Malatesta, and two of Isotta Atti, his wife. Six medals bear the signature of Sperandio, the great medallist of Mantua:—Andrea Barbazza, Giovanni Bentivoglio II. of Bologna, Lodovico Brugnoli, Lodovico Carbone, Federico Montefeltro, Duke of Urbino, and Francesco Sforza. The portrait of the famous Sultan and conqueror of Constantinople, Mahomet II., is given on three medals, by Bertoldo di Giovanni, Costanzo, and Gentile Bellini. The medal by the first-named is one of the finest specimens in the collection, and is in a wonderful state of preservation.

The bequest made by the late Capt. H. B. Murray includes sixty-four objects falling within the scope of the Department, mainly small carvings in wood and ivory. One acquisition of particular interest is a large XVth-century South German figure of Christ riding on the Ass, a "Palmeisel" used in churches in the Palm Sunday procession. The bequest also contains two fine French XVIIIth-century pillars in marble and gilt bronze, a number of netsuke, and six Chinese cups carved in rhinoceros horn.

Purchases for the Museum.

Beyond question the most important of the acquisitions by purchase during the year has

been that of two life-sized recumbent figures of white marble by a Spanish sculptor of the second half of the XVth century, the figures, which represent Don Rod. Cardenas, a knight of the Order of St. James who lived in the reign of King Henry of Castile (1454-72), and his wife, T. Chacon, were formerly in the church of Pedro at Ocaña, a little town ten miles to the east of Aranjuez. The knight is represented in full armour, wearing the collar and badge of the order of Santiago and holding his sword; Dona Teresa appears in a widow's dress and holds a rosary. The second in interest to these magnificent figures is the marble bust of Charles I., signed by Hubert le Sueur (1650), and dated 1651; two years earlier the same artist's famous equestrian statue of the King at Charing Cross.

THE MANOR AND THE BUILDING OF MARYLEBONE

LORD HOWARD DE WALDEN is about to set on foot a scheme for dealing with his property in Marylebone, so as to give his tenants permanent holding instead of the casual London leases. Formerly known as the land Estate, the property, which includes the ancient Tyburn and 1410 Manors, is divided into two portions: the Crown lands of Regent's Park. The portion, to the north, lies within the lines of Park and Wellington roads, Clarendon and Henry streets, and Aecacia and Torr roads.* It was built over in the early part of last century; the Tyburn flowed in its south-eastern corner. In the plan of their newly-rebuilt High-street and the pile of North Gate flats, the inhabitants term the good and significant name of land Town. The larger portion, 200 acres, lies within the confines of the streets, Marylebone-lane, Blandford Northumberland streets, Cleveland, and Wells streets, Adam and Eve-ou Marylebone-road.* A plan of 1708, of John White the younger, shows this as consisting of the little village of church, taverns, and bowling-greens north-western corner, and the wide open known as Marybone Fields plots several measured parcels—the resurgitantes, swordsmen, and cudgel-John Price's designed plan of 1719 is a "Design of Buildings already begun, built in the parish of St. Mary la Belonging to the Right Honble. Edw. Harley and the Right Honble. Lady H. Cavendish Holles Harley, A.D. 1717 beginning was made with Oxford Cavendish, Square in 1717. Morden map shows that by 1732 had been built Cavendish square and the streets Oxford-street, Marylebone-lane, New dish-street, and Great Portland-street nothing directly north of Cavendish on the north side of which the I. Chandos had intended to build, after Price's designs, a lordly mansion private road to Canons. In 1739 their teste Maitland, 577 houses in the parish, and thirty-five persons with coaches. James Gibbs built St. in Vere-street, the (old) parish in High street, and Oxford Market down in 1880 for Oxford Mansion brothers Adam built Portland-place followed out Price's plans to the north west of Cavendish-square. Nas alterations for his All Souls' Church ham-places, Regent-street, and Oxford see our article, with plans and illustration of January 2, 1904, "Regent-street and Improvements."

In King Edgar's day the Abbess of held Tyburn of the King; the descent traced to Thomas Hobson, who exerted to Henry VIII. in 1544, and to Forset, who bought it of James I. for 3s. 4d., Marylebone (Regent's) Park reserved for the chase by the Arabella Forset brought it in marriage Thomas Austain, their son sold it for in 1708 to John Holles, Duke of Ne-

* These limits, Oxford-street, Marylebone and Park-road excepted, are approximate boundary lines are too tortuous to be described here.

& Son, additions to St. John's Hospital, Morden Hill; Messrs. S. J. Gerrard & Sons, six houses, Shell-road; Messrs. J. W. Heath & Sons, twenty-eight houses, Arthurton-street and Chudleigh-road; Mr. J. Nicholls, six houses, Manwood-road; Mr. W. D. Monk, store house at Lewisham Infirmary, High-street.

Maldens and Coombe.—At the last meeting of the District Council, the Surveyor submitted plans for widening the highway in Coombe-road, from the railway station to the parish church, at an estimated cost of 680*l.*; also for widening the highway in Kingston-road, from the Kingston boundary to the Prince of Wales public-house, at an approximate cost of 1,920*l.* The plans were approved.

St. Pancras.—Mains are to be extended in three streets at an estimated cost of 55*l.* The roadway on the south side of Tavistock-square is to be relaid with cleaned wood-blocks. Plans have been forwarded by Mr. E. L. Lutyens, on behalf of the Theosophical Society, for the erection of a large building on a site between Tavistock-square and Burton-street. The estimated cost of the building is between 30,000*l.* and 40,000*l.*

Southwark.—The Borough Council have decided to request the London County Council to hand over the 201*l.* unspent balance of the amount voted by the Council for laying out of the St. George's-yard, for the purpose of tarpaving the footpaths and other works. The following plans have been passed:—Messrs. Briant & Sons, 200, Kennington Park-road, S.E., formation and laying out of a street to lead from Albert-street to Delverton-road, also for the erection of buildings to abut thereon; Mr. H. Macintosh, Birkbeck Barristers' chambers, High Holborn, extensions to South London Central Mission, New Kent-road; Mr. A. Sykes, architect, 45, Finsbury-pavement, E.C., warehouse on site of Nos. 5-8, Bennett-street, and 10-14, Stamford-street. A plan has been lodged by Mr. H. Jackson, 10, South-street, Finsbury-pavement, E.C., for the formation and laying out of a street east side of Queen's-row, also for the erection of thirteen houses.

Statute.—The Rural District Council has passed plans for Mr. T. W. Simpson, for three houses in Common-road, Laleham.

Tottenham.—Application is to be made to the Local Government Board for sanction to a loan of 700*l.*, the amount required for purchasing the land and the carrying out of the necessary works for an improvement at the corner of St. Ann's-road and Seven Sisters-road. The following plans have been passed:—Mr. G. E. T. Lawrence, school and buildings, Culvert-road, South Grove, etc., at Kings, school and buildings, Risley-avenue, London County Council Estate; Messrs. Norfolk & Prior, conversion of rink, High-road, into picture palace; Messrs. E. Lawrence & Son, additions to Woodberry Down Chapel, Artillery-road. A plan has been lodged by Mr. C. Duckworth, for a cinematograph theatre at the east corner of Caversham-road and West Green-road.

Tring.—The plan submitted by Mr. Mead has been approved for the erection of additions to the Tring Flour Mills.

Wandsworth.—The Borough Council has accepted the tender of Messrs. E. Parry & Co., at 1,642*l.*, for paving Loxley-road, Springfield, with Victoria indurated stone, also the tender of Messrs. J. Mowlem & Co., Ltd., at 1,590*l.*, for paving Guildersfield-road, Streatham, with Aberdeen adamant. Tenders are to be invited for paving Graedale-road, Streatham, as a new street, also for repairs to the carriage-way of a part of Crescent-lane, Clapham.

South. The following plans have been passed:—Mr. F. L. Poole, additions to the Columbia Phonograph Company's works, Bendon Valley, Springfield; also 131 houses, Granville-road, Wandsworth-road, Hamblewick & Co., motor garage, Heathview-gardens; Messrs. Barlow & Roberts, three houses, Christchurch-road, Streatham; Messrs. F. & G. Foster, addition to workhouse, Swaffield-road, Springfield; Mr. C. F. Newman, warehouse, near 19, Tooting High-street; Messrs. H. Somerford & Son, alterations and additions to factory and warehouse, Windsor Works, Venn-street, Clapham, North; Messrs. W. Adkins & Son, additions to Mayfield, Bessborough-road, Rochampton; Mr. E. H. Henry, additions to Nos. 30 to 35a, Old Town, Clapham, North; Messrs. Roberson & Barrie, twenty-five houses, Crowborough-road, Streatham; Mr. C. Hallam, Primitive Methodist church and schools, Lynwood-road, Balham; Messrs. J. Marsland & Son, additions to St. Thomas's Roman Catholic Church, West-hill, Southfield; Mr. A. Budd, laundry near 99, Tooting High-street.

Watford.—Plans have been passed for Mr. Lewis Evans for additions to Lodge "Russells," also for Mr. Albert Timberlake, for two houses, Nash Mills. The Surveyor, reporting upon this plan, stated that six pairs of houses

are proposed to be erected similar to the two already sanctioned.

Wimbledon.—The Council have accepted the tender of Messrs. E. & E. Iles for making up the following streets at the prices mentioned:—The Crescent (sect. 1), 456*l.*; the Crescent (sect. 2), 417*l.*; Crescent-gardens, 220*l.*; Gladstone-road, Mews, 120*l.* They have also accepted the tender of Mr. S. Lane for making up Gordondale-road, at 347*l.* Lucien-road is also to be made up at an estimated cost of 365*l.* This work is to be done by direct labour.

OBITUARY.

Mr. J. J. Bannatyne, R.S.W.

The death, in Glasgow, is announced of Mr. J. J. Bannatyne, R.S.W., aged 76 years, member of the Glasgow Art Club, of the Glasgow Institute of the Fine Arts, and, since its formation more than thirty years ago, of the Royal Scottish Society of Painters in Water Colours. Mr. Bannatyne began his career as a designer for Messrs. Dalgleish, Falconer, & Co., calico printers, and frequently contributed to the Royal Academy and other art exhibitions.

Mr. R. H. Crabtree.

The death has occurred at Southport, on 15th inst., of Mr. R. H. Crabtree, representative of the Bath Stone Firms, Ltd., formerly Quarry Manager at Portland, Dorset. Mr. Crabtree was well known and esteemed in the professions, both in the North and South of England.

FOREIGN AND COLONIAL.

German Cement Industry.

To the above subject Sir F. Oppenheimer, the British Consul-General at Frankfurt-on-Main, devotes considerable attention in his annual report just received at the Foreign Office. It appears that the market for cement in Germany knows at present only two kinds—Portland cement and slag cement. Most of the cement-producing concerns are share companies, private factories being few and far between. The capital invested reaches a total of 400,000,000 marks. The possible total annual production is estimated at 450,000,000 barrels (of 170 kilos). For the cement industry generally, the year 1910 is reckoned the worst on record, not excluding the bad years 1903-4. The greatly increased facility of production has led to over-production, because the demand could not increase at an equally rapid pace, and the export, though still increasing, is becoming more and more difficult. The production has increased as follows:—

Year.	No. of Factories.	Production. Barrels.
1877	29	2,200,000
1887	45	7,050,000
1897	68	12,450,000
1901	85	19,500,000
1907	88	27,000,000
1909	112	45,000,000

*Possible production.

The price, which half-way in the nineties had amounted to about 6 marks 25 pf. per barrel, had, by 1901, sunk to 4 marks. In 1910 the price at times reached 3 marks 20 pf. to 3 marks 30 pf., in Berlin, even, to 2 marks 50 pf. to 2 marks 80 pf., though the cost of production has not, so far, fallen much below 4 marks, which was the calculated expenditure before the modern methods had come into operation. The home demand was, in 1910, affected by the building strike, and afterwards the building market did not improve as the cement industry had anticipated. The German export to South and Central America has increased during recent years; but these markets will eventually be lost, as the large North American factories push their competitors aside, and as local factories take up the supply, such as are being built in Venezuela, the Argentine Republic, and Chile, partly with the assistance of the respective Governments. In a similar way the markets in China, Java, and Japan are becoming more and more supplied by local factories. The change in the North American market has been remarkable. The consumption has there tremendously increased, so has the local production, which has risen from 150,000 barrels in 1885 to 75,000,000 barrels in 1910. The German export to North America, which in 1895 still amounted to 1,435,455 barrels, receded in 1910 to 83,003 barrels.

The import of foreign cement into Germany has been facilitated by the absence of any German customs duty. The last customs tariff had at first provided a customs duty of 50 pf. per 100 kilos., but this was abandoned at

the subsequent treaty negotiations, free entry of foreign cement into Germany secured at least till 1917, the end of the customs treaties. The demands for a tariff, when the opportunity has occurred, have been abandoned by the German industry; but they have become loud the bad result of the year 1910. It is mentioned that the German cement have formed a pan-German union, so the purpose of controlling the quality are made with samples taken at regular intervals, without the knowledge of the ing works, and any works failing to standard quality is warned the first time the second time is excluded from the The German works claim that foreign ought to be subjected to the same test entry into Germany.

Works in Austria-Hungary.

The communal council of Mostar, has decided upon the construction of water supply aqueduct at a cost of 600,000 (25,000*l.*), and also the erection of a hospital.

The city authorities of Budapest, decided to erect a water tower, with content of 200,000 cubic metres, at 150,000 (6,000*l.*), and to bore two wells and construct a siphon, and in connection with Ujlak water works. Tenders will be invited by "Dr. Johann Buzath, IV. Város 16," Budapest, up to 15 September may be seen at the office of the Water Directorate.

A syndicate, with a capital of 1,600 (about 65,000*l.*), has been formed at Prague to erect a water tower, at 150,000 (6,000*l.*), for the purpose of erecting a large school at Tremoschna, near Pilsen.

The Budapest Commission for the erection of municipal dwellings, has decided the erection this year, at a cost of 5,000,000 (about 200,000*l.*), of eight five-storied buildings to contain 850 two and three-roomed flats. Schools are also to be erected at a cost of 5,000,000 kr.

A hydropathic establishment with 100 beds is shortly to be constructed at B. According to the plans prepared by Dvorak, the cost will be 1,600,000 kr. (66,700*l.*).

A company, under the name of the Hot Imperial Hotel Company, has been formed at Carlsbad by Lord Westbury, of Alfred Schwalb, of Carlsbad, Messrs. V. Freytag, Meinong, and Portois & Vienna, for constructing and managing a hotel at Carlsbad, and for obtaining concessions for the construction of light railways. The company has a capital of 4,000,000 (about 160,000*l.*), which can be raised to 11,000,000 kr. (about 458,000*l.*).

PATENTS.

APPLICATIONS FORWARDED.

20,240 of 1910.—Arthur Ramén: Tunnel furnaces.

20,247 of 1910.—Arthur Ramén: Machine for working tunnel kilns or furnaces for bricks of ore, clay, and the like.

20,303 of 1910.—Edward Williams: Machine for mixing and applying concrete and like staves.

20,354 of 1910.—Harold Merrylyes Merrylyes & Co., Ltd.: Construction places or the like from plastic compositions.

25,901 of 1910.—George Loudon: Machinery.

26,029 of 1910.—George William Hulbert Charles Henry Hulbert: Machine for arch bricks, terra-cotta blocks, and the like.

2,332 of 1911.—Edward Charles Marks (McElroy, Shepherd, & Co.): Apparatus for mixing and applying concrete and like by spraying.

5,183 of 1911.—Santiago Dominguez: Tiles, and the like, for pavements and purposes.

8,551 of 1911.—Reinhold Stoye: Sewer frames.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied from the Office to residents in any part of the United Kingdom at the prepaid rate of 18*s.* per annum, with delivery free by post in London and its suburbs. To Canada, post-free, 21*s.* 6*d.* per annum, and to the Colonies, Australia, New Zealand, India, Ceylon, 22*s.* 6*d.* per annum.

Remittances payable to J. MORRIS, should be sent to the Publisher of "THE BUILDER," 4, Catherine-street.

*All these applications are in the form of a petition which opposition to the grant of Patent may be made.

List of Competitions, Contracts, etc.

Some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xix.; Auction Sales, xxiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

SEPTEMBER 12-25. **ALBANY.**—**COURT OF JUSTICE.**—International competition is instituted by the Ministry of the Interior, for the erection of buildings, to cost 180,000 francs. The official programme may be seen at the Library of the Ministry.

SEPTEMBER 4. **Eastington R.D.C.**—100 model for Mutton Colliery, Durham. 25 per cent net cost to successful architect.

SEPTEMBER 7. **Barnsley.**—**Extension of the Barnsley C.C. invite drawings for extension of Public Baths.** Three premiums are offered—50l., 30l., 20l. See advertisement in issue of August 11 for further particulars from the Clerk to the C.C.

SEPTEMBER 7. **Evesham U.D.C.**—Designs for out site and erecting thereon thirty flats. Particulars from the Clerk to the U.D.C.

SEPTEMBER 12. **Gosley.**—Plans are invited for a school to accommodate about 200 children. Particulars from the Education Officers, Gosley, near Evesham.

SEPTEMBER 14. **Bristol.**—**ALTERATIONS IN THE HOSPITAL.**—Particulars from Mr. F. A. B. 44, Corn-street, Bristol.

SEPTEMBER 28. **Salford.**—**Extension of office buildings on workhouse site at Eccles New Farm.** Premiums of 20l. and 10l. Particulars from the Clerk of Guardians, Salford. Limited to plans practising in Salford and district only.

SEPTEMBER 30. **Holland.**—**STAINED GLASS WINDOWS.**—Designs are invited for a stained glass window to be erected in the University at Exeter. See advertisement in issue of June 9 for further particulars.

SEPTEMBER 31. **Marylebone.**—**NEW MUNICIPAL WORKS.**—Premiums of 100l., 50l., 20l. The programme may be seen at the Library of the Corporation in issue of July 14 for further particulars.

SEPTEMBER 1. **City of St. Petersburg.**—**ALTERATIONS TO ALEXANDER II.**—Particulars in our issue of August 13, 1910.

SEPTEMBER 30. **Cardiff.**—**TECHNICAL INSTITUTE.**—Cardiff Education Committee invite tenders and estimates for a technical institute, to be erected in issue of August 18 for further particulars. Architect to carry out. Premiums of 125l., 75l., and 50l. to competitors. Mr. J. S. Gibson, assessor.

SEPTEMBER 30. **Hastings.**—**BASES, SURGEON GENERAL'S OFFICE.**—Particulars from the Committee of the East Hospital and King Edward VII. Hospital Funds invite designs for new hospital buildings. Premiums of 100l., 50l., and 25l. to competitors. Mr. E. T. Hall, assessor.

SEPTEMBER 31. **Gloucester.**—**DESIGN FOR A BRIDGE.**—Designs are invited (Alexander Thompkins) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

SEPTEMBER 29, 1912. **Montevideo.**—**GOVERNMENT BUILDINGS.**—Plans and specifications for the City of Montevideo. Premiums of 1,000l., 600l., and 400l. Conditions may be seen at the Board of the Capital City. The Government of the Republic of Uruguay invite competitive tenders for the laying out of this Federal capital. See advertisement in issue of September 1 for further particulars.

SEPTEMBER 1, 1912. **Dusseldorf.**—**A plan for the City of Dusseldorf.** Premiums of 10l. to 375l. Conditions on application to the Burgomaster, Dusseldorf.

SEPTEMBER 7. **Nottingham.**—**PARTER CHURCH.**—Particulars from Messrs. Rorke & Jackson, Limited to Nottingham architects. Particulars from Messrs. Rorke & Jackson, Limited to Nottingham architects.

SEPTEMBER 7. **Nottingham.**—**Particulars from Messrs. Rorke & Jackson, Limited to Nottingham architects.**

SEPTEMBER 7. **Nottingham.**—**Particulars from Messrs. Rorke & Jackson, Limited to Nottingham architects.**

the workhouse. Messrs. Chapman & Snape, architects, Newcastle.

SEPTEMBER 23. **Pyle.**—**COTTAGES.**—Erection of four cottages at North Cornely. Plans and specifications from Mr. Anson T. James, architect and surveyor, Risley House, Pyle, near Bridgend.

SEPTEMBER 25. **Belfast.**—**WAREHOUSE.**—Erection and completion of a warehouse. Drawings and specifications with Messrs. Blackwood & Jurg, M.M.R.I.A.I., architects, 41, Donegall-place, Belfast, and quantities on deposit of 2l. 2s. from Messrs. McCarthy and Brookes, surveyors, Scottish Provident Buildings, Belfast.

SEPTEMBER 25. **Poole.**—**WORKS.**—For various works at buildings for the Borough Council. Particulars and forms of tender from Mr. Samuel J. Newman, F.R.I.B.A., Borough Surveyor, Municipal Office, Market-street, Poole.

SEPTEMBER 25. **Ripponden.**—**SHOP-FRONT, ETC.**—Alteration to shop front. Apply to Manager, Ripponden Co-operative Society, Ltd., Oldham-road, Ripponden, Yorks.

SEPTEMBER 25. **Seabrook.**—**ALTERATIONS.**—For slight alterations to the Court House at the police station. Plan and specification from Mr. Frederick W. Ruck, County Architect, 86, Week-street, Maidstone.

SEPTEMBER 25. **Swansea.**—**ADDITIONS, ETC.**—Alterations and additions to the boys' school at Clydach. Plans and specification seen at the Clydach Police Station, and with Mr. T. Mansel Franklin, Clerk to the County Council, Glamorgan County Council Offices, Westgate-street, Cardiff.

SEPTEMBER 25. **Wareham.**—**WALLS.**—Erection of boundary walls, etc. Plans and specification seen, and quantities from Mr. W. W. Fookes, surveyor, Wareham.

SEPTEMBER 28. **Aylesbury.**—**DECORATION, ETC.**—For decorating, sanitary, and other work to "The Grove, Grendon Underwood. Specification and plans with Mr. Fred Taylor, A.R.I.B.A., 7, Bourton street, Aylesbury.

SEPTEMBER 26. **Newport, Mon.**—**LATHINGS, ETC.**—Construction of lathings and play-shed at schools. Specification and quantities from the Borough Architect, Mr. C. F. Ward, A.R.I.B.A., Town Hall, Newport. Deposit of 1l.

SEPTEMBER 26. **Norwich.**—**BUILDINGS.**—Erection of new office buildings in Duke-street. Quantities and form of tender from Mr. F. M. Long, A.M.Inst.C.E., City Electrical Engineer Corporation, Electricity Works, Duke-street, Norwich. Deposit of 2l. 2s.

SEPTEMBER 28. **Risca.**—**ADDITIONS.**—Alterations and additions to houses. Plans and specification with Messrs. T. E. Richards & Kaye, architects, Market-square-chambers, Pontypool.

SEPTEMBER 30. **Walsley.**—**HALL.**—Erection of lecture-hall at the Tirphill Liberal Club. Plans and specification at the club. Mr. T. Beaver, Secretary.

SEPTEMBER 27. **Ash-next-Sandwich.**—**HALL.**—Erection of new parish hall. Plans and specification, with quantities, on deposit of 2l. 2s. from Messrs. Jennings & Gray, architects, 4, St. Margaret's street, Canterbury.

SEPTEMBER 27. **Farnham.**—**ADDITIONS.**—Alterations and additions to maternity ward, Farnham Infirmary. Plans and specifications with the architects, Messrs. Friend & Lloyd, Aldershot.

SEPTEMBER 27. **Goole.**—**CHIMNEY.**—For raising the Pollington Waterworks chimney 30 ft. Specification and full particulars from the Gas and Water Engineer.

SEPTEMBER 27. **Gosport.**—**MENAGE.**—Construction of a menage at Gosport. Plan and specification seen, and quantities from the architects, Messrs. Rake & Cogswell, Prudential-buildings, Portsmouth.

SEPTEMBER 27. **London.**—**DINING HALL.**—Extension of the dining hall at workhouse, at No. 5, Woodfield-road, Harrow-road. Quantities and form of tender from the architect, Mr. E. Howley Rip, Mowbray House, 14, Norfolk-street, Strand, W.C. on deposit of 3l.

SEPTEMBER 28. **Kendal.**—**ALTERATIONS, ETC.**—For making out further sick wards, alterations, and renewals and repairs at the workhouse. Plans and specifications seen and quantities from Mr. Stephen Shaw, F.R.I.B.A., architect, Kendal.

SEPTEMBER 29. **Brough.**—**ROOM.**—Erection of a corrugated-iron cookery-room at the council school. Plan and specification from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 2l. 2s.

SEPTEMBER 29. **Walsley.**—**OFFICE.**—Erection of a new sorting office. Drawings, specification, conditions, and form of contract with the Postmaster, Walsley. Quantities and forms of tender on deposit of 1l. 1s. from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

SEPTEMBER 30. **Hill.**—**PAVILIONS, ETC.**—Erection of shelters and pavilions at Pickering Park.

Particulars from Mr. A. B. White, M.Inst.C.E., City Engineer, Town Hall, Hull.

SEPTEMBER 30. **Pant-y-wain.**—**COTTAGES, ETC.**—Alterations to existing cottages and erection of three new cottages. Plans and specification with Mr. T. Edmund Rees, architect, Merthyr Tydfil.

SEPTEMBER 30. **Preston.**—**ADDITIONS.**—Alterations and additions to buildings in bye-street. Quantities from Mr. J. P. Fraser, architect, 14, Elliot-street, Liverpool.

SEPTEMBER 30. **Preedyrhiw.**—**ALTERATIONS.**—For alterations to No. 6, Castle Houses. Plans and specification with Mr. T. Edmund Rees, architect, Merthyr Tydfil.

OCTOBER 2. **Londonderry.**—**HOUSE, ETC.**—For erection of a professor's house and gate lodge and alterations to the college. Plans and specifications with Messrs. Robinson & Davidson, C.E., A.R.I.B.A., Richmond-street, Londonderry.

OCTOBER 2. **Poole.**—**STRAITS.**—Erecting wooden steps at Sandbanks. Plans, specifications, etc., from Mr. H. Kendall, M.B.A., architect and surveyor, Poole, Hants.

OCTOBER 3. **Newry.**—**STONE.**—The Great Northern Railway Company (Ireland) invite tenders for the building of a goods store at their Edward-street Station, Newry. Drawing and specification at the Chief Engineer's Office, Amiens-street Terminus, Dublin, and District Engineer's Office, Belfast. Quantities and forms of tender on deposit of 2l. 2s. from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin.

OCTOBER 4. **Edinburgh.**—**FLOORS, ETC.**—Erection of the reinforced concrete floor, roofs, beams, columns, staircases, etc., in connexion with the Royal Scottish Museum new administration offices. Conditions of contract at H.M. Office of Works, 3, Parliament-square, Edinburgh, or at H.M. Office of Works, G.P.O., Glasgow. Drawings, with specification and form of tender, from H.M. Office of Works, 3, Parliament-square, Edinburgh, on deposit of 1l. Tenders to the Secretary, H.M. Office of Works, Storey's-gate, London, S.W.

OCTOBER 4. **Eltham.**—**CONVENIENCE, ETC.**—Erection of a waiting-room and sanitary convenience at the tramway terminus. Drawing, specification, and form of tender on deposit of 1l. 1s. from Mr. J. Rush Dixon, M.Inst.C.E., Borough Engineer, Town Hall, Woolwich.

OCTOBER 6. **Edinburgh.**—**SCHOOL.**—Erection of a school. Plans seen and specifications, with quantities, on deposit of 1l., from the Education Architect, County Hall, Wakefield.

OCTOBER 6. **London.**—**EXTENSION OF LAND REGISTRY.**—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of the Land Registry. See advertisement in this issue for further particulars.

* OCTOBER 6. **Tottenham.**—**DRILL-HALL.**—The Tottenham Territorial Forces Association invite tenders for drill-hall, Tottenham, Hants. See advertisement in this issue for further particulars.

OCTOBER 7. **Bredbury.**—**CENTRE.**—Erection of a special subjects centre at Bredbury-Flane. Plans and specifications and quantities from the architects, Messrs. Sankey & Cubbon, F.R.I.B.A., 4, Chapel-walks, Manchester, on deposit of 1l. 1s.

OCTOBER 7. **Halifax.**—**SPLITTERS.**—Erection of railway shelters. Particulars from Borough Engineer, Town Hall, Halifax.

OCTOBER 7. **Ledham.**—**FARM BUILDINGS.**—Erection and extension of farm buildings on the Ledham Estate. Plans seen, and specifications and quantities, on deposit of 1l., from the C.C. Land Agent, County Estate Office, 49, Northgate-street, Chester.

OCTOBER 9. **Dowlais.**—**COTTAGES.**—Erection of five concrete cottages at Gellifaelog. Plan and specification from the Deputy Surveyor, Town Hall, Merthyr Tydfil. Deposit of 1l. 1s.

OCTOBER 10. **Crumlin, Mon.**—**HALL, ETC.**—The Great Western Railway invite tenders for the construction of a new booking hall, footbridge, etc., at Crumlin station. Plans and specifications seen, and quantities from the Engineer at Newport station.

OCTOBER 10. **Handsworth, etc.**—**STABLES.**—The Great Western Railway invite tenders for the erection of stables at Handsworth, Wednesbury, and Lonsley Green. Plans and specification seen, and quantities from the Engineer at Wolverhampton station.

OCTOBER 11. **Gaister.**—**SCHOOL.**—Erection of new school. Plans seen and quantities on deposit of 1l. 1s. from Messrs. Olley & Haward, architects, 8, Queen-street, Great Yarmouth.

OCTOBER 16. **Stockport.**—**LIBRARY.**—Erection of a new central library. Specifications and quantities with the architect, Messrs. Broadbent & Goss, 19 Silverwell-street, Bolton, or Messrs. Hewitt & Son, quantity surveyors, 38, Brazen-nose-street, Manchester. Deposit of 2l. 2s.

Contracts.

BUILDING.

Date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 23. **Morpeth.**—**ADDITIONS.**—Alterations and additions to premises. Drawings and specifications with the architect, Mr. C. Franklin, 7, Newgate-street, Morpeth. Deposit of 1l.

SEPTEMBER 23. **Newcastle-under-Lyme.**—**ALTERATIONS.**—Alterations to w.c.'s and sewers at

Specification 98 Belfast. ELECTRIC INSTALLATION.—Installation of conductors and equipment at the new abattoir. Plans and conditions seen, and specification from the City Surveyor. Deposit of 11. 1s.

DECEMBER 30.—Newport, Mon.—BRIDGE. Construction of a ferro-concrete bridge across the river Usk. Particulars from Mr. H. Tremelling, A.M Inst.C.E., Borough Engineer, Town Hall, Newport.

SEPTEMBER 26. **Derby.** ROADS. For various street works Plans and specification seen, and

brick sewer Drawings seen, and spe
and quantities from the Borough En
deposit of 2l.

Nature of Appointment.	By whom Advertised.	Salary.	Age.
'CLERK OF WORKS	Rochford Union	£l. 2s. per week	

Nature and Place of Sale.	By whom Offered.
*DEALS, BATTENS, BOARDS, TIMBER, &c. Great Hall, Winchester House, E.C.	Churchill & Sim
*PLANT AND MACHINERY, COUNTY HALL SITE, S.E.—On the Premises	H. J. Bromley
*BLDG. & GRI. LAND SITE, OF A NINTH, EUST. ETC. EXHIBITS—SEA—At the Mart	Debenham, Twoson, Richardson, & Co.
*FREEHOLD BUILDING SITE, GT. ST. HELEN'S, S.E.—At the Mart.	Edwin Fox, Bousfield, Burnetts, & Baddeley
*FREEHOLD BLDG. EST., STABLING, & COTTGS, TOOTING & HACKBDG.—At the Mart	Debenham, Twoson, Richardson, & Co.
*FREEHOLD BUILDING LAND, FULHAM Estate Room, 20, Hanover-square, W.	Knight, Frank, & Rutley

ESTATE EXCHANGE REPORT.		
	Winklesh, Devon, 170 acres and 508 Lutton Farm, Riddleton, and West September 7.—By J. HANNAFOOT & SONS.	63,010
September 2.—By SEXTON & GRIMWADE.	September 7.—By J. HANNAFOOT & SONS.	
Feldon, Essex—Games Farm, 20 a. 2 r. 23 p. f.	Marchford Bishop, Devon.—Cotture and 1 acre.	250
September 4.—By SEXTON & GRIMWADE.	By E. J. GILBERTS & CO.	
Groton, Suffolk.—Groton Hall Estate, 144 acres, f.	Frating, Essex.—Hill Farm, 43 a. 2 r. 3 p. f.	930
	By ELLIOTT & SONS.	
September 5. By E. S. BEARD & DANIEL.	Preston, Suffolk.—23 and 34, Preston rd., f., y. r. 70.	1,023
Colchester, Essex.—Butt-rd., Lord Cardigan Inn and shop adjoining, f.	23, Sunford-rd., f., y. r. 681.	810
September 17.—By E. S. BEARD & DANIEL.	16, Camphell-rd., f., y. r. 168.	325
28, Albert-rd., f.	10, Havelock-rd., f., y. r. 180.	340
September 6.—By KIVELL & HARRIS.	Brighton, Sussex.—10, Pelham st., f., w. r. 27, Os.	340
St. Gennys, Cornwall.—Crackington Manor Estate, 2,119 acres, f.	By BARBER & SON.	
	Rodding, Salop.—Rodding Farm, 100, Beano 915 acres, f.	28,863
	September 11.—By HAMPTON & SONS.	
	Asford, Carmarthenshire, Salop.—Accommoda- land, cottages, and 36 a. 0 r. 39 p. f.	
	September 12.—By MADDISON, MILLS, & MADDOCK.	
	Yarmouth.—31, Nelson-rd., North, f.	
	By DREWETT & WATSON.	
	Thatcham, Berks. Five cottages, f.	
	September 12.—By SCOTT PITCHER.	
	Chailly, Sussex.—Mascalls Farm, 4 a. 3 r. 20 f. and c.	
	September 14.—By GRIMMER & SON.	
	Bourneville, Worcs.—189, 188, and 190, Beano road, st. 82 yrs. q. 12, w. r. 38 p. f.	
	Erdington, Warwick, 43, Holliday-rd., f.	

Norton, Warwick—55 to 77 odd.
Barnard, 80 yds. g.r. 39l., w.r.
71y 12s. 4790
Wiles, Wors—11, 13, and 15, Charlotte-
d., u.t. 80 yds. g.r. 12s. 4118
Wors—51, 83, and 85, Douglas-
d., u.t. 78 yds. g.r. 12s. 4118
Wood, Warwick—207 to 213 (odd), 282
wood, 45 yds. g.r. 27l., w.r.
411 12s. 4d.
Heath, Wors—111, Golden Hillock-
d., u.t. 53 yds. g.r. 41 15s. 6d., y.r. 22s.
411 12s. 4d.

TO CORRESPONDENTS.
All communications with respect to literary
artistic matters should be addressed to "THE
BUILDER" (and not to any person by name); those
concerning the business of the office, or the
editorial matters should be addressed to "THE
BUILDER," and not to the Editor.
Communications must be accompanied by the
name and address of the sender, whether for publica-
tion or not. No notice can be taken of anonymous
communications.
Responsibility of signed articles, letters, and
read at meetings rests, of course, with the
author.

Advertisements—All communications with respect to literary
artistic matters should be addressed to "THE
BUILDER" (and not to any person by name); those
concerning the business of the office, or the
editorial matters should be addressed to "THE
BUILDER," and not to the Editor.
Communications must be accompanied by the
name and address of the sender, whether for publica-
tion or not. No notice can be taken of anonymous
communications.
Responsibility of signed articles, letters, and
read at meetings rests, of course, with the
author.

PRICES CURRENT OF MATERIALS.

The aim in this list is to give, as far as possible, the
current prices of materials, not necessarily the lowest.
The quantity obviously affects prices—a fact
should be remembered by those who make use of
information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Stocks	1 13 0
Red Stocks for Facings	3 2 0
Per 1000, Delivered at Railway Depot.	£ s. d.
Faversham	1 9 0
Double Headers 13 7 6	
One Side and Two Ends	17 7 6
Two Sides and Ends	18 7 6
Best Dipped Salt	15 17 6
Best Dipped Salt	10 17 6
Double Headers 10 7 6	
Quoins, Bullnose, and Flats	14 7 6
D'ble Stretchers 16 7 6	
Double Headers 13 7 6	
One Side and Two Ends	17 7 6
Two Sides and Ends	18 7 6
One End	18 7 6
Splays & Squints 15 17 6	
Quality White and Dipped Salt Glazed, £1 5s. per 1000 less than best.	
First and Pat Sand	8 9 per yard, delivered.
London Ballast	5 3 "
Portland Cement	89 0 per ton, "
Ground Blue Lias Lime	19 0 "
—The cement or lime is exclusive of the ordinary charge for sacks.	
Stone Lime	12s. 6d. per yard delivered.
Bridge Fireclay in sacks 27s. 6d. per ton at dry dpt.	

STONE.

Per Ft. Cube.	
York Stone—delivered on road waggons, s. d.	
Scrapped random blocks	2 10
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto	0 11
3 in. sawn two sides slabs (random sizes)	0 7
2 in. to 2 1/2 in. sawn one side slabs (random sizes)	0 6
2 in. to 2 1/2 in. ditto, ditto	0 6
Per Ft. Cube, Delivered at Railway Depot.	
Scrapped random blocks	3 0
Per Ft. Super., Delivered at Railway Depot.	
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto	3 0
3 in. sawn two sides slabs (random sizes)	1 2
2 in. self-faced random flags	0 5

STONE (Continued).

Per 1000 of 1300 at Railway Depot.

In. In.	£ s. d.
20x10 best blue	13 2 8
Bangor	13 17 6
20x12 ditto	13 17 6
20x10 last quality	13 0 0
ditto	13 0 0
20x12 ditto	7 5 0
16x8 ditto	11 12 6
22x10 best blue	9 12 6
Portland	12 12 6
16x8 ditto	6 12 6

TILES.

At Railway Depot.

Best plain red roof- ing (per 1000)	42 0
Hip and Valley (per doz.)	3 7
Best Blueless (per 1000)	50 0
Do. Ornamental (per 1000)	52 6
Hip and Valley (per doz.)	4 0
Best Knabon red, brown, or brindled (Bdw'ds) (per 1000)	57 6
Do. Ornamental (per 1000)	60 0
Hip (per doz.)	4 0
Valley (per doz.)	3 0

WOOD.

At per standard.

Deals: best 3 in. by 11 in. and 4 in.	£ s. d.
by 9 in. and 11 in.	14 0 0
Deals: best 3 in. by 9 in.	13 10 0
8 in., and 3 in. by 7 in. and 8 in.	11 10 0
Battens: best 2 1/2 in. by 6 in. and 3 in.	0 10 0
Deals: seconds	1 0 0
Battens: seconds	0 10 0
2 in. by 9 in. and 3 in. by 6 in.	9 10 0
3 in. by 4 1/2 in. and 5 in. by 3 in.	9 0 0
Foreign Sawm Boards— 1 in. and 1 1/2 in. by 7 in.	0 10 0
Fit timber: best middling Danzig or Memel (average specification)	5 0 0
Seconds	4 10 0
Small timber (8 in. to 10 in.)	3 17 6
Small timber (6 in. to 8 in.)	3 5 0
Swedish balks	2 12 6
Pitch-pine timber (30 ft. average)	4 10 0

JOINERS' WOOD.

At per standard.

White Oak, first yellow deals, 3 in. by 11 in.	24 10 0
3 in. by 9 in.	22 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	17 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0
3 in. by 9 in.	18 0 0
Battens, 2 1/2 in. and 3 in. by 7 in.	14 0 0
Third yellow deals, 3 in. by 11 in.	11 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	11 0 0
Petersburg, first yellow deals, 3 in. by 11 in.	21 10 0
Do. 3 in. by 9 in.	18 10 0
Battens	14 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0
3 in. by 9 in.	15 0 0
Battens	13 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0
Do. 3 in. by 9 in.	13 0 0
Battens	10 10 0

JOINERS' WOOD (Continued).

At per standard.

White Oak, first yellow deals, 3 in. by 11 in.	24 10 0
3 in. by 9 in.	22 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	17 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0
3 in. by 9 in.	18 0 0
Battens, 2 1/2 in. and 3 in. by 7 in.	14 0 0
Third yellow deals, 3 in. by 11 in.	11 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	11 0 0
Petersburg, first yellow deals, 3 in. by 11 in.	21 10 0
Do. 3 in. by 9 in.	18 10 0
Battens	14 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0
3 in. by 9 in.	15 0 0
Battens	13 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0
Do. 3 in. by 9 in.	13 0 0
Battens	10 10 0

JOINERS' WOOD (Continued).

At per standard.

White Oak, first yellow deals, 3 in. by 11 in.	24 10 0
3 in. by 9 in.	22 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	17 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0
3 in. by 9 in.	18 0 0
Battens, 2 1/2 in. and 3 in. by 7 in.	14 0 0
Third yellow deals, 3 in. by 11 in.	11 10 0
Battens, 2 1/2 in. and 3 in. by 7 in.	11 0 0
Petersburg, first yellow deals, 3 in. by 11 in.	21 10 0
Do. 3 in. by 9 in.	18 10 0
Battens	14 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0
3 in. by 9 in.	15 0 0
Battens	13 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0
Do. 3 in. by 9 in.	13 0 0
Battens	10 10 0

WOOD (Continued).

At per standard.

Dry Walnut, American, per ft. £ s. d.	
super, as inch	0 10 0
Teak, per load	18 0 0
American White-oak plants, per ft. cube	0 4 0
Prepared Flooring, etc.— 1 in. by 7 in. yellow, planed and shot	0 13 6
1 in. by 7 in. yellow, planed and matched	0 14 0
1 1/2 in. by 7 in. yellow, planed and matched	0 16 0
1 in. by 7 in. white, planed and shot	0 12 0
1 in. by 7 in. white, planed and matched	0 12 8
1 1/2 in. by 7 in. white, planed and matched	0 15 0
3 in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0
1 in. by 7 in.	0 14 0
1 in. by 7 in. white	0 10 0
1 in. by 7 in.	0 12 8
6 in. at 8d. to 9d. per square less than 7 in.	0 15 0

JOISTS, GIRDERS, &c.

In London, or delivered
Railway Vans, per ton.

Rolled Steel Joists, ordinary £ s. d.	
sections	7 0 0
Compound Girders, ordinary sections	9 0 0
Steel Compound Stanchions	11 0 0
Angles, Tees, and Channels, ordi- nary sections	9 0 0
Flitch Plates	9 0 0
Cast Iron Columns & Stanchions, including ordinary patterns	7 10 0

METALS.

Per ton, in London.

Common Bars	£ s. d.
Staffordshire Crown Bars, good merchant quality	8 15 0
Staffordshire "Marked Bars"	10 10 0
Mild Steel Bars	8 15 0
Hoop Iron, basis price	9 5 0
"Galvanised"	17 0 0
(And upwards, according to size and gauge.)	
Sheet Iron Black— Ordinary sizes to 20 g.	9 15 0
"24 g.	10 15 0
"26 g.	12 5 0
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0
Ordinary sizes to 22 g. and 24 g.	15 10 0
"26 g. and 28 g.	16 10 0
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18 0 0
"22 g. and 24 g.	18 10 0
"26 g.	20 0 0
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0
"22 g. and 24 g.	14 15 0
"26 g.	16 5 0
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0
Best Soft Steel Sheets, 2 g. & 2 1/2 g.	13 0 0
"26 g.	15 0 0
Cut Nails, 3 in. to 6 in.	10 10 0
(Under 3 in., usual trade extras.)	

LEAD, &c.

£ s. d.

Lead—Sheet, English, 4 lb. and up	18 0 0
Pipe in coils	18 10 0
Soft pipe	21 10 0
Compo pipe	21 10 0
Zinc Sheet— In casks of 10 cwt.	34 10 0
Vielle Montagne	34 10 0
Silesian	33 15 0
Zinc, in bundles, 15 lb. per cwt. extra.	
Copper— Strong Sheet	per lb. 0 1 0
Thin	0 1 10
Copper nails	0 0 10
Copper wire	0 0 10
BRASS— Strong Sheet	0 0 11
Thin	0 0 10
Tin—English Ingots	0 0 10
Solder—Plumbers'	0 0 9 1/2
Timmen's	0 0 11
Blowpipe	0 1 2

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

Per Ft. Delivered.

15 oz. thirds	24d.
26 oz. fourths	34d.
"fourths	32 oz. thirds
21 oz. thirds	3d.
"fourths	24d.
26 oz. thirds	4d.
21 oz. thirds	21 oz. 4 1/2d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Per Ft. Delivered.

Hartley's	24d.
Figured Rolled, Ox- ford Rolled, Occa- sional, Arctic, Mottled, and Rolled Cathe- dral, white	34d.
Ditto, tinted	5d.

Not less than three crates.

OILS, &c.

£ s. d.

Raw Linseed Oil in pipes	per gallon 0 3 9
"in barrels	0 3 10
"in drums	0 4 0
"in barrels	0 4 0
"in drums	0 4 0
Turpentine in barrels	0 3 8
"in drums	0 3 8
Genuine Ground English White Lead, per ton	22 10 0
Red Lead, Dry	21 0 0
Best Linseed Oil Putty	per cwt. 0 11 0
Stockholm Tar	per barrel 1 12 0

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£ s. d.
Pale Copal Oak	0 8 0
Superfine Pale Elastic Oak	0 10 6
Fine Extra Hard Church Oak	0 12 6
Superfine Hard-drying Oak, for seats of Churches	0 10 0
Fine Elastic Carriage	0 14 6
Superfine Pale Elastic Carriage	0 12 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	0 18 0
Everhull Flatting Varnish	1 4 0
White Pale Enamel	0 12 0
Best Japan Gold Size	0 10 8
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100, unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

ABERHILL.—For new school, for Wemyss School Board. Mr. G. Charles Campbell, Architect, Methil:
 Mason: J. Farmer, Methil* £3,663 12 8
 Joiner: D. Dewar, Methil* 2,812 8 3
 Smithwork: Barnett & Morton, Kirkcaldy* 158 12 3
 Plumber: W. Nicol, Buckhaven* 872 0 0
 Sinter: W. Currie, Kirkcaldy* 133 7 9
 Plasterers: J. & T. Stobie, Buckhaven* 950 12 9
 Edinburgh*
 Tilerwork: Allan & Sons, Edinburgh* 263 17 6
 Glaziers: T. Conits & Sons, Kirkcaldy* 112 16 1
 Painter: T. McFarlane, Methil* 245 0 0

BRACKNELL.—For cottage and stabling at Bracknell, for Mr. G. Pantor. Mr. Cecil H. Perkins, A.R.I.B.A., architect, Church-road, Bracknell, Berks:—

	Cottage.	Stable.	Total.
	£ s. d.	£ s. d.	£ s. d.
H. Charman	659 0 0	149 0 0	805 0 0
G. Brown	632 0 0	129 6 0	761 6 0
T. Cottrell	575 10 0	110 0 0	685 10 0
Payne & Co.	540 0 0	1 9 0	630 0 0
G. Davis	515 0 0	113 0 0	628 0 0
Extra of the late J. B. Seward, Working ham*	Not divided.		584 0 0

BULPHAN.—For the erection of the first homestead in connection with the Smallholding Co-operative Colony, Church-lane, Bulphan, near Romford. Mr. J. Williams, Danford, architect, 100, Queen Victoria street, E.C.:—
 Brown Bros. £394 H. J. Carter, Ltd. £509
 C. Manning 566 | W. T. & J. Coopers, Ltd. | 550 || F. J. Coxhead | 545 | Newington Causeway, S.E., and at | 525 |
| Snewin Bros. & Co. | 525 | Bulphan | 404 |

DOVER.—For erection of an infants' school at Bulwark Hill. Mr. W. C. Hawke, Borough Engineer, Dover:
 G. H. Denne & Son £3,413 0 0 | S. R. Spinner | £3,024 0 0 || T. T. Denne | 2,987 0 0 | Parsons, Ltd. | 3,223 18 3 |
R. J. Barwick	2,944 0 0	W. J. Ballard	3,150 0 0
T. C. Glynns	2,890 0 0	G. Lewis & Sons	3,067 0 0
W. H. Gries	2,872 0 0	A. Tapley	3,069 0 0
Hayward & Parnor	3,027 0 0		

EXETER.—For alterations and additions to the workhouse laundry. Mr. R. M. Challice, architect, 14, Bedford-circus, Exeter:
 J. W. Castle £547 14 0 | Popman | £319 0 0 || G. Setter & Son | 543 14 11 | Soper, Magdalen Bridge, Exeter* | 506 0 0 |
| Hans & Passmore | 527 6 0 | | |
| G. Herbert | 522 0 0 | | |

FARNBOROUGH.—For erection of a fire station. Mr. J. E. Hargreaves, Surveyor, Town Hall, Farnborough:
 A. Johnson £621 0 0 | Drowley & Co. | £235 0 0 || W. Watson | 620 0 0 | E. C. Hughes | 325 0 0 |
A. Crockerell	612 0 0	D. & H. J. Poulter	310 0 0
Caesar Bros.	607 0 0	G. Kamp & Co.	498 0 0
J. Seward	598 0 0	T. G. Smith	450 0 0
A. J. Galeworthy	585 0 0	Croley & Co.	425 0 0
W. Wellesley	583 13 0	Jones Bros., Farnborough* ..	390 2 6
Martin, Wells, & Co.	549 0 0		

HOVE.—For constructing a ward block and other work at the Infectious Diseases Hospital, Portlaid. Mr. Hugh Hamilton Scott, Borough Surveyor, Hove:
 J. & M. Patrick, Point Pleasant, Wandsworth* £2,370 | | |

KEIGHLEY.—For additions to laundry. Messrs. J. Haagas & Sons, architects, North-street, Keighley:
 Mason and Joiner: H. Y. Robinson, Ltd., Keighley*
 Slater: W. H. & E. Walton, Keighley*
 Concretor: A. Emmott, Keighley*
 Ironwork: J. Gill, Keighley*
 Put, Glancing: W. H. Heywood & Co., Huddersfield*

KEIGHLEY.—For additions to brewery. Messrs. J. Haagas & Sons, architects, North-street, Keighley:
 Masons: A. & W. Sharp, Oakworth, near Keighley*
 Joiner: W. Steel, Apsley-street, Keighley*
 Slater: W. Thornton, Bingley*
 Plasterer: J. Boot, Keighley*
 Plumber: W. E. Harrison, Ltd., Keighley*
 Ironwork: J. Gill, Keighley*
 Concretor: J. Cooke, Huddersfield*

LARGO.—For waterworks, for Fifeshire County Council. Messrs. Bruce & Proudfoot, civil engineers, 67, Crossgate, Cupar:
 A. H. Robertson £416 15 6 | J. Farmer | £16 15 6 || W. G. Hett | 897 7 9 | J. Marlin | 787 5 11 |
D. Gilmour	893 6 4	G. Simpson	759 18 3
J. & J. Street	872 6 3	A. M. White & J. Ritchie	751 1 11
R. C. Brebner & Co.	838 11 5	Son, Chance	695 2 21
R. J. Morrison	819 11 9	Imn, Cupar* ..	
A. Gray & Co.	817 11 9		

SALISBURY.—For erection of a motor garage and residence, for Mr. A. M. Edwards. Mr. A. C. Bothams, architect, 32, Chipper-lane, Salisbury. Quantities by architect:—
 Roles & Sons £1,220 0 0 | Vincent & Pollard | £1,075 10 0 || W. S. Harris | 1,190 10 0 | Worth & Day | 1,025 0 0 |
Kite & Sons	1,153 10 0	Smith & Bundy, Bournemouth* ..	970 0 0
T. Dawkins	1,080 0 0		
G. Mitchell	1,060 0 0		
E. T. Jenkins	1,050 0 0		

SHEFFIELD.—For erection of buildings in Charlotte-street and Port-bello street. Messrs. Gibbs, Flockton, & Teather, architects, Sheffield:—
 Dawson, Jones, & Co. £23,659 | T. Wilkinson & Sons | £21,120 || J. Fidler Ltd. | 31,064 | D. O'Neill & Son | 3,550 |
J. Vasey & Son	3,823	G. Carr	32,299
A. Ash, Son, & Bagnall	31,855	G. Longden & Son	39,700
J. Eshelby & Son	31,300	W. R. Unwin	30,448
D. Sheldon	31,201	R. Roper & Sons	29,879
B. Powell & Son	31,278	H. Boot & Sons, Ltd., Ecclesfield* ..	29,457
W. & A. Forsdike	31,250		
H. Freckingham & Sons	31,229		

SUNBURY.—For extensions of church wharf. Mr. H. F. Coales, Council Surveyor, Sunbury:
 R. C. Brebner & Co. £594 18 0 | S. Kavanagh & Co. | £438 3 3 || Allen & Long | 582 0 0 | Leggott | 417 8 9 |
T. W. Padgett	529 5 0	Spaight	399 9 1
J. Shelbourne	491 0 0	A. Roberts	351 6 11
W. F. Vinter	452 16 4		

[Surveyor's estimate, £450.]

Ham Hill Stone, Doubling Stone, Portland Stone.

The Ham Hill and Doubling Stone Co., Ltd. (Incorporating the Ham Hill Stone Co. and C. Thomas & Co. Ltd., Doubling Stone Co., Ltd.)

Norton, Stoke-under-Ham, Somerset.
 London Agent:—Mr. E. A. Will, 16, Craven-street, Strand.

WHAT!

LIME-SAND BRICK

(Of the Finest Quality)
 FOR CONTRACT WORK
 WHY?

The Bricks are uniform. Less mortar is required. Closer joints can be made. 15 per cent. more bricks can be laid per day. Where light is required they need no walling. Saving of material and labour. USED BY THE ARMY IN THE MANY AND IN THIS COUNTRY.

These Bricks are made by the GODSTONE BRICK & TILE CO., Ltd., Oxford Road, Godstone, Surrey, and can be delivered in quantities of not less than 100,000 within 10 miles of the Company's Works at 28/- per 1,000. Send for Free Sample.

Asphalte.—The Seyssel and Metallurgical Asphalt Company (Mr. H. Glenn), Office, Portland, E.C.—The best and cheapest material for damp courses, railway arches, war floors, flat roofs, stables, cow-sheds and rooms, granaries, tun-rooms, and for Asphalt Contractors to the Forth Bridge.

SPRAGUE & CO., Ltd.,
 LITHOGRAPHERS AND PRINTERS
 Estate Plans and Particulars of Sale prepared and executed.

4 & 5, East Harding-st., Fetter-lane.

JOINERY

Of every description and in any kind of wood.
CHAS. E. ORFEUR, Ltd.,
 ESTIMATES OF APPLICATION. COLNE BANK WORKS, COLCHESTER.
 Telephone: 1135. Telegrams: "Orfeur, Colchester."

PILKINGTON & CO.

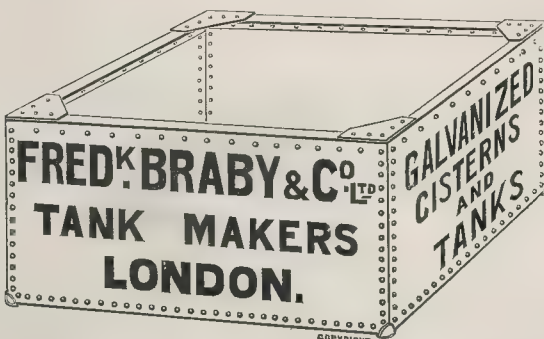
(Established 1838).
 DEPTFORD WHARF,
 190 & 192, CREEK ROAD, DEPTFORD, S.E.
 Telephone No.: New Cross 1162 (two lines).

Registered Trade Mark.

Polonceau Asphalt

PATENT ASPHALTE AND FELT ROOFING.
 ACID-RESISTING ASPHALTE.
 WHITE SILICA ASPHALTE.
 SEYSSSEL ASPHALTE (Direct from the Manufacturer).

ALSO AT DEPTFORD,
 LIVERPOOL, BRISTOL,



GLASGOW, FALKIRK,
 BELFAST, & DUBLIN.

Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

THE BUILDER

VOL. CL.—No. 3582.

SEPTEMBER 28, 1911.

CONTENTS.

PAGE	PAGE	PAGE
SHALL—AND AFTER	349	MONTHLY REVIEW OF CIVIC DESIGN:—
ARCHITECTURE	350	PARK VIEW, ST. LOUIS (WITH ILLUSTRATION)
CRYSTAL PALACE (WITH ILLUSTRATION).....	351	SCULPTURE IN CIVIC ART (WITH ILLUSTRATIONS)
TEMPORARY ARCHITECTS AND THEIR WORK		TOWN PLANNING COMPETITION AT DÜSSELDORF
(WITH ILLUSTRATIONS).....	352	PROPOSED MEMORIAL TO KING EDWARD (WITH
ARCHITECTURAL ASSOCIATION.....	355	ILLUSTRATIONS)
ARCHITECTURAL SOCIETIES.....	356	NOTES
ARCHITECTURAL NEWS	356	THE BUILDING TRADE:—
ARCHITECTURE AT HATFIELD (WITH ILLUSTRATION) ...	358	BUILDERS AND EXTRAORDINARY TRAFFIC
ARCHITECTURAL COMPETITION NEWS	358	LONDON MASTER BUILDERS' ASSOCIATION
(WITH ILLUSTRATIONS).....	358	GENERAL BUILDING NEWS.....
REVIEWS AND REVIEWS	361	APPLICATIONS UNDER LONDON BUILDING ACTS,
RESPONSE	361	1894 TO 1909
EDITORIAL SUMMARY.....	362	PROJECTED NEW BUILDINGS IN THE PROVINCES 371
REVIEWS	362	LAW REPORTS
NOTES TO ILLUSTRATIONS	362	LONDON COUNCILS
COMMUNICATION COLUMN.....	362	AUSTRALIAN COAT OF ARMS (WITH ILLUSTRATION) 372
YEARS AGO	362	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...

OBITUARY	375
FOREIGN AND COLONIAL	375
PATENTS.....	376
SOME RECENT SALES.....	376
PRICES CURRENT.....	376
TENDERS	377

Illustrations.

WORK BY MESSRS. EAMES & YOUNG:—
WEST POINT IMPROVEMENT SCHEME.
TELEPHONE STATION, ST. LOUIS.
PUBLIC LIBRARY, ST. LOUIS.
ENTRANCE LODGE, WESTMORELAND-PLACE
ST. LOUIS.
MISSISSIPPI VALLEY TRUST COMPANY'S BUILDING
ST. LOUIS.
UNITED STATES CUSTOMS HOUSE, SAN FRANCISCO.
LINCOLN RAILWAY IMPROVEMENT, ST. LOUIS.

Illustrations.

WORK BY MESSRS. EAMES & YOUNG:—
 WEST POINT IMPROVEMENT SCHEME.
 TELEPHONE STATION, ST. LOUIS.
 PUBLIC LIBRARY, ST. LOUIS.
 ENTRANCE LODGE, WESTMORELAND-PLACE
 ST. LOUIS.
 MISSISSIPPI VALLEY TRUST COMPANY'S BUILDING
 ST. LOUIS.
 UNITED STATES CUSTOMS HOUSE, SAN FRANCISCO.
 LINDELL BOULEVARD IMPROVEMENT, ST. LOUIS.



Montacute, Somersetshire. (See page 358.)

From Mr. Willmott's "English House Design." (B. T. Batesford.)

TATTERSHALL—AND AFTER.

THE active interest taken by the public and the Press in the fate of Tattershall Castle may well be hailed as presaging a more enlightened attitude towards the treasures bequeathed by the past ages. It is for the geologist and the architect to take advantage of this awakening, and to set and advise as to the best means of making operative what we can justly claim to be the wish of all educated people. The Government made a start a short time back by appointing a Royal Commission, but Lord Burghclere, the Chairman of this Commission, points out in a letter, published in the *Times* of

September 26, that this Commission has no authority by which it can restrain the destruction or sale of ancient buildings, and that a necessary complement to its work would be the investment of a responsible Minister, assisted by an Advisory Committee, with power to deal with such matters.

This should not be difficult to do, as we have already an excellent example in France, and the country is crying out for the appointment of a Minister of Fine Arts who would combine this duty with others almost equally urgent.

The Royal Commission has, during the short time that has elapsed since its

appointment, done a great deal of work in drawing up a schedule of valuable buildings and other objects of national importance, but the programme before it is so large that the most favourable computation puts as the term of its labours a period of twenty years, and during that time any amount of damage might be done.

At the same time, as we pointed out in our issue of September 15, it is not easy to legislate on a general basis without a definite schedule of the buildings of sufficient value to demand the abrogation of private rights for their protection. It might be possible to claim

notice of any proposed action on the part of any owner of any structure above a certain age, but this would be likely to create difficulties, and, moreover, mere age is by no means a good criterion of interest. It would undoubtedly be far preferable to have each structure identified, and those interested in it as owners or occupiers duly notified that it is regarded as a national monument.

Assuming that this alternative is accepted as preferable, it makes the investigation of our ancient buildings and other remains an urgent matter, and one that should certainly not be allowed to drag over a term of twenty years. We do not intend to imply that the Royal Commission is not using the utmost expedition possible for a body constituted as it is, but it certainly appears to us that the method laid down for its procedure is unnecessarily cumbrous and wasteful. It is obviously impossible that the members of this Commission can give more than a small portion of their time to this work, while, on the other hand, the work allotted to them has already been in a large measure effectually done by local archaeological and architectural societies, some of which have very full records of their own districts or counties.

While no exception can be taken to those gentlemen forming the Royal Commission, there are dozens more of equal competence for the purpose of this work scattered throughout the country whose services are not being sufficiently utilised, and it would be easy to form a much larger body, divided into district committees, for the purpose of correlating and supplementing the work of the societies. It might be desirable to retain the Commission in its present form as a kind of Court of Appeal for the purpose of ensuring uniformity and balance in the treatment of the various districts, either hinting at a more inclusive programme in one or checking over-elaboration in another, but in this case its duties would be greatly lightened.

We have no hesitation in stating that some such method as this would enable the whole country to be dealt with in the course of two or three years. Even if the list so obtained were not absolutely complete, there would be no difficulty in providing for subsequent correction or supplement in cases of doubt or difficulty, and an Act for the protection of antiquities could be made to cover the works as soon as they were scheduled.

By this means no time would be lost, and we should soon be in a position to take prompt measures in the case of threatened buildings, either by compulsory purchase, by agreement for maintenance, or by such other means as might be best suited to the case in question.

With the wealth of voluntary effort at the disposal of the nation in the study of our antiquities it appears a most wasteful proceeding to take so little pains to organise it, and if it be organised on the lines suggested there is no doubt that we should, in a very short time, be in a position to make a protective Act of Parliament operative. Voluntary effort has in the past done so much for us in various directions that there seems no reason why we should not count on it to help us in our plans for the future.

STAGE ARCHITECTURE.



MR. GORDON CRAIG'S exhibition of drawings and models for "Macbeth" and other plays, at the Leicester Galleries, awakens interest in a subject that is rarely taken very seriously. Your dramatic critic, for instance, whatever may be his views about a play, has usually nothing but praise for the scenery; it often indeed comes in for the ha'pence while the play is receiving the kicks. And there are no doubt many pretty stage effects that have been mastered by our scene-painters, and that are a delight to the eye. But dramatic critics would mostly agree, we imagine, that modern stage scenery in this country errs on the side of over-elaboration, more especially in Shakespearean and serious drama. Mr. Craig's aim is to do away with this elaboration and to invest stage scenery with a quality which brings it into psychological relation with the action of the drama. Further, he has views on stage lighting, aiming at a more natural effect than is obtained by the conventional footlights, head and side lights, and limelight. We do not know that there is anything particularly novel in all this; not at any rate so far as other countries are concerned. Wagner, as we all know, carried out most successful experiments of the sort in his theatre at Bayreuth. Mr. Craig is moved by the same poetic considerations as Wagner; but Wagner was a Teuton, while Mr. Craig, we take it, is a Celt. His type of art clearly belongs to what used to be called the Celtic movement: that is, it strives to express a certain imaginative quality, to evoke a certain imaginative beauty and mystery, for their own sake. It places art in relation not to the symbol of life, but to the symbol of the haunting unknown. Wagner's symbolism was, just as was the symbolism of the ancients or of the Christian era, *au fond* philosophic; it was either a commentary on, or an explanation of, life or action. Mr. Craig's is a commentary on mystery: the mystery of space, or of structure, or of man in relation to structure and space; the mystery of shrouded lights, of the gradations of atmosphere between midnight and dawn, of red lights penetrating vistas of corridors and doorways. There is an undeniable beauty in all this; there is also a distinct and subtle poetic quality (if not very profound) which we would be delighted to find illustrated in the theatre, but it is not the last word in the art of the scene-painter—not at least so far as it finds expression in Mr. Craig's drawings. These drawings, indeed, convey so excellently in line and colour the painter's feeling that we doubt—it is only a pious doubt—that they would carry the same effect if they were built up to the scale of stage scenery. They are indeed very pretty drawings. The secret of their attraction is perhaps largely to be found in Mr. Craig's choice of simple lines, in his appreciation of the value of blank spaces, in his desire to bring the scale of the scenery into imaginative relations with the scale of the figure, and to reduce it when necessary, as, for example, in the case of a simple living-room, to something like natural dimensions. And there is,

of course, his lighting—the shades and sombre tones. But Mr. Craig's drawings and theories do not embody whole art and grammar of scene-painting. We imagine, indeed, that very much the same effect at which he aims could be obtained by a skilful arrangement of curtains. For our own part, we are inclined to think that arguments might be advanced—as they have indeed been and plausibly enough—to show that the scene-painter comes in at the end of the art of acting flies out at the window. But the scene-painter or the scene-builder has become a permanent part of the institution of the theatre, and we do not do away with him even if we will. When he first came into view, well, in the middle period of the Italian Renaissance, he was, if not an architect, a man with the training of an architect. To hark back to particular names, Baldassare Peruzzi, the architect of the Massimi Palace in Rome, would be likely to have been the protagonist in the evolution of modern stage scenery, but long before his time Brunelleschi had tried his hand at stage illusions, religious representations at Florence. These men, of Latin blood, did not play with the mysteries of the world with the suggestiveness of haughty shadows, but with the luxury of material, of line and form. Some of the most delightful drawings which have come down to us from that time, and later, are those which deal with architectural scenic effect; not, it is true, devised so much for plays as for pageantry and masques, for the elaborate ceremony of some Court festival. The architect—when the designer was an architect—gave riot to his imagination, built castles in the air, imposing balconies and staircases, vast halls with radiating vistas, beyond the means, if not ambitious of any ducal or papal client. Fresh in Italy, Inigo Jones won much of his early reputation through his invention and skill in stage arrangement. The art would seem to have fallen into other hands for a century or two, and fell to the practice of a sort of crafter of a type of painter rather better fitted to an itinerant house decorator, and not so good as the painter who is permitted to hang his work in galleries, with, of course, some notable exceptions. At the beginning of last century the voice of the archaeologist was heard tentatively testing against the inaccuracy of certain stage effects, either in regard to cost or scenery, but it was a voice in the wilderness, and made little or no impression on the actor-manager of the time. To-day the actor-manager is alert to everything but acting, and even in the theatre he wishes to be above criticism. He called in, to keep him right in regard to furniture and details, the best of the Tottenham Court-road can give him. Henry Irving sought the aid of Albert Tadema to the vast advantage of his or two Shakespearean pieces produced at the Lyceum, and later actor-managers have invoked the aid of Royal Academicians and other artists of reputation. Mr. Craig has made a certain appeal to the imaginative and poetic sense, but he is largely content to ignore the seeking spacious mass and form, and the combination of these which makes

at one calls architecture. Alma Tola, with his undisputed architectural knowledge, has provided some of the stage scenery of our time. And there are others, even architects themselves, who might be engaged usefully to set the theatre in an artistic phase, so very dependent upon architectural and decorative skill. We do not deny that the modern scene-painter contrives charming acts. Mr. Craig shows how he might lend these effects into the realm of artistic suggestion; Bibiena, and the old Italian architects who devised scenery, showed how consummate imaginative ability could be expressed through a mere material apprehension of the value of architectural treatment.

NOTES.

THE disclosure by Mr. Albert Ball of the details of last year's negotiations between him and the National Trust appears to be this Society in a very awkward position. While admitting that it is difficult to put an exact money value on property of this character, it is clear that the National Trust have been very wise in neglecting the opportunity which was offered to secure the Castle intact in 1900. It can only be imagined that the Society knew very little of the value, its contents, or its historic interest, as otherwise they could not have been misled with so little consideration of a proposal that must have elicited a response throughout the country. So much good has been done in the past by the National Trust that it would be unfair to be too hard on them for one mistake, but it mainly looks as if more expert advice were needed in order that their work might be efficiently carried on till such time as it is taken over by a Government Department.

ON the heels of Tattershall Castle comes the threatened destruction of the Louth Bridge, one of the most interesting mediæval bridges in the Lake district. This time it is the local authority which is responsible for the proposed vandalism, the Bridges Committee of the Cumberland County Council having recommended the building of a new bridge. This action is the more extraordinary in view of the fact, as stated in Robert Hunter's letter to the *Times*, that Mr. Francis Fox's grouting system has been successfully applied in the restoration of the picturesque bridges over the Derwent at Grange, quite near the bridge now threatened. Our readers are, no doubt, conversant with the grouting method, so that we need only add that, besides having been proved thoroughly effective in enormously increasing the strength of the old work, it is at the same time very much less costly than a rebuilding scheme. For our part, where the old bridge is inadequate in width for the needs of the traffic we would far rather see a road diversion with a new bridge than the destruction of a structure possessing so much interest. In other cases than that of inadequate width, cement grout will usually do all that is required.

THE White Horse Cellars, and Hatchett's, Piccadilly. NEXT month will be offered for sale, at the Mart, the freehold property, Nos. 67, 67A, 68, and 68A, Piccadilly, which comprises Hatchett's Restaurant—formerly Hatchett's Posting-House, and the White Horse Cellars—with some adjoining shops, and, in the upper floors, the rooms of the Grosvenor Club. The premises, yielding an aggregate rental of 6,900*l.* per annum, cover nearly 6,000 ft. super. at the corner (east) of Dover-street and Piccadilly. They were built, of red brick and Ancaster stone, in 1884, by Mr. John Grover, contractor, at a cost of more than 32,000*l.*, with 70,000*l.* for the site of the Cellars, after the designs of Messrs. W. S. Weatherley and F. E. Jones, as described and illustrated in the *Builder* of December 27, 1884, and November 28, 1885. The ground floor having been converted into shops in 1889, the premises were reopened in 1897 as the Avondale Hotel and Hatchett's Restaurant. In the rebuilding were preserved some relics, including the original signboard bearing a white horse, the smoke-jack, and an oaken drain-pipe of Abraham Hatchett's hostelry, the headquarters in London of patrons of "the road," and of the West of England mail coaches. The Old White Horse Cellars were on the south side of the street; they latterly became a parcels office, at No. 155, the Bath Hotel, which, with Walsingham House, gave place, in 1903-4, to the Ritz Hotel. There is a drawing of the Cellars by Cruikshank, and a coloured print by Rosenberg, 1828, after a drawing by J. Pollard.

HOUSES *versus* **FLATS.** DESPITE the deplorable condition of the market in respect to the sale or mortgage of flat properties, this type of residence is still increasingly in demand, while the larger town house, except in the very best districts, is becoming more and more difficult to let or sell, and leaseholders who are precluded from subdividing their properties are often very unfavourably placed. Even where there are no restrictions precluding the conversion of large houses into flats it is a matter to be treated with the greatest caution. So many houses hardly provide sufficient area on each floor for a well-arranged flat and any considerable extension may be prohibitive on the ground of cost. Some conversion schemes that have been financially successful divided each house into two occupations, the ground floor and half basement being shut off from the upper floors. The combination of two houses to form a block with one good flat on each floor seems a possible solution that might have received more attention than it has, but all schemes involving much work in alteration require very careful study if they are to compete successfully with new buildings, as it will hardly be possible to give quite as convenient arrangements and the subsequent cost of upkeep will invariably be somewhat higher. It is actually easier to convert large houses into a comfortable private hotel than into satisfactory flats, and possibly the general trend of our needs, which is to some extent influenced by the form of accommodation available, will bring this type of housing more into

demand, as meeting the requirements of many who, under different existing conditions, might have adopted the flat as their dwelling.

HERALDIC IMPROPRIETIES. HERALDRY is an art which is subject to many laws strange to the comprehension of the matter-of-fact citizen. Its purpose as a means of identification in tournament or war has gone and only experts, or a few diligent readers of Mr. Maurice Hewlett, can view with insight and emotion the symbols and devices which enrich the mansions, the carriage doors, and the stationery of the nobility. The considerable decorative licence assumed by heralds is often disconcerting. For instance, in the Arms shown in the drawing on p. 373, the use of helm and crest seems out of place. No woman, other than a reigning sovereign, is allowed to bear either; even the coat itself must be borne upon a lozenge instead of a shield. Surely, then, it would be more reasonable to apply some similar restriction to all impersonal arms. Does not the Ulster King-of-Arms forbid the use of a helm in the armorial bearings of the cities and towns in Ireland? Even where the crest is shown without its supporting helm it is little less ridiculous. They are so closely united by the associations of the past that, to use the one without the other merely gives a feeling of incompleteness to the achievement. In the case of the Australian arms it should not have been a difficult problem to find accessories more in keeping with the democratic characteristics of the country.

MUNICIPAL IMPROVEMENTS AND DISTRESS COMMITTEES. AT this time of year many of our municipal bodies are in conference with distress committees over the question of providing work for the unemployed during the coming winter. The main difficulty that crops up in undertaking improvements for the purpose of providing employment lies in the fact that usually but a small proportion of the expenditure goes to unskilled labour. Of course, the proportion depends on the type of improvement adopted, but generally the utmost that can be allotted for work suited to the capacities of the unemployed is between 30 and 40 per cent., the remainder representing the cost of material used and of the skilled labour necessary.

THE CRYSTAL PALACE.

WHILE the fate of the Crystal Palace still hangs in the balance, a short account of the structural features of one of London's most familiar landmarks may be excused. For close upon sixty years this mid-Victorian "fairy palace," conceived in the expectation of universal peace, and destined, perhaps, to disappear amid the war-clouds of the XXth century, has queened it upon Sydenham Hill in the pride of its naked girders, cast-iron as the ideals of the age which gave it birth. If the analysis of this ferro-crystalline fairyland will not advance us many steps towards the designing of Oberon's palace, it will, at any rate, reveal to us the cunning hand of the master-builder.

The Crystal Palace, as it now stands, embodies the materials, and perpetuates the principles of the building erected in Hyde Park in 1851 to house the Great Exhibition, the design of which owed its genesis to the

following circumstances. In answer to the invitation of the Building Committee no less than 240 designs were submitted; the having been all rejected as unsuitable, the Committee prepared a design of their own, the chief objection to which was the impossibility of finishing it in time, entailing as it did the laying of about 16,000,000 bricks. At this juncture, Mr., afterwards Sir, Joseph Paxton proposed a gigantic greenhouse of iron and glass, an enlarged edition, in fact, of the great conservatory he had already erected at Chatsworth, in his capacity as head-gardener to the Duke of Devonshire. The idea was at once adopted, and with the assistance of the contractors, Messrs. Fox & Henderson, the Paxton scheme was carried into practical execution. The plan was cruciform, and consisted of a nave 1,848 ft. in length, and a central transept 408 ft. in length, both 72 ft. wide. These were flanked by aisles 24 ft. wide. These dimensions, it will be noted, are all multiples

of a casting of similar section, with corresponding snugs at either end, alternating with projections upon which the cross-girders take their bearing, the length of the connecting-piece being governed by the depth of the girders. Bolt-holes are cast in the snugs of column and connecting piece, and bolts and nuts secure them in their places. Thus the three-story portion, both as originally erected, and to-day at Sydenham, consists, first, of columns 18 ft. 5½ in. in length, bolted to base plates, next of connecting pieces 3 ft. 4 in. deep, supporting the girders, above this, again, are columns 16 ft. 7½ in. long, with similar connecting pieces supporting the girders, and the arrangement is repeated once more for the third story. The girders are single castings 3 ft. deep by 23 ft. 4 in. in length, divided into three compartments by vertical struts connected by diagonal ties and struts. Each nave and transept column, therefore, considered as a whole, was at Hyde Park held laterally in its place at three different levels by girders in two directions longitudinally, and in one direction transversely, the width of the nave and transept being, of course, left clear. Elsewhere the system of columns and girders divided the building on plan into squares of 24 ft.

The whole of these materials, with the exception of the roofing, were made use of in the re-erected building at Sydenham, the plan and dimensions being altered as follows. The entire length was shortened to 1,608 ft., the nave being of the original width of 72 ft., with an enlarged central transept 120 ft. wide, 408 ft. in length, and 170 ft. in height to the centre of the semicircular roof. At either end of the nave were transepts of the same width as the nave, also 408 ft. in length. The arrangement of aisles and galleries remained substantially as before. A fire which occurred in 1866 destroyed the north transept, with the bays of the nave to the northward, and this has never been rebuilt, so that the present over-all length is considerably reduced. On the outside of the present northern end of the nave may still be seen the columns which carried the principals of the roof of the destroyed transept. The nave and end transepts are of the three-storied construction described above, with the addition of an extra 8 ft., from which level spring their semicircular roofs, the height from the floor to the centre being 106 ft. The central transept has an extra story, the height of an additional column, connecting piece, and girder. The columns supporting the nave and transept roofs of the original building were placed in one straight line; at Sydenham, in front of every fourth bay of 24 ft., an additional bay is advanced 8 ft. into the central space to carry the roof principals, which are all of wrought-iron. Wrought-iron ties give additional lateral strength to these portions. The glazed facing of the whole building is divided into stories corresponding with the internal vertical divisions. Each bay is subdivided vertically into three by intermediate posts of wood. The girder portion is occupied by louvres. The fall of the ground from west to east necessitated a basement-story on the east side. The columns of the facing of this story are all of iron. At either end of the main building are wings of similar construction projecting eastwards, each 574 ft. in length, the southern wing connecting with the railway-station by a colonnade 720 ft. in length. The water-towers, supplying the head of water for the great fountains, were designed by Brunel. They have an extreme height of 284 ft.

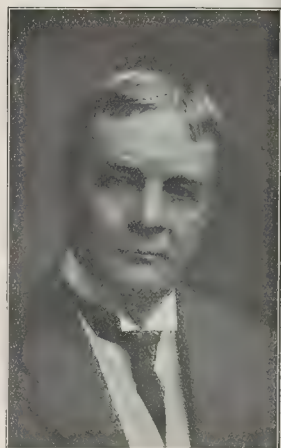
The Crystal Palace was opened by Queen Victoria on June 10, 1854, the first column having been placed in position at Sydenham on August 5, 1852. The materials of the Hyde Park building were purchased for re-erection for 70,000l. We have confined ourselves in the foregoing description to the anatomy of the structure itself, which the space at our disposal has compelled us to

sketch in the barest possible outline. The historical and educational aspects of the subject we must leave to abler pens than ours.

CONTEMPORARY ARCHITECT AND THEIR WORK:

MESSRS. EAMES & YOUNG, OF
ST. LOUIS.

BROADLY speaking, a city as far removed from the thoughts of a people as St. Louis is from the English can but little interest them. It is doubtful even if this particular town were close by and within the British Empire whether the ordinary enlighten-



[Photo. by the Curtis Studio.]

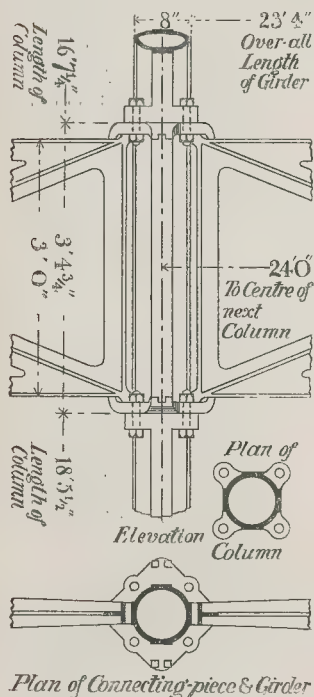
Mr. W. S. Eames.

Englishman, interested especially in the pleasure-giving things of life, would be attracted either to the town or its people or find himself in sympathy with its ambition or their aspirations, which he would be apt to find of the sort common to all new communities. In a restricted sense anybody, and everybody capable of being interested in anything would find much that is fascinating within the town. The traveller and observer, the builder and the artist would all note local peculiarities, pleasant and otherwise



[Photo. by T. Kaye.]

Mr. Thomas C. Young.



The Crystal Palace: Column and Girder System.

of 24 ft., the distance from centre to centre of the supporting columns. The nave and transept, with their aisles, were three stories in height, while on either side were two-storied portions 72 ft. in width, containing galleries at 23 ft. above the floor-level, and outside these, again, a one-storied portion of the same width. The nave and aisles were roofed on the ridge and furrow principle, while the transept had a semicircular roof.

Here it will not be out of place to describe the component parts of the structure, which may be seen to-day at Sydenham, as sound as they left the moulds. The columns, of cast-iron, have a uniform diameter of 8 in., the thickness varying from ½ in. to 1½ in., proportioned to the areas of roofing to be supported. The sectional area is increased by four fillets. Between these four snugs are cast at top and bottom. Each pair of columns is connected vertically by



The "Studio Building" for the Union Dairy Company, St. Louis.

Messrs. Eames & Young, Architects.

which could not be duplicated anywhere else on earth.

To the first-mentioned its position on the map alone would be interesting. Its location on the Mississippi River a few miles south of its confluence with the Missouri, "four or five hundred miles from anywhere," it appears to be, as indeed it was for many years "the jumping-off place" from civilisation into "the wild and woolly west" which lay between the Mississippi and the Rocky Mountains. Without knowing it, one would suspect it to be the great trading camp, manufacturing outpost, and storehouse for all that vast territory—at least south of of the Missouri. The "wild and woolly" is rapidly disappearing before the march of civilisation, but St. Louis remains, as one would have expected to find it, the emporium of the south-west, bearing a great many scars of the battle between enlightenment and brute instinct—a battle still in progress, but with the result settled. French names to many of the streets and places, the Carnival Procession of the Veiled Prophet, the existence of an old French aristocracy speak of its early history under the Bourbon kings of France, and add to its life an interest that is shared only by the other old French towns—New Orleans and Detroit—in America. The existence of numerous beer-gardens, beer-cellars, underground restaurants, colossal breweries, and the generally hospitable, good-nature of the inhabitants is probably due principally to the large German element of the population, but, as regards the institutions, assisted by the hot climate of the place.

It is the climate which is the *clou* of St. Louis. Sunshine rules during nine or ten months of the year. Floods, flies, mosquitos, malaria, and slight earthquakes have a tendency to keep things moving; but they are mere diversions from business that are regarded as small cause for perturbation by the inhabitants. Storms and cyclones have played a fairly conspicuous part in the town's history, and have left here and there their own memorials. The two or three months of winter are even more depressing than the corresponding period in London or Lancashire. There are the fogs and damp cold that characterise the English winters, and though the fogs are less frequent the cold is much more intense than it ever becomes in these islands. Another discomfiture to pedestrians in the streets in the business districts is the mixture of soot, snow, and sand brought to the consistency of thick "grout" by the melting effect of steam-pipes under the pavements or "side-walks."

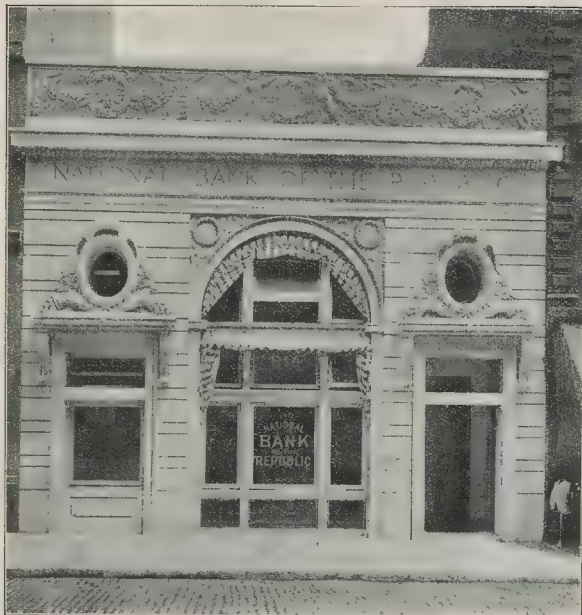
From the pictorial and constructive points of view the objects of greatest interest are the big bridges over the Mississippi, the quays, the shipping, the enormous railway

yards—not because they are greater than individual cases at other large towns, but because they are so much under one's eye—and the magnitude and modernity of the buildings in connexion with the railways and the other newer buildings—especially the warehouses—throughout the town. Bigness and activity in the bright sunshine are the summary of the local characteristics which form the background to any subject with a setting in St. Louis. As to the architecture, it is nearly all very modern. There are probably not more than a half-dozen architectural works antedating thirty years ago in the whole big city. Most of the buildings erected before the Civil War have been either demolished or are too uninteresting to note; those erected after that time, but prior to about 1880, are principally in the "Italian style" of the speculative builder who flourished high and above all "architects" in those days. Early in the eighties

Richardson and Peabody and Stearns—architects from Massachusetts—made the first important breaks in the dull monotony of the streets by erecting a few commercial buildings and houses in the then popular "Romanesque style." About the same time the effects of the Centennial Exhibition (which had been held in Philadelphia in 1876) began to be felt as far west as St. Louis. The people sought the assistance of architects to design their homes instead of buying at exorbitant prices from the speculators. Commercial buildings which had long been the field of either the mere contractor or of the "engineer" were given over to the better instructed men who could arrange a plan and invent new methods of construction, who desired also to make their buildings expressive of and suitable to their purpose, and who called themselves "architects."

The popular understanding as to what an "architect" might be was extremely vague; no business man would have employed one as an "artist"—an "artist" being supposed to be a long-haired, more or less obscene sort of fool, "a sissy man," a sexless creature commonly spoken of as "that ass."

The client was accustomed to dictate his wants to a builder, and when he "employed" an architect he went about his business in the same way; he gave instructions that he wanted a "brick" house, or "rock-faced stone" one; and it was left to the architect to understand that he wanted windows that could be cleaned, that could be "looked out of," and for the purpose, otherwise, of letting light into the room. When it came to warehouses and office buildings, it was upon the architects' ability to satisfy his very practical wants that "architects" rose in his estimation and became something more than mere "engineers"—who had a "lot of book learning but no sense." He discovered, too, that the buildings the "new-fangled" architects built "looked like" whatever they were—negatively speaking, a warehouse did not look like a factory nor a factory like a church. They contrived to put elevators into the building without "blocking up the passageways"; introduced "mail chutes,"



Bank Buildings, St. Louis.

Messrs. Eames & Young, Architects.

"electric fans," and "fly screens"; and knew "the value of every square foot" of floor space; they got rooms the right height and depth, and corridors which "looked clean without looking like a cold storage room"; and, besides all this, they made "pretty pictures" of the rooms or buildings, and "hired an artist to do the painting," or if the architect could himself "do the painting," he would probably be praised as having "done it as well as an artist could."

Such a *clientele*, irksome as it must inevitably become to the architect of artistic temperament, is not without compensating characteristics in other respects. It recognises the many qualities above mere refinement; it discriminates between expert and merely professional opinions; its decisions favour good judgment in all things, as far as its understanding enables it to come to any conclusions. To the people of the State of Missouri, who pride themselves on their incredulity, one votes especial credit for their desire to be "shown," in order that they may know. "I'm from Missouri—you must show me," is an expression which is like a gin-fizz—it is all froth at the top, but there is substance below. It took a long time to convince them that art is an object in itself worthy of the attention of everybody, and the true appreciation of it a hall-mark of the most distinguished intelligence. Very little, if anything, had been done by way of educating the public in architecture before the year 1885, when William Sylvester Eames and Thomas Crane Young entered into partnership to practise that profession and study that art in the city of St. Louis; therefore it fell to their lot to become the pioneers of architectural art in the "Great South-West," and by their works to educate a people to the point of grasping their own higher ideals.

Their earliest work, consisting principally of private residences, showed the influences successively of Richardson and Hunt, and later, immediately after the Columbian Exposition of 1892, of McKim, Mead, &

White. But in whatever style they worked everything they designed possessed qualities of its own. It harked back to good precedent, but was none the less distinctly modern and peculiarly suited to the essential requirements created by the St. Louis climate. In a short time they had established a style which was recognised as "St. Louis architecture," which became at once the object of "the sincerest form of flattery" and vituperation on the part of such "contemporaries" as the town afforded them.

The Studio Building, the Bank of the Republic, the house of Mr. W. H. Thornburg, and the Gate Lodges to Westmoreland-place were among the earliest examples of

Italian Renaissance influence in the United States. The style may have been suggested by the success of the Villard House in New York (designed by J. Morrell Wells, McKim, Mead, & White), but the adaptation was wholly peculiar to the climatic and social conditions of St. Louis, and the buildings remain among the most individual and satisfying architectural works in the city.

With the Classic and Renaissance work in England Messrs. Eames & Young had indicated their sympathy in several designs as the first building of the Lincoln Trust Company, the Chapman residence in Vander-platz, two large houses in Washington-terrace, the houses of George L. Allen and D. R. Francis, and the banking house of the Mississippi Valley Trust Company. The corner treatment of the latter immediately reminds one of the similar arrangement at the Bank of England, but a comparison shows also the interesting dissimilarities and considerable originality of the design as a whole. It was among the few Classic designs erected just prior to the Chicago Exposition.

The great group of buildings known as Cupples Station—a vast assemblage of well-planned, excellently organised freight warehouses in connexion with the railways—was the first very extensive work of Messrs. Eames & Young, and extended their practice to one of the first magnitude in America. It shows traces of the influence of the work of Richardson, but in point of simplicity and sobriety, and in suitability to purpose, it is better than anything carried out by that redoubtable genius. The general excellence and thoroughness of these buildings gained for the firm the confidence and esteem of the leading business men of the city and a permanent place among the best of their *confères*. A large number of important commissions followed, especially warehouses, shops, and office buildings. Nearly every important street in St. Louis contains some huge monument to their designing skill, in some cases to their engineering rather than strictly architectural work. Some of their high buildings are among the best of the kind to be found anywhere in the United States, such as the Union Trust Building, Liggett Building and Wright Building. Their practice, now second only to that of Mr. Burnham in the "West," has extended to various parts of the country. A very large hotel at Seattle, Washington, the military prison at Leavenworth, Kansas, the Fine Arts Building at the Omaha (Nebraska) Exposition of 1898, the Custom House at San Francisco



Cupples Station, St. Louis. Three of the Buildings.

Messrs. Eames & Young, Architects.



One of the Cupples Warehouses.

Messrs. Eames & Young, Architects.



Residence of Mr. W. H. Thornburg, St. Louis.

Messrs. Eames & Young, Architects.



THE PLACE OF THE STUDY OF BUILDING CONSTRUCTION IN ARCHITECTURAL EDUCATION.

THE opening meeting of the Architectural Association, Session 1911-12, was held at 18, Tufon-street, on September 25, when Professor Beresford Pite gave the following address:—

"The history of architecture is that of building construction, the means being involved in the consideration of the end attained. The two elements of architecture, the purport of the building, which involves the civilisation of the race, and the æsthetic ideal and traditions of the builders both finding embodied expression in construction. A genuine architecture has neither of these two elements singly, as it cannot be without purpose or beauty; but it involves their combination under the conditions of the science of building, and, despite the tendency of books of modern architectural history to concentrate attention on religious, civic, or domestic habit, or upon a commerce in traditional architectural forms, the building construction of man in different countries and ages is the field of the true study of architectural history.

The elements of architecture are not really capable of a practical dissociation, though possibly of separate analysis. It would be difficult in any historical review of buildings to eliminate architectural from non-architectural examples, and this is the problem of separating the study of architecture from that of construction. In different eras, and with races in varying measure, the æsthetic or the constructive faculty has predominated. The great era of Grecian art stands for the former, as that of Roman ascendancy does for the latter; but to some extent both are always present, being interdependent, and they act and react as stimulants to the production of fresh architectural developments.

Many instances might be cited to illustrate

the necessity of allowing that good building and good art are the same; the quality is properly common to both, admirable construction having beauty in building as well as in other workmanships. Construction as an art, in entablatures, domes, vaultings, arcades, roofs, staircases, and joinery, offers abundant examples which do not permit the disintegration of artistic effect from constructive skill; both elements are practically in operation, and we can only describe the result as beautiful building construction.

Architecture as a constructive art offers a healthy sphere for a new enthusiasm. Ancient buildings will awaken it in those to whom the glamour of antiquity is golden, while others, to whom the practical aspects of modern life appeal more strongly, will find an incentive in the constant development of new requirements of plan and the adjustment by invention and experiment of materials and workmanship.

We shall perceive in the practical application of a definition of architectural beauty, based upon beautiful construction that ancient and modern builders alike, when working with devotion, produced results which are satisfying. We shall then enter into a sympathetic union of aspiration (which perhaps may be a new experience) in finding that buildings are the expression of earnest life, and in the revelation of a fresh harmony of thought we shall discover one of the secrets of the mystery of art.

Intelligent antiquarianism and a sympathetic practicality of mind are each valuable as a standpoint for the architectural student, and both are necessary to a helpful consideration of the many branches of study included in building construction. The pursuit of the most prosaic and apparently unattractive of the building crafts is not successfully carried to the point at which the student becomes first a master and then a creator by merely picking up the latest threads of practice, contented to learn just how the thing is now done in order only to employ a process to attain a result. Building art is not such tame science as this. In every work which issues into real architecture there is scope for earnest investigation of the motives of derivation, and in the pursuit of such studies lie the incentives to further new development or design.

It will be evident, if material and workmanship may be assumed, in any view of the art of architecture and form only considered, that the scenic make-up in stucco of an architectural Order or style is a result equivalent to the original construction as an expression of art. The study of form and proportion in an academic classic method, or by the so-called historic periods, which ignore the constructive craftsmanship of building art, is delusive and harmful. Translated forms in any rearrangement, "freshly designed" maybe, are as empty and vague of meaning as the decorative inscriptions composed of disjointed sentences from the Koran employed in Mahomedan building. Unhappily, a knowledge of the forms of architecture and a knowledge of modern building construction, each separately studied, are to a great extent the staple of present-day studies, examination, and practice, and to this imperfect method of education much of the superficiality of design and construction in modern architecture may be justly imputed.

The sense that the architect of a particular building was emphatically the master of his work, rather than the unwilling slave of intractable materials and awkward conditions, is so rarely conveyed to the mind by a modern erection other than a simple work of engineering, that the conclusion is enforced that many architects have no genuine enjoyment in their handling of the building crafts, and are unable from want of properly-directed study to express any appreciation of the means they employ to attain their ends in their work.

To the architectural student the remedy for this weakness does not lie in devotion to a new style of architecture, but in a new style of building; not in a fresh revision from licence in form to austerity, or in a craze for individualistic ornament. The remedy is a complete recognition of the artistic value of thorough knowledge and direct purpose in construction. "In quietness and confidence shall be your strength—but ye would not." Genuine interest will be found in the quality of each craft or trade, and the unaffected employment of each for its

D)

(won in competition), and the Rosenberg Library at Galveston, Texas (also won in competition) are among the more interesting of such works. The most ambitious and monumental projects undertaken by Messrs. Eames & Young include the improvements made at the Union Station at St. Louis to accommodate the visitors to the great Exposition, the Education Building at the Louisiana Purchase Exposition—one of the most dignified buildings in the group; the designs placed second in the competitions for the West Point Military Academy and for the Indianapolis Post Office and United States Court House; and their studies for the improvements of Lindell Boulevard and the Park View Realty Tract near the grounds of the Exposition, which is a town-planning problem developed in 1903, comprising a group of 125 hotels and apartment houses, all of which were so planned that every room in every building overlooked a garden.

Both members of the firm were born in the State of Michigan and studied at Boston, Massachusetts, and also travelled and studied in Europe, Mr. Young having been a pupil of M. Daumet at the Ecole des Beaux-Arts, Paris. Both have long been prominent workers in the upbuilding of the American Institute of Architects. Mr. Eames was a Director and Vice-President for two years, and was twice elected, in 1904 and 1905, President of the American Institute of Architects. Mr. Young has served on several committees and as Auditor to the Institute. During the terms of his presidency of the American Institute of Architects Mr. Eames was largely instrumental in bringing about an amicable understanding between the United States Government and the professional architects between which friction had occurred as regards amount of fees and also to the demands of the latter that Government buildings should be designed by responsible architects, not by Government employees. Another important office which came into his care was the purchase and maintenance of the Octagon House at Washington, which is now the official home of the Institute. It is fully paid for and free of any encumbrance.

An illustration of the Realty Improvement Scheme, St. Louis, appears on p. 363, and other examples of the work of Messrs. Eames & Young are shown on our plates.

THE OFFICE OF THE PUBLIC TRUSTEE.

The increasing business which is falling to the Public Trustee has necessitated new accommodation for the staff of the department, and, pending the erection of the building in Sardinia-street, temporary rooms are to be provided in a wood and iron building to be placed on the lawn of Clement's Inn.

native or innate beauty and interest will replace superficiality, and a sense of texture in material and suitability in form will follow. Brickwork can be beautiful both as material and workmanship, stonework in adaptability and freedom of treatment, slating in pattern and quality, carpentry framings and joinery in direct expression of construction.

Full acquaintance with the nature and uses of the materials for which he has to prepare designs, or more exactly in which he designs, is of fundamental importance to an architect. A slight general acquaintance will not be sufficient to ensure the technical sympathy which is recognisable so seldom, but is of such value. A certain knowledge that does not mistake the quality and peculiar beauty of each material is needed, so that the problem of the design may ally itself directly with the medium of its construction. This harmony, having very much to do with architectural beauty, sound and ingenious construction, will be quite readily seen to have intimate connexion with a right and sympathetic use of material. Constructive skill in unsuitable and unlovely material is as inharmonious as beautiful form badly constructed in a fine material. The art which employs materials successfully in building is as real as that which constructs with permanence and economy. Without construction, building is impossible; but unless exercised in suitable materials, with a proper sense of their nature and serviceableness, fine architecture is equally unattainable.

The study of materials is primary to the architect, then the study of construction and purpose, followed by such æsthetic considerations as have not been evolved in their progress through an artistic mind. The impressiveness, which is architectural, in the Temple of the Sphinx has its main sources in these three primary streams; they here combine in a building that owes nothing to what is commonly regarded as architectural detail or to æsthetic considerations. Dignity, fitness, and security are expressed alike by the material, construction, and arrangement.

Material, though a constructive element, has, however, an æsthetic quality if it governs, as it should, the genesis of the detailed form. It imparts the quality of texture, so little understood in English practice. The general tendency here is to confuse it with the decorative values of materials, which lie solely in their superficial colour or polish. The æsthetic value of a building material, however commonplace its nature, is to be expressed by its use and workmanship, form deriving character from its natural qualities; and without this æsthetic expression of the texture of material the finer effects of architecture cannot be realised. Into the appreciation of building texture costliness or intrinsic beauty, such as that of marbles, veneers, or of colour veinings or contrasts of richness, do not enter; this decorative aspect of building materials has little to do with the essence of architecture, though one of the first among those many accessories conveniently described as "handmaids." The same considerations which govern the decorative painting of interiors apply generally to the use of materials for their colour or superficial value. Though the student of building construction can be safely advised not to concern himself with these for a while, he cannot undertake as an architect the sympathetic study of materials, for the purpose of designing with them, with no other sense of texture than that which recognises the similarity of red Mansfield stone with red brick, and employs them in juxtaposition to express their common red characteristics. A true perception of texture as a constructive and artistic quality will endow the use of our ordinary building materials, whether employed in important, and great works or in such humbler things as warehouses, cottages, or even garden walls, with direct interest and beauty. The student may assure himself that, if the texture of each material and its related craft is thoroughly comprehended he will have at hand a fountain of simple beauty which will give new vigour to design, and which will, besides, place for him the study of ornament upon a new and vital basis. Pseudo-architectural forms which are lifeless apart from their original purpose and material will be replaced by the new stimulus of seeking to express the possibilities and quality of the modern material in his hands.

Will beauty of form, however, attend upon beautiful building construction? It will be fairly obvious to a generation such as ours, reared into a general sense of architectural fitness by education in the mixed particulars of illogical standards of taste, that it will not be so. As a matter of course, to such any beautiful architectural forms must be derived from some extraneous source and applied to the building, as it would be impossible, for a dilettante, to conceive of building construction as otherwise than Philistine and ugly.

If this prevalent view is correct and to be maintained by education, we must have a new term for beauty in architecture, beautiful architecture and beautiful building not being identical and not necessarily connected. It is a consequence of this prevalent view that building construction books and those on architectural history proper have dealt with apparently different subjects, the former with the matter-of-fact necessities of building, and the latter with the forms which impart architectural beauty. This conclusion, I fear, represents the state of the case in the minds of present-day authorities; the grouping of subjects and books, schemes of architectural examination and of education leading thereto seem to have as their basis the segregation of the arts of design from the practice of construction. The student is expected to sort himself either as a constructor or artist, and nourish his bent accordingly, and in either compartment he is secure from becoming a great architect.

A definition which seeks for intellectual expression in building construction as the secret of true architectural beauty will almost satisfy the inquiry as to the relation of beauty of form to building art. Refinement and adornment follow upon this premise, and it need not be considered that the bare requirements of an enclosing construction is all the building art allows. The Great Pyramid, the Parthenon, the Pantheon, a mediæval vaulted cathedral, or a Renaissance dome each exemplify the operation of trained intellect on constructive problems.

It would be an affection to suggest that books or lectures dealing practically with the needs of a student of building could impart the art of architecture, but it should be claimed that the student of construction should discern the elements of architectural beauty in that subject, just as in the study of beautiful buildings they should be attracted to their fundamentally architectural construction.

The purport of this introductory address is fulfilled in pointing out that the studies of the architectural student should concentrate upon the motives and materials of construction as true sources of varied streams of interest and beauty. Apart from passing fashions, these make architecture permanently effective. Underlying my purpose has been the hope of linking ancient reference with present practice by a linked study of historical buildings, in order to avoid such a concentration of attention on modern use in construction as would relegate precedent to what would improperly be called the artistic side of the architecture. A very narrow view of artistic architecture only would either profess disregard for the modern sense in construction or the ancient in form; the true view equally observes both in each; the artistic architect and the practical builder are not properly separate entities or corporations.

This basis of study is the ideal for the architect; to illustrate and prove it would be easier from the standpoint of a review of past works of architecture than of the means now at hand of achieving fresh ones, but the present is the most living force with which the student will have to engage, and modern architecture having nothing wherewith to express herself but building construction, to us the more necessary study shall have the more abundant comeliness.

Of other forces, of the power of the past, of the aspirations of pure artists who were not constructors, we may be led to speak later in dealing with the historical progression of building experiment.

A DECEASED BUILDER'S ESTATE.

The late Mr. Joseph Waterhouse, of Keighley, builder and contractor, formerly mayor and alderman of the borough, has left estate valued at 40,583*l*.

ARCHITECTURAL SOCIETIES.

The Northern Architectural Association Visits to Stella Hall and Axwell Hall.

An interesting outing arranged in connexion with the Northern Architectural Association was held on Saturday afternoon, when members paid a visit to Stella Hall, the residence of Mr. Joseph Cowen. The party were met at Stella Hall by Mr. Joseph and Miss Cowen, who conducted their visitors over the historic building and explained many features of interest. Mr. Cowen explained that Stella Hall was a religious house in the time of Edward the Confessor, but there were no authentic data until about 140, when the hall was graced by the Bishop of Durham to the nuns of St. Bartholomew, who had a nunnery in Newcastle. Stella Hall remained a nunnery until the time of Henry VIII., after which it passed into the hands of the Tempest family. Lord Widdrington subsequently became the possessor, and later the Townleys, from whom it was at present leased. Stella Hall was still in the form of a cross. The last material alteration made to the building was executed by Mr. John Dobson over forty years ago. The party afterwards drove to Axwell Hall, which was erected about 100 years ago from the designs of the late Mr. James Paine.

GENERAL NEWS.

Professional Announcements.

Mr. W. H. Ward, A.R.I.B.A., has removed from 28, Theobald's-road, to 2, Bedford-square, W.C.

Mr. Campbell Jones, F.R.I.B.A., who has for many years carried on his practice at 32, Bedford-row, W.C., has moved to Skinner's Hall, 9, Dowgate-hill, Cannon-street, E.C.

Orme-square, Bayswater.

This freehold property, now offered for sale, consists of twelve houses, around three sides of a garden, whose estimated rentals amount to nearly 2,600*l*. per annum; the area extends to 73,340 ft. super., with frontages to Bark-park and St. Petersburg-place, and one of 281 ft., on the open side, to Bayswater-hill. The pleasant retreat and garden, one of the last after its kind in the town, was laid out on the site of one of the Kensington gravel pits in 1815 by Edward Orme, who built the houses, together with one for his own occupation, at irregular intervals. Orme, a descendant of the old Cheshire family, was print-seller to George III. and the Prince Regent, trading in New Bond-street. He bought the land, and also built Bayswater Chapel-of-ease.

—now St. Matthew's Church—in St. Petersburg-place, Nos. 1 and 2 in the square were the homes respectively of Sir Rowland Hill and Frederick (Lord) Leighton.

Victoria and Albert Museum.

In his report for 1909 and 1910 Sir Cecil H. Smith, Director and Secretary, refers to the great increase of the prices realised by works of art in recent years, which, he says, renders the problem of acquisition by purchase one of serious moment; the inflation of auction-room prices practically leaves public institutions, with their strictly limited means, deprived of any chance of success in open competition. There were 718,921 visitors to the Museum in 1909, and 967,592 in 1910, including 98,368 and 138,071 on Sundays respectively.

Rebuilding of Messina.

The new rules for the rebuilding of Messina permit the adoption of various systems of construction with the proviso that every building shall have a frame of iron, timber, or reinforced concrete; but frames may be dispensed with for masonry buildings of only one floor not more than 5 m. high and with walls whose thickness is not less than one-eighth of their height. Cornices and balconies must not project from walls more than 40 cm., and 60 cm. respectively; terraces and roofs must not be heavier than 50 kg. and 45 kg. per square metre; cast-iron for columns and general structural work is prohibited. The height of the houses must not exceed the width—a minimum of 10 m. or 8 m.—of the street; buildings must not be higher than 10 m. to the eaves, though for churches and public buildings the limit is

6 m. A sum of two millions will be expended upon the Government buildings, for which are to be used masonry blocks and lime and pozzolana from Bacoli, with steel framework. The plans comprise improvements of the harbour and extension of the sea-front and road 100 m. wide alongside of the quays.

Ashton, Northants.

Mr. Charles de Rothschild, of Ashton Hall, near Oundle, has in effect rebuilt the village by replacing all the old thatched cottages with substantial buildings of stone, in pairs, with gardens all round them. The cottages are let to the labourers on the farms and state at a rent of 1s. 1d. per week. Each has two ground floor rooms and three bedrooms above; the front living-room is large and well lighted, and fitted with a cooking range, beyond is another room with a second range and a hot-water bath.

Australia and the Island Site, Aldwyck.

The Parliament in Melbourne will in a few days hence have before them the project for purchasing the island site in Aldwyck for the new offices of the Australian Commonwealth and the six States. It is understood that the London County Council will part with the freehold of the land, and that the scheme will involve a total outlay estimated at some 50,000. The entire site at disposal covers an area of 24,360 ft. super, inclusively of the leasehold portion on which now stand the offices of the Victorian Government.

St. Albans Abbey Church.

The project for the substitution in St. Albans Abbey Church of a stone groined roof to the north aisle for the plain oak roof that now covers it has been placed before Mr. J. Oldrid Scott, who has prepared plans and drawings and an estimate amounting to 5,000. has been given.

Art in the Borough.

At the Borough Polytechnic, where the pavement is being rebuilt, an interesting experiment in decoration is to be seen. One of the large ground-floor rooms, used chiefly for recreation purposes, has been taken in hand by a band of artists and decorated. That is to say, the walls have been covered with a series of seven paintings representing a spirit of modernity some of the pastimes of young Londoners. There is a strong Post-impressionist flavour in the scheme, due, of course, to the influence of Mr. Roger E. Fry, under whose direction the work has been done. The intention of the series is humorous, and, apart from the technique, there is considerable attractiveness in the compositions. Mr. Fry himself contributes a panel, skillfully designed for its position, in which the measures of elephant riding are suggested without a visit to the Zoo. Mr. Albert Johnston shows us a seaside idyll, and Mr. Duncan Grant, with some originality and considerable decorative charm, gives a pictorial demonstration of swimming. Mr. Max Gill portrays a "Punch and Judy" show. The most amusing of all, however, is Mr. F. Etchell's view of social life on Hampstead Heath—a Bank Holiday aspect.

The colour scheme of the series is gay, and we are not altogether enamoured of some of the designs, there is an enlivening touch throughout the compositions. Painted in flat tints, and executed in a few weeks at a total cost of 100., these mural decorations, if not in accordance with the accepted traditions of decorative art, will serve the purpose of the institution, which is to brighten the thoughts of the people.

Church Extension in Cleveland.

The committee appointed by the Archbishop of York to report on the needs of the Church in Middlesbrough and Cleveland considered that the following sums were urgently required—towards the payment of existing debts, 4,961.; towards the provision of sites, 3,772.; for the erection of mission churches, 4,550.; for the erection of parish halls, 2,650.; for the erection of parsonage houses, 1,600.—16,058. Other schemes—not so urgent as the above, but, in the opinion of the committee, necessary—will involve an expenditure of an additional 4,000. at least. The Archbishop has felt himself justified in issuing an appeal for 20,000., substantial contributions to which have been received already.

The House of Commons.

A new system of drainage is being placed in the House of Commons under the direction of the Office of Works. It is expected that the work will be completed before the re-assembly of Parliament.

An Open-air Bath, Cardiff.

Adlerman John Chappell, presiding over the Cardiff Parks Committee, introduced the question of an open-air bath at Llandaff Fields. He suggested that the scheme be taken in hand without delay, and that shrubs be planted on its slopes, so that a revenue might be secured from bathers next year. There had been serious congestion at Roath Park Lake bathing boxes this year, and although 44,000 people had passed through the turnstiles, hundreds of people had to be turned away. He dared to say that 80,000 persons had been bathing in dangerous places during the same period. In order to relieve the congestion he advocated the provision of an open-air bath in Llandaff Fields.

Bishopsgate Institute.

The Institute, whose enlarged reference library will be reopened in the course of October by Lord Rosebery, has been enriched by the acquisition of the library of the late Mr. George Howell, M.P., comprising some 6,000 volumes on social and economic questions, purchased by his friends at a price of 1,000., an offer to buy them having been made from America. The Institute library, we may mention, possesses an unusually large and varied collection of works upon the history and topography of London.

Travelling Facilities to Tooting.

It is hoped by residents in Lower Tooting that new means of transit may be established to supplement the existing tramway service. It is suggested that the City and South London tube, which now ends at Clapham Common, should be extended to Balham, Tooting, and perhaps to Wimbledon. Another idea is that the London, Brighton, and South Coast Railway should build a station at Merton Bridge and increase the railway facilities.

A Glasgow Fire.

It has been widely stated that the warehouses of the Scottish Wholesale Co-operative Society in Glasgow, which were partially destroyed early this month, were built from designs placed second in the competition in 1882 for the Municipal Buildings. This is an error. Messrs. Bruce & Hay were the architects of the damaged warehouse, while the firm placed second in the Municipal Buildings competition, won by the late William Young, were Messrs. Hall & Taylor, of London.

The Ordnance and Geological Surveys Report for 1910.

The Director-General has just issued his report for last year. A special revision to facilitate the valuation of land is being made, and in advance of their normal turn, of the maps of those areas around towns where the details have been greatly changed during recent years. No maps are now produced at the nation's cost to a scale greater than 25 in. to the mile; the old town maps to scales of 5 ft. or 10 ft. to the mile are revised by the Survey at a charge of from 15s. to 20s. per acre. All the 6-in. and 25-in. maps are printed from photographic zinc plates. The coloured 1-in. maps are lithographed, transfers being taken from the copper plates, graven by hand, used for the 1-in. uncoloured maps. On the geological side a large portion of the kingdom is mapped to the 6-in. scale, and maps of the whole country are made to scales of 1 mile, 4 miles, and 25 miles to the inch; the explorations below surface are carried out by the Geological Survey, in three parties of six geologists, with collectors of fossils, and photographers, apiece. The maps are plotted and printed by the Ordnance Survey, who use, for the most part, colour printing in yellow, blue, and red—six inks yielding some 900 tints. The census-taking in the current year, the Wreck Register, the transfer of the telephone service of the National Company to the State, and the land-tax schemes of the Government have greatly increased the demands upon the work and output at Southampton.

The Stort River Navigation and Lea Conservancy.

The Lea Conservancy Board have ratified their purchase from Sir Walter Glibbe of the Stort River Navigation, which, as the River Stort, separates Essex from Hertfordshire. The Navigation extends from Bishop's Stortford into the Lea, and enters the Thames by way of the Lea Cut from Bromley at Limehouse. The water supply is gained chiefly from springs at Elsenham and from small affluents along its course, on which are fifteen locks, 13 ft. 6 in. wide, and from 3 ft. 3 in. to 4 ft. 6 in. deep throughout. The Board intend to repair the locks, banks, and bridges, and to adapt the river for the passage of barges of 65 tons burthen.

Metropolitan Sewage System.

To-morrow (Saturday), at the Stonebridge Outfall Works, Mr. H. Mallaby-Deeley, M.P., will open controlling valves and thus link up the sewers in the Brent area of Willesden with the Metropolitan main drainage system. The ceremony will take place at three o'clock.

University of London: British Museum and Victoria and Albert Museum Lectures.

Mr. Banister Fletcher, F.R.I.B.A., will commence a course of twenty-four University Extension lectures on "Ancient Architecture," at the British Museum (by permission of the trustees), on Tuesday, October 3, at 4.30 p.m. Also a course of twenty-four lectures on "Renaissance Architecture" at the Victoria and Albert Museum (by permission of the Board of Education), on Monday, October 2, at 5 p.m. These courses are to be fully illustrated by lantern slides, photographs, diagrams, and models, while the museums, which seem the natural home for a series of such lectures, abound in ancient and Renaissance examples, which will be visited and explained by the lecturer during the class held at the end of each discourse. Particulars may be obtained from Miss Gaudet, 120, Cheyne-walk, Chelsea, S.W.

University College.

The new session in the Faculties of Arts, Laws, Science, Engineering, etc., at University College will be opened on October 2. On October 12 Mr. E. S. Prior, F.R.I.B.A., will deliver the first of a course of Carpenters' Company lectures upon English medieval architecture.

Central School of Arts and Crafts.

The teaching in the architectural classes in the Central School of Arts and Crafts is arranged to enable students to qualify for the examinations held by the Royal Institute of British Architects and other professional examinations, as well as qualifying for the National Competition, the I.C.C. Art Scholarships, and for admission to the School of the Royal Academy of Arts. The classes are now in progress, the subjects including architectural design and drawing, building construction, structural mechanics, letter cutting in stone, wood carving, ornamental leadwork, ironwork, and bronze casting. Mr. S. B. Caulfield, F.R.I.B.A., Mr. F. H. Mansford, Mr. P. J. Waldiam, and other qualified teachers are associated in the work of instruction. On Wednesday evenings a course of lectures is given from 8.15 to 9.30, the growth of a house being explained. The whole of the details, including site, drainage, hot water supply, etc., will be considered. A Saturday afternoon class will be held from 2.30 to 5 at the Victoria and Albert Museum, where examples of old work will be studied.

School of Art Wood-Carving.

The School of Art Wood-Carving, 39, Thurloe-place, South Kensington, which is under royal patronage, has been reopened after the usual summer vacation, and we are requested to state that some of the free studentships in the evening classes maintained by means of funds granted to the school by the London County Council are vacant. The day classes of the school are held from ten to one and two to five on five days of the week, and from ten to one on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the Secretary.

Northampton Institute, Clerkenwell.

The announcements for the session show that a variety of subjects of practical and theoretical importance may be studied at this polytechnic. In the electrical engineering department the new generating station, which was opened by the Chairman of the London County Council last winter, is now available for the instruction of senior students in both day and evening courses. The equipment of this station is very complete in all details of the generation and distribution of continuous and alternating current. In the mechanical engineering department the equipment for experimental work in aeronautics has been much increased. Various classes are held, in which instruction is given in craftsmanship and other artistic work.

Lectures on Electric Lighting.

Two popular lectures will be given by Mr. Frederic H. Taylor, A.M.Inst.E.E., A.M.Inst.M.E., on "Recent Developments in Electric Lighting and Other Applications of Electricity," on October 4 and 6 next, commencing each evening at 8 p.m. Tickets may be had on application to the Secretary at the Willesden Polytechnic, Priory Park-road, Kilburn, N.W.

The Gas Fire.

The question of heating buildings, domestic and otherwise, has engaged the active attention of architects for many years, and particularly in London—the "city of fogs"—where the damaging effects of the "smoke nuisance" are so manifest, this activity has of late largely been devoted to studying the question from a more scientific aspect than hitherto, i.e., not merely from the point of view of obtaining heat and that only, but of obtaining it in its most convenient and hygienic form. Of late years, in this country especially, where the vagaries of the climate have been so marked at all seasons of the year, the coal fire has to some extent fallen out of favour, for the simple reason that it is not possible to adapt that means of heating to the varying temperatures to which we are subjected, and, as a consequence, a system of heating that is always instantly at the will of the user is becoming more widely known and adopted day by day. We refer to the gas fire. This means of heating has found a good deal of favour with those who are in a position to appreciate the advantages to be gained thereby. The work that the largest metropolitan gas company have undertaken in offering to architects the free fixing of gas fires for a trial period may induce members of the profession who have not had personal experience of modern gas heating to take this opportunity to study the subject more closely. If they do, it may lead to their advising the still wider adoption of this system of heating.

Nottingham Building Society.

After the fifty-seventh annual meeting of the Nottingham and Midland Counties Permanent Building Society, held a few days ago, it was decided that in future the title of the association should be the "Midland Counties Permanent Building Society."

A GATE AT HATFIELD.

Our illustration presents a gate in the gardens of Hatfield, to which our attention has been called by Mr. Robert Falconer. The measured drawing is by Mr. J. Starkie Gardner. It was brought to its present position from a neighbouring park, and the initials are those of a baronet, who died before 1689. Its interest lies in the fact that it was produced before the Frenchman Tijou's work so profoundly influenced the art of ironworking in England, there being many reasons for believing that he was not here before the arrival of William and Mary. These are set out at length in Mr. Starkie Gardner's forthcoming book, which not only deals exhaustively with the work of Tijou, but also with that of his successors, as well as with that of his purely English rivals, whose names even have hitherto been unknown to us.

Notwithstanding all researches, the real fashion of the richly-worked iron gates of Charles and James II., mentioned by contemporary writers, remains quite unknown. The gates before us, though naive in design, present many of the characteristics of the later English school, which developed side by side

with Tijou's richer and more florid style. They may even show that he was perhaps not so wholly uninfluenced by the ironwork he found in England on his arrival, as hitherto supposed, but this, however, opens up a question which cannot as yet be profitably discussed.

COMPETITION NEWS.**Library at Clydebank.**

The designs of the fifteen architects chosen to compete in the competition for the Carnegie public library at Clydebank have been considered by the assessor, Mr. James Miller, A.R.S.A., who has awarded the first premium (50%) to Messrs. A. McInnes Gardner and Robert Whyte, the second premium (30%) to Messrs. Stewart and Paterson, and the third premium (25%) to Mr. Charles Menart, all practising in Glasgow.

Düsseldorfer Extension.

On p. 365 full reference is made to this competition, which is open until next July.

Cottage Hospital, Skegness.

In this competition Mr. Ernest R. Sutton, F.R.I.B.A., of Nottingham, was the assessor, and he has awarded the premium (15l. 15s.) to Mr. F. J. Parkinson, of Blackburn. Messrs. Moore & Archibald, of Middlesbrough, and Mr. Josiah Auty, A.R.I.B.A., of Morley, were placed second and third respectively.

BOOKS.

English House Design. By ERNEST WILLMOTT, F.R.I.B.A. (London: B. T. Batsford, 94, High Holborn. Price 10s. 6d. net.)

If architects generally have had some reason to complain of a lack of public appreciation and recognition, and have felt, at times the disheartening sensation of playing to empty houses, at any rate the designers of domestic work are not without encouragement. For

them the house is always full and the applause spontaneous and generous if, as might be expected, a little indiscriminate at times.

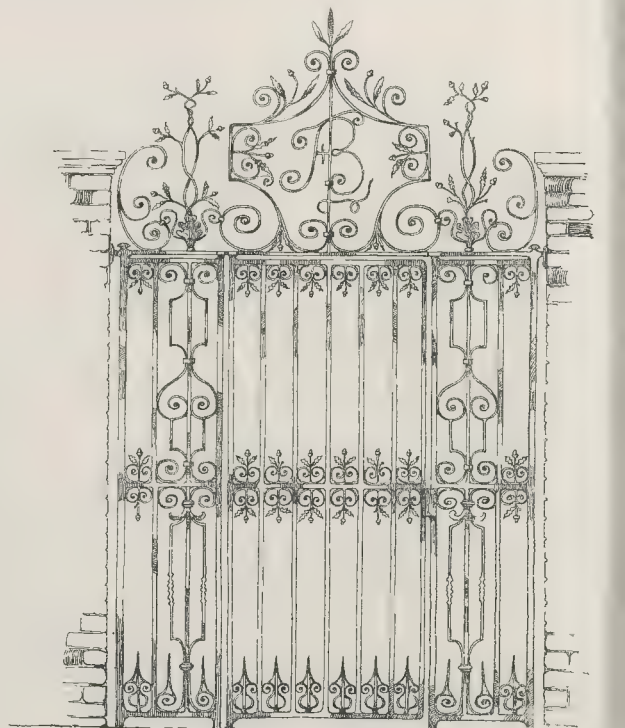
This widespread and increasing public interest is responsible for the making of many books, and the very fact that there are many has prompted Mr. Ernest Willmott to write another. It occurred to him that might be helpful if the material already collected could be "sifted and collated" in a form which would enable those who have little technical or historic knowledge of English domestic architecture to appreciate the character of its modern tendencies and to understand something of the principles upon which the design that is best in them is based.

The method adopted is to state briefly a few general principles to which all good design should conform, and then to note the application to the examples—both ancient and modern—chosen for illustration.

In order to define and explain the position in English architecture of the examples cited, the author has found it desirable to deal with them historically. A most interesting chapter reviews such questions as development of the old English house, arrival of the Renaissance, the fusion of old methods and the new motives, and survival of the earlier traditions in the smaller houses. The next chapter deals with Revival, illustrated by the work of Philip Webb, Bodley and Garner, and B. Norman Shaw, and leads to a selection of contemporary designs which appears to be fairly representative.

The book is intended to appeal not only to the architect, but to all those who, taking general interest in the subject, wish to know more about it and to reconcile their taste with their understanding.

We welcome this timely and admirable attempt to effect this reconciliation most heartily, for it may be confessed that many of the previous works on English architecture are rather by way of being picture books, which, however useful as books of reference, or as drawing-room talk

**A Gate at Hatfield.**

Measured Drawing by Mr. J. Starkie Gardner.

aments, make little appeal to the understanding.

Although it may be too soon to attempt sum up the whole meaning and effect of the Gothic revival, it seems fairly clear that, at any rate, we owe to it the present recognition of the value of good materials and the need for sound and artistic craftsmanship in using them in a way that is characteristic of their nature. From the author's interesting remarks on texture and quality of surface we gather that the simpler the design the fewer and simpler its features—the more expression of the whole is dependent on quality and the treatment of the materials, whereas in buildings where "purely architectural quality obviously plays a more prominent part," where the features are many and elaborate, the surface texture of the material is no longer of such a vital importance.

If we must find some point to criticise in an interesting book we should be inclined to take exception to parts of Chapter III, particularly to its title—Concerning the Chief Principles of House Design—which we think liable to mislead. These principles we find enumerated as repose, proportion, scale, rhythm, colour, texture, etc.

It is not simply a concern for pendant accuracy of expressions which leads us to say that we should have thought it more accurate to describe them as qualities, not as principles. Qualities inherent in all good designs which are the outcome of the proper application of the right principles of design, but not the principles themselves. Indeed, we notice that the author himself refers to them elsewhere as qualities.

On principles, we take it, is generally understood to be more in the nature of a precept, a code of conduct to be pursued, a course of action to be taken towards a desired end.

Anyone, therefore, who might reasonably expect from the title of this chapter to find principles explained whereby these desirable qualities could be obtained would be to his extent disappointed, for to enumerate qualities of a flower, its form, its colour, its perfume, is not the same thing as to explain the creative principle governing its organic growth. While an exhaustive analysis of the elements of such qualities as proportion and rhythm, and the conditions under which they occur may do something towards



Newton St. Cyres, Crediton, Devonshire.

From Mr. Willmott's "English House Design." (B. T. Batsford.)

helping the student to formulate for himself the principles which govern the organic growth of a building, by means of which the desirable qualities of proportion, rhythm, or repose may be obtained, we cannot help feeling that the author's sense of the impossibility of entering into philosophical discussion may result in giving an impression that he is a little too ready to refer these abstract qualities back to our natural sense of the fitness of things—as if everyone's sense of the fitness of things was always an infallible court of appeal; whereas his readers might welcome some further explanation of the relation between these abstract qualities and the practical requirements of the building, which explanation need not lead us far "into the region of metaphysics."

When, for instance, the author asks, "To what, then, is this quality of repose due?" and proceeds, "This is not an easy question

to answer in a few words. Like human character, it is the cumulative result of many influences. We find this quality in a simple block of old farm buildings where evidently no self-conscious effort has been made to achieve any particular effect, just as we recognise a beauty and strength in the character of many simple folk who are probably totally unconscious of ever having deliberately cultivated a single virtue," it seems to us that he succeeds in a very few words in supplying a good working answer. The repose is there because "no self-conscious effort has been made to achieve any particular effect."

After this suggestive and, as we think, helpful explanation, to be told that "we may not be able to say why it (repose) is there any more than we may be able to say why a certain arrangement of notes produces harmony and another discord," but that the healthy eye recognises it just as the healthy



The Double-Cube Room, Wilton.

From Mr. Willmott's "English House Design." (B. T. Batsford.)



Cottage at Croyde, N. Devon.

From Mr. Willmott's "English House Design." (B. T. Batsford.)

ear recognises harmony, seems to be making rather an unnecessary mystery of it all, which tends to defeat the object of the book, for people are most readily interested in that which they can most easily understand.

When, again, in discussing proportion he imagines a room 8 ft. square and 20 ft. high, and remarks that it is immediately apparent that there is something wrong with that room, that it is too high for its area, it would have been more interesting and useful if he had told us why, and, instead of referring it back to our sense of the fitness of things, had pointed out that the bad proportion is only immediately apparent because we happen to know the nature of the room—a room for domestic use in a private house—and that the lofty proportion is not the natural outcome of the practical requirements of the room, and does not create the internal æsthetic effect which is the characteristic expression of its nature and purpose; and that if we had not known this we should not have been in a position to judge whether the proportion was good or not.

We gather that the author does not wish us to think that there are any fixed or arbitrary rules of proportion equally applicable to interiors of every character, or that it is not possible to imagine an interior to which the proportion of two and a half cubes in height would be appropriate and pleasing to the eye, when it produces the æsthetic expression characteristic of that particular interior.

There also seems a danger in the way the subject is treated that the layman or the student may carry away the idea that such qualities as proportion or rhythm are consciously, or even arbitrarily, applied to satisfy the "spiritual element" after the material element has been provided for, instead of realising that these qualities are the unconscious and inevitable results of the organic growth of a structure that is created by an artist in conformity with principle.

Although the author clearly shows how intimately the quality of proportion is connected with every structural detail of the building, yet he thinks this is the engineer's outlook—the accomplishment of a purpose by the most direct means—and that "it is only after the dictates of constructive propriety and of practical expediency have been satisfied that the element of proportion begins to enter the field of art, and it is in the varying degree of the refinements then exercised that the quality of the artist is discerned."

Making all allowances for the general tendency of its context, this sentence is difficult to follow. On the contrary, it might be considered that the spiritual element of proportion should enter into and govern the design from the first conception of the idea; that its influence on the shapes and heights of each unit helps constructive propriety and practical expediency to express ideas and to satisfy the spiritual element; that its absence may lead to rooms two and a half cubes in height:

and that in the varying degree of the refinements then exercised the quality of the artist is discerned quite as much as in the after refinements of detail, which simply heighten and complete the spiritual satisfaction already obtained by the main structural proportions of the building.

It is impossible, however, within the limits of a review to do justice to every point of principle or method that is raised. That such points are raised is, to us, the chief value of such books. We recommend everyone interested in the subject to read it for himself. It is not too long, it is never dull, and it is profusely illustrated by photographs of good examples.

The Ancient Stained Glass of Exeter Cathedral. By F. DRAKE and J. M. DRAKE. (Exeter: Pollard & Co., Exeter. Price 1s.)

A VALUABLE and detailed account of the stained glass in Exeter Cathedral and its restoration—particularly as regards the choir—is given by this pamphlet, which contains reprints of two papers read before the Exeter Diocesan Architectural Society—the first in 1879, by the late Fred. Drake, who began the restoration, and the second in 1909 by his son, Mr. Fred. Morris Drake, who has continued the work. Much light has been thrown by the research of thirty years on what, at the earlier date, was still obscure in the history of the glass. The great east window, as built about 1300, had six trefoil-headed lights, which were glazed (1508-26) by Master Walker, believed to have come from Rouen, where the glass was bought. In 1539 the window was rebuilt in the Perpendicular manner and with nine lights, and Robert Lyon, of Exeter, was employed to reglaze it. The new lights at the top and in the centre are painted frankly in the style of his day with white instead of flesh-coloured faces and the halos in the same piece, and yellow stain is used in them. But the adaptation of the old lights to their new positions in the sidelights, three on each side, is of special interest. The old glass differed in shape and size from the new openings. The borders were cut to fit the cinquefoil heads as nearly as possible, and the added height had to be filled up by means of new bases and canopies. The former are in the contemporary style, but the latter show the craftsman deliberately archaising—an almost unique occurrence in mediæval art. In order to maintain harmony with the figures he gave their new canopies the rigid design, clumsy outlines, and heavy colouring of Master Walter's work sixty years earlier.

Mr. Drake gives many other interesting notes on the glass of this cathedral, and even has a good word to say for the notorious Peckitt, who carried out a drastic restoration of it about 1750. "For all his sins, glass painters should remember him kindly. He lived in a bad age; he had no access to good material, no one to teach him. In the face

of difficulties innumerable, he actually induced the resurrection of our craft. Although he did his best, in that XVIIIth-century slough of complacent ignorance, to feel his way towards the light. Where he sowed 120 years later, did the reaping, often, I feel with anything but gratitude towards him.

School Planning at Home and Abroad.

W. H. WENDE, Licentiate R.I.B.A. M.R.San.I. With numerous illustrations. (London: The Sanitary Publishing Company, Ltd., Fetter-lane, Fleet-street, E.C. 4. 1s. net.)

At the Twenty-fifth Annual Congress of the Royal Sanitary Institute at Brighton, Mr. Webb read an able paper on "School Planning," which was illustrated by a good many interesting plans of schools, and it is the paper, with the illustrations, which has been published as a booklet. Much of the paper appeared in our pages in our issue of October 1 last, and we are glad to call attention to the publication of it in this form, it should be of interest and value to those engaged in school work.

The Making of a Great Canadian Railway.

By FREDERICK A. TALBOT. With forty-three illustrations and map. (London: Seeley, Service, & Co., Ltd., Great Russell-street. 16s. net.)

THIS is the story, to quote the subsidiary title of the work, "of the search for a discovery of the route, and the construction of the nearly-completed Grand Trunk Pacific Railway from the Atlantic to the Pacific with some account of the hardships and stirring adventures of its constructors in unexplored country"—the pioneer survey, the scientific survey, and the construction. The book is not intended to appeal to the engineer, but to those who are interested in the romantic side of railway building have interests at stake, though there is good deal in the volume that cannot fail to be of interest and value to the young engineer. The chief actor in this history undertaking appears to have been Mr. Charles Melville Hays, the President of the Grand Trunk system, and the author gives detailed information showing the manner in which "an idle thought [by Mr. Hays] evolved into the most stupendous railway constructional enterprise in the history of the iron road. To undertake 3,543 miles of first-class railway as one concrete project represents a colossal task, especially when it is recalled that at the time of its conception the population of the Dominion did not exceed 6,000,000 souls." Though the work is not intended to appeal to the engineer, we must not omit to mention that Mr. B. L. Kelihier is the engineer-in-chief of the Grand Trunk Pacific, Messrs. Foley, Welch & Stewart being the constructional engineers. It was resolved to make the railway a modern one, and the British railways, it is pleasant to note, were taken as "models," "the first cost" to be "the last cost." "The construction of the line was taken in hand in large stretches at a time, ranging in length from 40 to 100 miles or more. At intervals of every two or three miles the constructional camps for a small army of men, horses, and material, while ample supplies of food were stored to meet their requirements for six or nine months. In addition the section was subdivided into divisions ranging up to 12 miles in length, on which resident engineers were stationed. . . . Something like \$100,000, or 20,000,000, were being poured out every day to provide work for over 25,000 men who were engaged in the mighty struggle with rock, muskeg, and forest."

The volume contains a great deal of entertaining matter, including some amusing anecdotes, but we have no space for detailed notice. The author describes the many difficulties of the undertaking—not the least being the muskeg, or bog-swamp—which gives particulars of the Quebec bridge—the bridge before the disaster and the new design—about which readers of the *Builder* are familiar. In the 350 pages of his work, none of which is dull, the author has given an admirable and well-written account of an undertaking which will rank as one of the greatest that Canada has attempted; the undertaking is a great one, and it has been worthily described by Mr. Talbot.



Sunday Morning. By Johannes Bosboom.
(By permission of Messrs. Wallis & Son.)

Selected Pictures by Johannes Bosboom and William Maris. (The French Gallery, 120, Pall Mall.)

This is an illustrated catalogue issued by Messrs. Wallis & Son as a souvenir of the interesting Exhibition held a few months ago, and to which we referred in our issue of May 19, p. 605. Most of the reproductions are Rembrandt photographs, one of the pictures being "Sunday Morning," illustrated in this page. Bosboom had a fine sense of the pictorial qualities of architecture, and possessed draughtsmanship of a rare order.

BOOKS RECEIVED.

THE SEWERAGE OF SEA COAST TOWNS. By Henry C. Adams. (London: Crosby Lockwood & Son. 5s. net.)
HISTORY OF BRIDGE ENGINEERING. By Henry Grattan Tyrrell, C.E. (Published by the author, at Chicago, 1911. \$4.00.)

MAGAZINES AND REVIEWS.

Some illustrations of gilt and leather wall hangings are given in the *Art Journal*, with historical notes. "It is difficult to-day to realise the immense importance in early times of gilt and decorated leather work as applied to wall decoration, for its eclipse during the XVIIIth century was complete, and its manufacture never became a national industry in England. Stamped leather for decoration lost its importance early in the XVIIIth century, and was superseded by painted ornament on leather, which continued in use for a long time for screens." The series of articles in the *Art Journal*, under the title of "Interiors of English Mansions," includes Boughton in Northamptonshire. "Boughton affords a most interesting study," writes Miss Jourdain, "while the earlier buildings and decorations which remain serve to illustrate the transition in style." Other articles deal with the Mortlake tapestries and the Thistle Chapel.

Some valuable hints on decorative design may be obtained from the photographs of

Chinese mirrors illustrating the first article in the *Burlington Magazine*. The article by Herbert Cescinsky on English lacquer work gives examples of cabinets and other pieces, exceptionally good in design. The book notices this month contain reviews of a large number of continental works of considerable importance to the artist.

In the *Connoisseur* will be found an illustrated article on the furniture in Sir Frederic Cowen's collection, a further instalment on the Salting collection, mainly dealing with bronzes and reliefs, and numerous notes of interest on works of art of various types and periods.

The *Studio* gives an important place to Professor Jiro Harada's article on modern Japanese Cloisonné enamels, illustrated by numerous examples of bowls, vases, etc. In the review of the National Competition of Schools of Art it is noted with satisfaction that the Board of Education now proposes to develop rather than curtail the resources of this method of encouragement for the designer, and that it is likely that the exhibition will in future be held in a convenient and easily accessible gallery. The students' designs reproduced in the article show much of a high degree of merit, and at times a really imaginative treatment, though at times we see a tendency to lapse into the hackneyed forms of conventionalisation so characteristic of the art school some ten or fifteen years back.

That well known art magazine, *Deutsche Kunst und Dekoration*, published at Darmstadt, has now a record of fifteen years, and the current issue shows that its sympathies remain wide. The colour plates include one after a picture by Hodler, a Secessionist whose work and Mr. Augustus John's is inspired by similar motives. Otherwise, the magazine is illustrated by numerous half-tone blocks in monochrome, all of good appearance, and these, in connexion with articles on various subjects, enable the reader to obtain an extended view of the arts in Germany. Professor Angelo Jank, of Munich, is a decorative artist of merit, many of his compositions dealing with hunting scenes and warfare. The sculpture of Professor Hoetger, of Darmstadt,

is interesting, one piece being evidently in emulation of the missing Monna Lisa. The architecture includes work by Professor Hermann Muthesius, Professor Von Seidl, Mr. Lutyens, Mr. Ino Campbell, and others. Various other illustrations are included of decorative work of all kinds. The new volume certainly opens well.

Mr. E. B. Chancellor's article in the *Nineteenth Century* on the architectural masterpieces of London concerns itself chiefly with the buildings of the XVIIIth century; but the more interesting paragraphs are towards the end, where Mr. Chancellor emphasises the prevailing ignorance of architects and their work in the following terms:—

"The ordinary amateur prides himself on knowing something of the characteristics of the old masters of pictorial art. He will point you out a Raphael or a Reynolds; a Cuypp or a Velasquez, with the assurance of a critic; even the more recondite masters will yield their mysteries to his indefatigable inquiry; but in the case of the masterpieces of architecture few appear to take the trouble to learn when they were erected or who were responsible for their design, and the man who would blush to be thought uninformed of the name of a well-known painter will be found light-heartedly acknowledging his ignorance of the architect of some building whose outlines have been familiar features to him all his life. I cannot but think that it is this want of knowledge in this particular phase of art that largely makes the removal of some architectural masterpiece an easy matter compared with the relegation of some notable picture to another country.

People will never stir a hand to preserve a thing unless they realise that it is not only an object of what is absurdly called sentimental value, but also an intrinsic part of the capital, and a possession as much worth preserving as a picture or a book. But when they do this, they will as stoutly defend what architectural remains we can still boast in London as they have done, on so many occasions, the masterpieces of pictorial art which would otherwise have been wrenched from our grasp. Were there but half as many amateur critics of architecture as there are connoisseurs of pictures, one would have comparatively little to fear in this respect."

The important international exhibitions at Rome and Turin have quite overshadowed the efforts made this year at Charleroi, where a by no means unimportant industrial exposition has been gathered together and pleasantly housed in tasteful buildings. This exhibition is described in an article in *La Revue Générale*, which suggests that it is well worth a visit from those interested in the mining and metal-working industries, the staple ones of the district.

Concrete has an editorial on the second report of the Joint Committee on Reinforced Concrete. Following this is an article by Mr. Lakeman on the construction of the Free Church, Hampstead, the work of Mr. Lutyens. The Canadian building regulations for reinforced concrete are instructive. Other short articles deal with various aspects of concrete construction in engineering and building works.

The *Electrical Engineer* signals its twenty-ninth year of issue by a reduction in price to twopenny weekly and by a simultaneous increase in the number of its pages. The current number describes the leading features of the Electrical Exhibition at Olympia.

CORRESPONDENCE.

Bureaucracy v. Competition.

SIR,—I have read with much pleasure your article on the refusal of the Scotch Education Department to allow the Aberdeen Education Committee to invite eight architects to send in plans for new buildings required by the Committee. You point to what is a very real danger to the future of our country, not only in architecture, but in every department of life. The whole system of government is slowly changing. The British idea of government as crystallised in Magna Charta and the Bill of Rights was for the public authority to see to things being properly done by others, not to employ public officials to do them. The true function of government is destroyed where instead of supervising it undertakes to execute. With the architect, engineer, and contractor the public officer is rightly engaged in supervising in the public interest, otherwise a second public authority is needed to supervise the first.

MARK H. JUDGE.

EDITORIAL SUMMARY.

The vandalism in connection with the Tattershall Castle fireplaces forms the subject of our leading article. It is suggested that a Minister of Fine Arts should be appointed, and that archaeological societies should supplement the work of the Royal Commission.

Mr. Gordon Craig's models and drawings for "Macheth" and other plays are considered in our second leader with reference to Stage Architecture generally.

Notes include: "The White Horse Cellars, and Hatchett's, Piccadilly"; "Heraldic Improvements"; "Municipal Improvements and District Committees"; "Houses versus Flats"; "Portinsale Bridge"; "The National Trust and Tattershall Castle" (p. 351).

Some information on the structural features of the Crystal Palace is given on p. 351.

"Contemporary Architects and their Work: Messrs. Eames & Young, of St. Louis" (p. 352). This appreciative article is contributed by Mr. Francis S. Swales, formerly chief designer in their office. Several of our illustrations are reproduced from drawings made by Mr. Swales.

Professor Beresford Pite's lecture at the Architectural Association on "Building Construction in Architectural Education" is reported on p. 355.

Book Reviews. (p. 358) include: Mr. Willmott's "English House Design"; "The Making of a Great Canadian Railway"; "The Ancient Stained Glass of Exeter Cathedral"; "School Planning at Home and Abroad."

A curious drainage question is discussed in our Intercommunication Column (p. 362).

"Sculpture in Civic Art" is the title of the first article in the Monthly Review (p. 363).

A translation of the conditions of the Town Planning competition at Düsseldorf is given on p. 365, with comment.

The scheme for a Memorial to King Edward at Shadwell, designed by Mr. Reynolds-Stephens, is described on p. 366.

To the Building Trade Section (p. 369) a legal correspondent contributes an article referring to "Builders and Extraordinary Traffic."

Law Reports (p. 372) include: "Howlett v. Harrods," and a case re the "Fees of a District Surveyor."

On page 374 the results are given of the competitions for a library at Clydebank and a Cottage Hospital at Skegness.

MEETINGS.

FRIDAY, SEPTEMBER 29.

Glasgow Architectural Craftsmen's Society. - Presidential address by Mr. James S. Boyd. 7.45 p.m.

SATURDAY, SEPTEMBER 30.

Hachey Institute, Dalston-lane - Demonstrations in Engineering and Science Laboratories. 6.30-9.30 p.m.

Glasgow Architectural Craftsmen's Society. - Visit to works of the Coltness Iron Company.

Institution of Municipal and County Engineers. - Western District meeting at Pimlico, Town Hall, 9.30.

MONDAY, OCTOBER 2.

Architectural Association. Opening address by the President, Mr. G. C. Horsley, F.R.I.B.A. 7.30 p.m.

MONDAY, OCTOBER 2, to TUESDAY, OCTOBER 10.

Royal Institute of British Architects. - The Ninth International Congress of Architects, Rome.

FRIDAY, OCTOBER 6.

Birmingham University. - Mr. Raymond Unwin's inaugural lecture on "Civic Design," in the Mason College Building. 5.30 p.m.

SATURDAY, OCTOBER 7.

Institution of Municipal Engineers (Yorkshire and Northern Districts). Meet at N.E.R. station, Leeds. 10.55 a.m. Visit to Messrs. Thomas Green & Sons, Ltd., Smithfield Ironworks, to the Headingley Electric (Water) Pumping Station, and to the new Filter Beds.

ILLUSTRATIONS.

American Architecture.



OUR three plates this week in connection with our "Contemporary Architects" series (p. 352) give examples of the work of Messrs. Eames & Young, St. Louis.

The Story of the Bridge.

This series of articles on this subject will be continued in our issue of next week.

INTERCOMMUNICATION COLUMN.

A Drainage Question.

SIR,—I am contending with the local authority that it is their duty to relay a combined drain which runs underneath my house, but their reply is that it "has received the sanction of the local authority, consequently the owners of the premises through which it passes are responsible for its repair and maintenance."

I have inspected the application of the builder for permission to lay the drain. This document is in the registers at the Town Hall; it was signed by the Surveyor to the Board of Works and also by the Chairman of the Board of Works for this district on April 26, 1876. My house is No. 70 in the street. A blockage was complained of between No. 70 and 72, and as the next-door gully is lower than ours it became flooded. Our sewage seemed to run away, but really it helped to choke them. We were successful in clearing by rods on two occasions, but the third attempt failed, and a notice threatening summons having been received, we called in a builder and opened up the drain. The choking was due to a down pipe breaking and falling into drain beneath. The inspector called and condemned the drain on account of its not being cement jointed and out of date. We then gave our builder instructions to cease, so that we might thrash out the question of responsibility.

The arguments urged by us that it is the Council's duty are:—(1) That the plan differs from actual state of affairs, showing 66 in combination at rear, whereas this does not appear so from what has been opened up; and that other drains from stable in rear (erected about 1880) are in existence, but not shown on plan, thus showing that the combination as it exists has not received sanction of local authority. (2) That prior to 1875 there was a garden where our shop now stands, and that the shop was added to the house at that time. This necessitated the opening of the drain to take the rain water, and it was then that the plan came into existence. The combined drain was neither reconstructed nor repaired. Thus it must have been laid many years prior to 1875, and that, apparently, the Council have no plans thereof. (3) That the drains are not such that they would have been approved by the local authority, seeing that the method of laying is contrary to the regulations in existence at that time.

On the 12th inst. notice was served that the Council would examine drains, and this they did at junction of house and shop. They found clay joints worm-eaten; no concrete, except round the rain-water pipes, which had been relaid about fifteen years ago. The Council replaced gravel and flooring as they found it.

To-day notice has been served complaining of "a leaky drain," and requiring us within seven days to "properly relay the drain in accordance with the drainage by-laws of the London County Council." If default be made, a summons will be issued requiring attendance before a magistrate. Our lease was only recently acquired, and will expire in about fourteen years hence.

Could you kindly tell me what attitude I should take up, and would you be so good as to answer the following questions? (1) When cement jointing came into force, and when made compulsory. (2) If we are, as the Council say, liable for the combined drain, whether we have any legal claim upon our neighbours, who are connected, to pay their proportion. (3) If we can cut our neighbours off and refuse to let their sewage pass through the drain beneath this house.

I am aware that if the Council relay the sewer we shall be compelled to renew (in accordance with London County Council by-laws) all the connections thereto, but are local authority liable for inspection chamber, manhole, vent pipe?

Dalston.

SUFFERER.

[*.* We have considered your questions as regards the combined drainage system connected with your house and should be glad to assist you; but we are unable to give purely legal advice through our columns, as to do so on a statement of facts which may be

imperfect through laymen not having perfect knowledge of important points might only involve them in litigation. We may point out to you that in the metropolitan area a combined system may have been sanctioned so long ago as January 1, 1856, as this seems to have some bearing on your contention, and also that not all deviations from the authorised plans serve to convert an authorised system of drainage into a sewer, although if the effect of the deviation or of an unauthorised connexion was to include other buildings than those contemplated in the authorised scheme that might serve to do so. We have not information enough before us to deal with all your questions. If the drainage of all three houses is defective, and if the system is a "drain" and not a "sewer," we should imagine the authorities would proceed against the adjoining owners as well, and the expenses would be apportioned; but in any event we should say you would not be entitled to cut your neighbours off, as they may have prescriptive rights. The extent of the work the local authority can demand we can express no opinion upon on the facts as stated. We should advise you to consult a good solicitor upon the questions involved, as a single interview may save you from embarking upon fruitless litigation, and in any case through him you may approach the local authority and your neighbours with a view to ascertaining, lessening, or sharing the liability.—En.]

Fungus and Boarding.

SIR,—Referring to the letter from W. E. D., the fungus is evidently dry rot. The favourable conditions for dry rot are damp, warmth, and the absence of fresh air. The position of the room in question suggests that the facilities for ventilation under the floor are inadequate. The remedy is to remove every particle of wood affected by the rot or showing any indication whatever of the fungus and burn it, well wash the walls and the sound woodwork adjoining with a solution of perchloride of mercury (corrosive sublimate), and provide ample circulation of air under floors before fixing the new woodwork. As he has substituted tiles for the wood floor, I would suggest that, the skirtings be of cement, as the wet from washing the tiles may help to foster the dry rot in the woodwork. An interesting leaflet was issued by the R.I.B.A. in March, 1910, which should be instructive to your correspondent.

FREDK. OSBORNE SMITH.

FIFTY YEARS AGO.

From the *Builder* of September 28, 1861.

Apprenticeships.

At the recent Social Science Conference in Dublin Mr. Lushington, barrister, read a paper, entitled "Shall Apprenticeship under Indenture be Compulsory?"

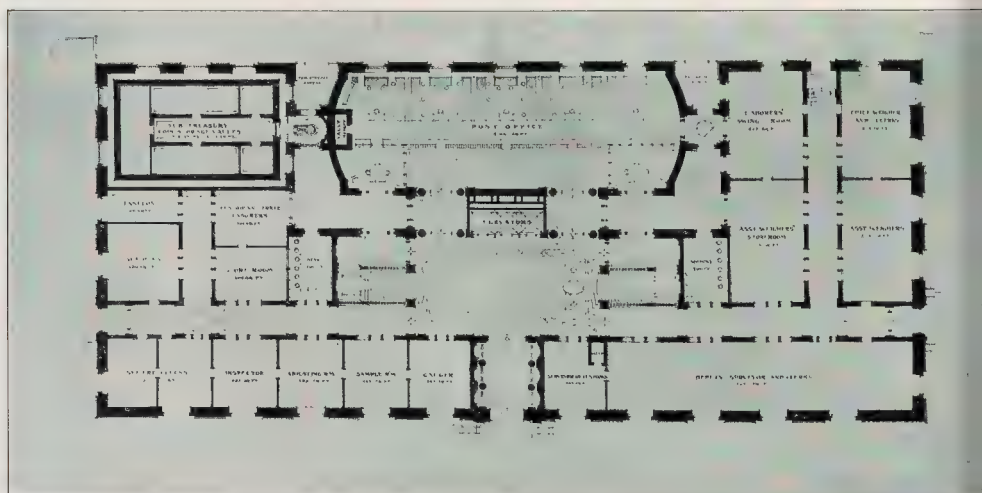
This apprenticeship question is one of great difficulty, and also one of considerable moment to the community at large. It is very certain that, amongst our large manufacturers and employers, a feeling adverse to indentured apprenticeships is rapidly spreading. The *Builder*, some time ago remarked upon the fact that in many of our large establishments and workshops apprentices have almost or wholly disappeared. The views of this class of employers have been ably set forth by Mr. Napier, of Glasgow, in a paper read at one of the meetings of the British Association. It is contended that under the old system, where boys are secured against the contingencies of trade and uncertainty of employment for a specified season, they acquire habits of carelessness and indifference, unfitting them from becoming superior workmen; whereas, by putting them upon their mettle, and giving them plainly to understand that present employment and future success depend upon the activity and attention with which they discharge their respective duties, a race of better educated and more ingenious workmen will be produced. As a proof of the correctness of their views the advocates of *unindentured* apprenticeships point to America where our old English system is unknown.



BATTERY STREET ELEVATION.



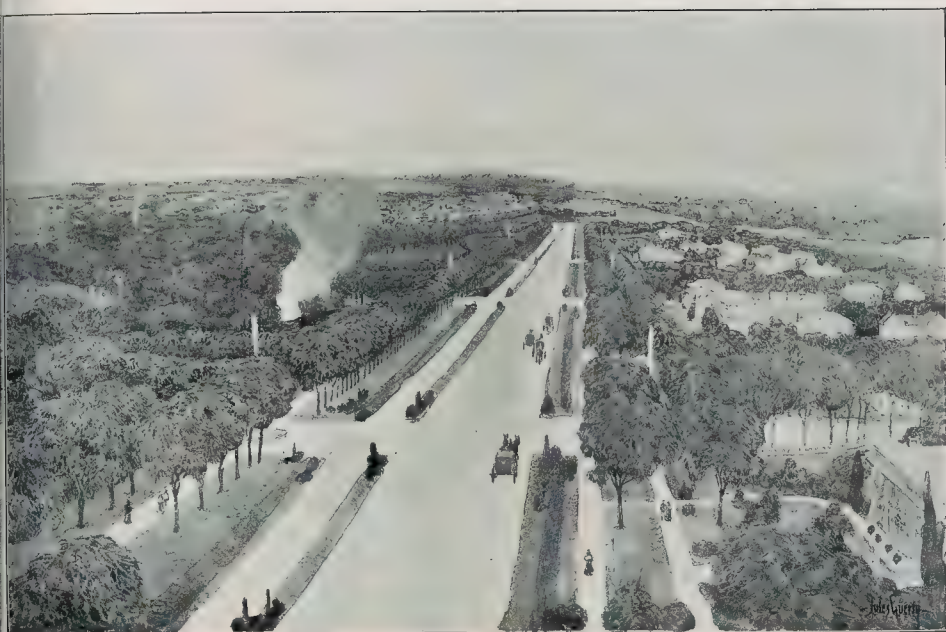
SECOND FLOOR PLAN.



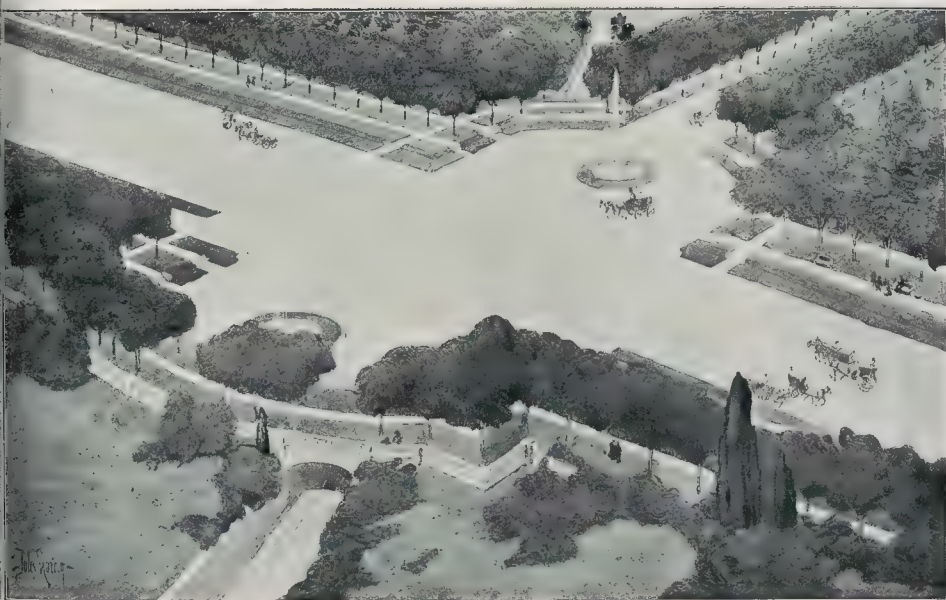
GROUND FLOOR PLAN.

UNITED STATES CUSTOMS HOUSE, SAN FRANCISCO, CALIFORNIA (1903)

MESSRS EAMES &



LINDELL BOULEVARD IMPROVEMENT, ST. LOUIS (1903).



Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., N. C.

LINDELL BOULEVARD IMPROVEMENT, ST. LOUIS (1903).



TELEPHONE STATION, BELL TELEPHONE COMPANY, ST. LOUIS.



ST. LOUIS PUBLIC LIBRARY, CRUNDEN BRANCH: DETAIL OF FRONT.



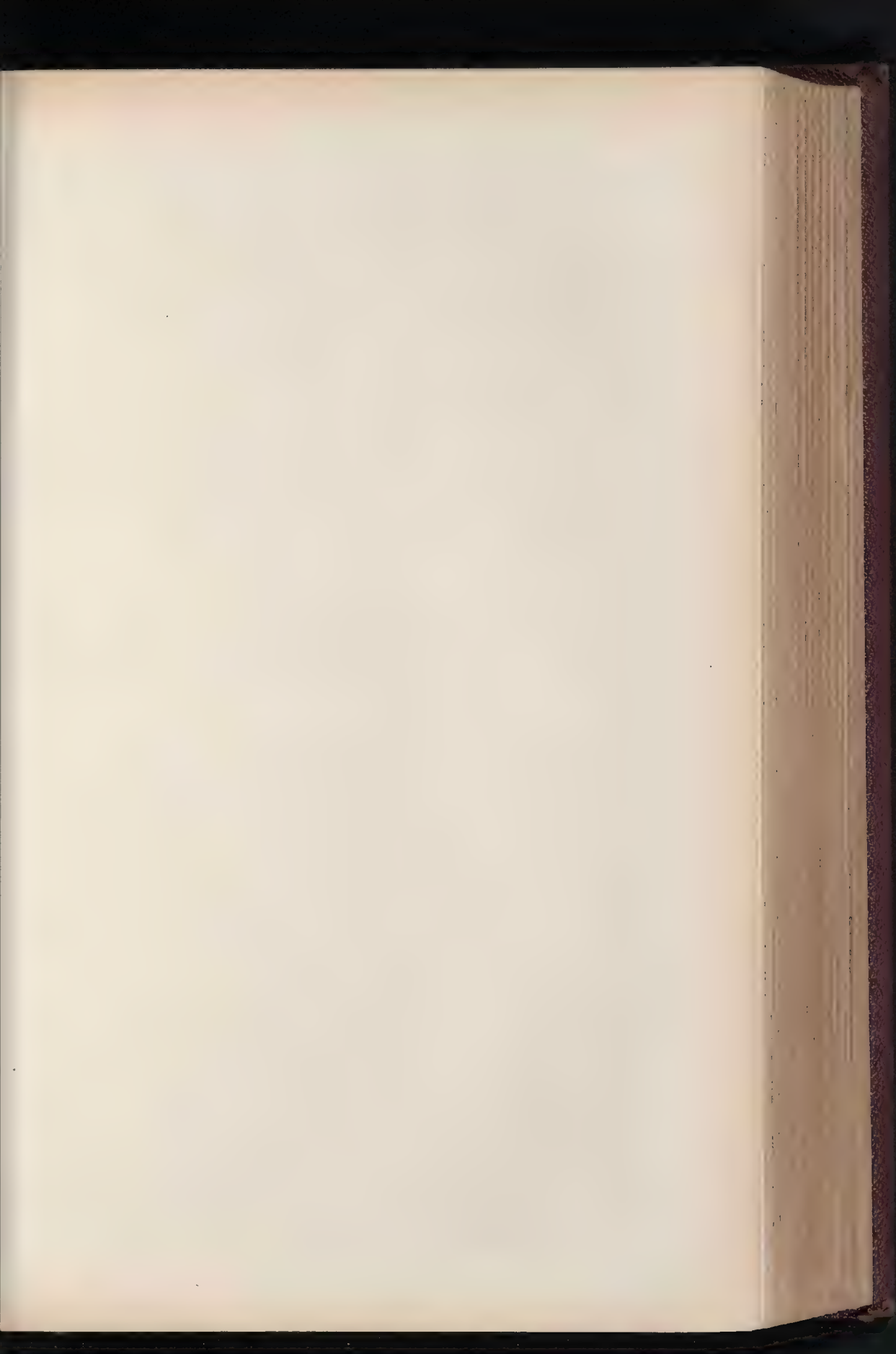
ENTRANCE LODGE, WESTMORELAND PLACE, ST. LOUIS.



MISSISSIPPI VALLEY TRUST COMPANY'S BUILDING, ST. LOUIS.

TS, ST. LOUIS.

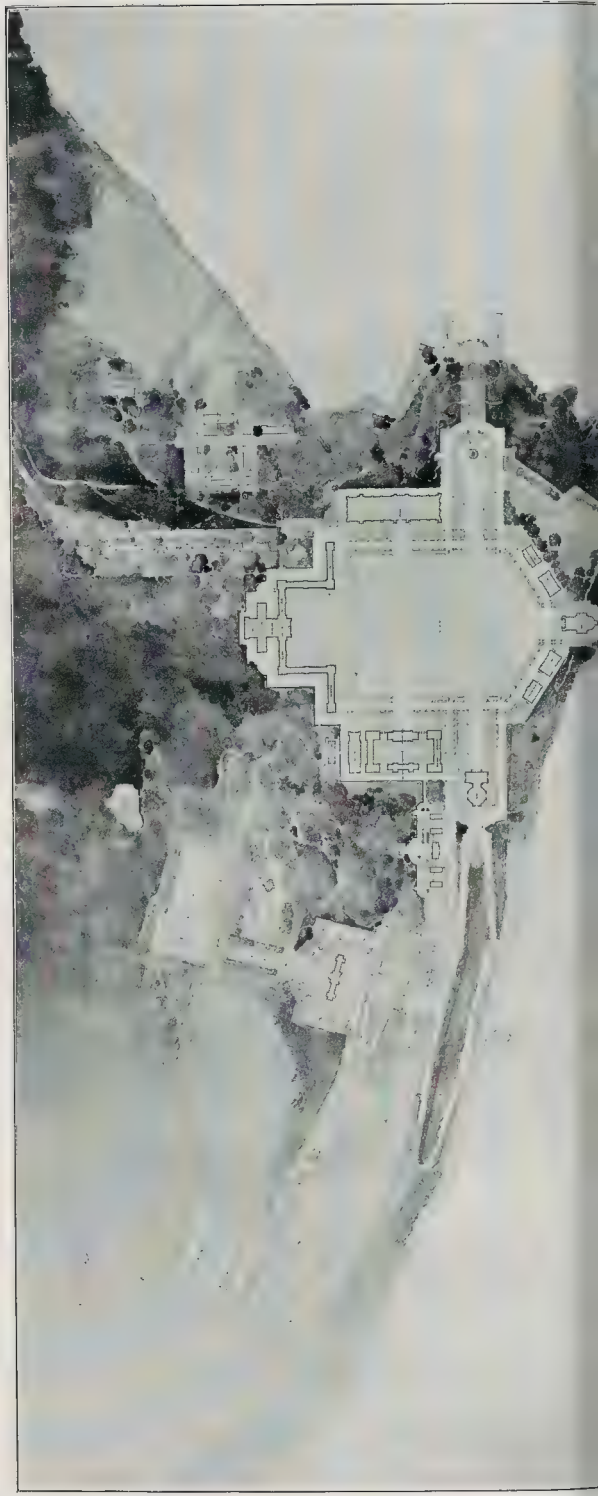
Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., N.C.

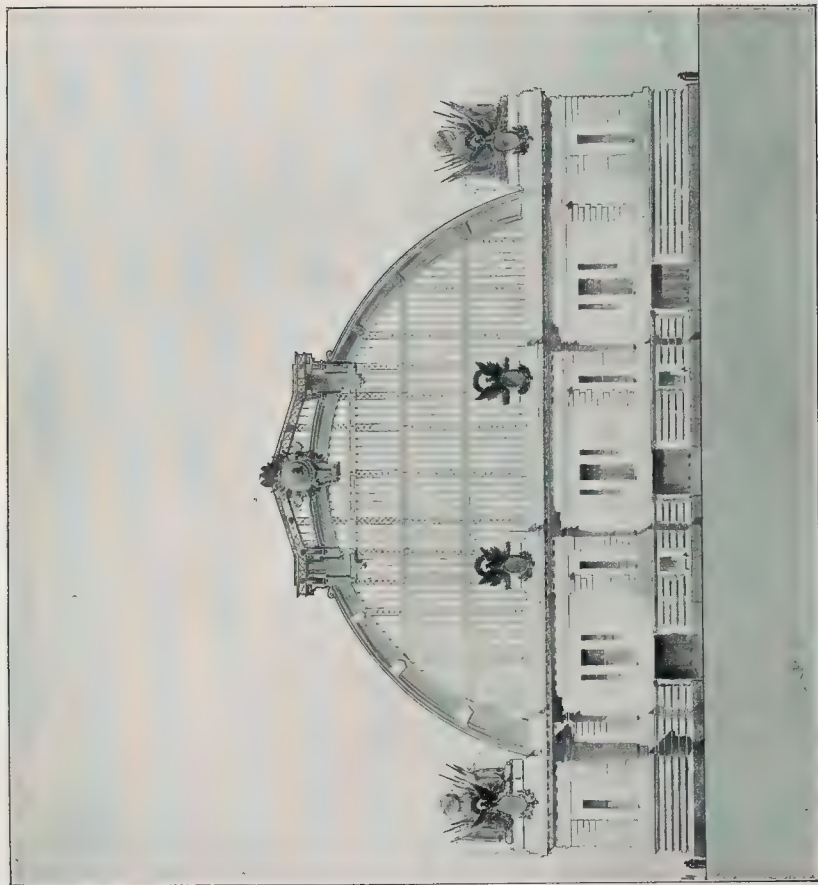


THE BUILDER, SEPTEMBER 29, 1911.



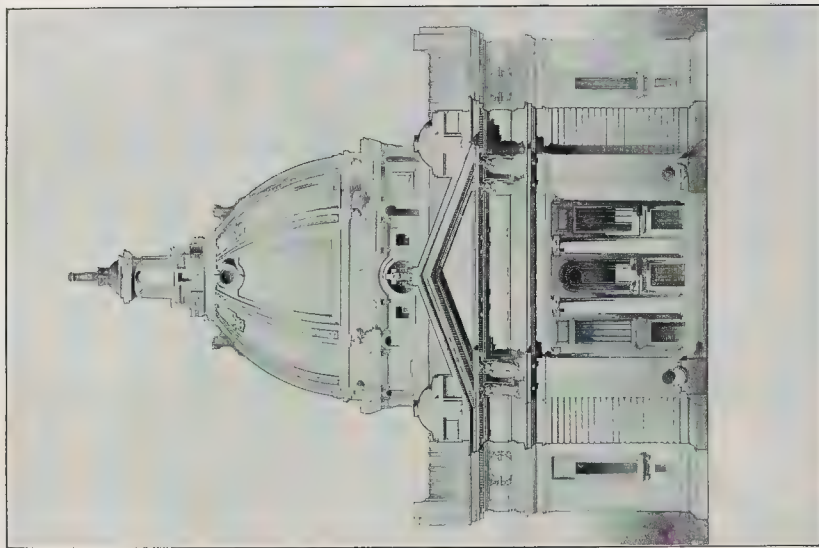
WEST POINT IMPROVEMENTS: PART OF THE RIVER ELEVATION (SEE PLAN).





WEST POINT IMPROVEMENTS: THE RIDING HALL, END ELEVATION (1903).

MESSRS. EAMES & YOUNG, ARCHITECTS, ST. LOUIS.



CHAPEL DESIGN (1903).

SPENCER & CO., LTD., PORTLAND, 4 & 5 BENT HARTING ST., E.C.

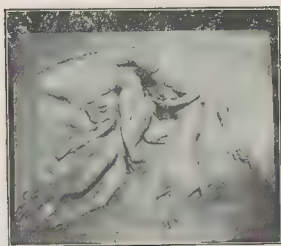
MONTHLY REVIEW *of* CIVIC DESIGN.

Park View Realty Improvement, St. Louis, 1903.
Messrs. Eames & Young, Architects.

PARK VIEW, ST. LOUIS.

WE publish this week an illustrated article dealing with the work of Messrs. Eames & Young, of St. Louis, U.S.A. (p. 352). The above design the lay-out of the Park View Realty Tract, set to the Exposition grounds, is an interesting and attractive example of their work in developing an independent estate of some size involving the consideration of many of the problems of town planning. The able manner in which the various apartment-houses are grouped so that each room looks out into garden has the added advantage of displacing with the enclosed court, which, though condemned by our sanitarians and encouraged by our municipal authorities preventing the free passage of air, is all too often a feature in similar schemes this country.

There is little doubt that the city of the future will avoid this feature—with interesting effects on our street architecture and the general lay-out. The problems to have been solved to some extent at the end of the XVIIIth century in Craig's plan for the lay-out of the more modern part of Edinburgh, where the blocks on either side of George-street give long continuous fronts, without any enclosed areas. By this means not only is a free circulation of air obtained, but it also becomes possible to place minor streets for mews, etc., in a shabby part of a town without their presence being observable from the principal streets.



Outside the Luxembourg, Paris.

SCULPTURE IN CIVIC ART.

Any mental conceptions of a city as a complete work of art in itself, an organic creation, must perhaps regard sculptural monuments in park, or street, or square as the final touch of æsthetic expression, such monuments holding the same relation to the complete design of the whole city as the sculptured decoration on a building does to the building itself. The means whereby the conscious mental and intellectual expression of the structural conception of the building acquires the added grace and charm of subconscious emotional expression, the last crowning grace of architecture, the flowers on the tree, the natural result of its perfection of organic structure.

As the tree must grow in uniformity with natural forces before the flower appears, and the building root itself in solid necessity and be evolved by hard mental stress in harmony with the law of gravitation before its structure can reach its final expression in the fine flower of sculpture, so it is in the city. Before we can introduce sculpture its environment must be there. We cannot brighten an expression which does not already exist. Before a sculptural monument can gather up and express more eloquently the prevailing sentiment of an open space or of a group of buildings the place must be laid out or the buildings grouped to express the same sentiment, or in deference to some ruling idea of which the sculpture may be the finishing and more vivid expression.

Town planning as a fine art, being now but at the beginning of a new Renaissance in this country, its technique has yet to be built up anew. Rightly it starts with broad principles of growth and structure, and concerns itself more immediately with stern necessity. If, then, we have not yet fully developed a school of thought, or laid down the general principles of the art or the technique of the method whereby the lay-out of open spaces or the grouping of public buildings can be made to express definite ideas or feelings, it is not to be wondered at that we have no very definite ideas as to the method whereby sculpture may be used to emphasise expression in any particular instances, or generally as to its place in a civic composition—its possibilities and its limitations.

We have yet to receive that help and co-operation from the sculptors which the subject demands. A few of the more gifted and intelligent of them have lately given some thought to the right treatment of sculpture on a building, and have realised that in conjunction with architecture it attains to complete satisfaction, but little attention has been given to the study of sculptured monuments in relation to their environment.

If we look to our past efforts in London for guidance in the art of placing statuary, this guidance is chiefly negative. Examples abound of how not to do it.

A most creditable statue of Oliver Cromwell is placed at the bottom of a sort of dry moat or bear-pit, with one of the bears—or is it a lion?—reclining on the not very creditable pedestal. Every savage, from prehistoric man downwards, as countless tumuli and other remains testify, knew better than to erect a monument to a departed hero in a hole. The natural instinct is to place it on a hill; to make



At Versailles.

what is high higher; to place the monument—if only a mound or a skull on a stake—where it can be seen and can impress the beholder. Oliver Cromwell might as well have been placed in the moat of the Tower of London.

A few yards away is the equestrian statue of Richard Cour de Lion, the position of which has no relation whatever to the open space in which it stands. Put away in a corner sideways and close up to the front of the House of Lords, dark metal against a richly-fretted stone background of the same



At Versailles.

general tone, it so entirely shrinks into its surroundings for lack of sufficient atmosphere around it to detach it from its inappropriate background that any merit it may possess is entirely lost. It is possible that not one in ten of those who pass by are even aware of its presence.

In the Thames Embankment-gardens the statue of Tyndall has an inscription, in small letters on its pedestal, but, being placed in the centre of a circular garden enclosure, no one can approach near enough to read it. Realising this, the authorities have thoughtfully placed a small wooden board on a post at the edge of the enclosure with the inscription on it, but it does not seem to have occurred to them that there was anything wrong with the surroundings of the statue or that it was designed to be more closely approached.

The outdoor sculpture of Paris and Versailles, as the illustrations suggest, can as a rule depend upon an adequate setting and suitable environment; a position in which the surroundings are to some extent in harmony with the sentiment of the sculpture. When that is not completely obtainable a sound technical knowledge of the due relation between architecture and sculpture, and the unity that fortunately exists in the various arts, ensures at least some general harmony of effect, and at any rate avoids the worst mistakes.

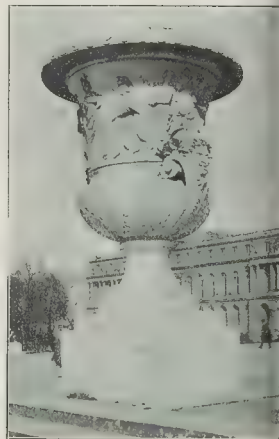
Such groups as we illustrate might be divided into two classes the recumbent figures and groups of children at Versailles,

and the isolated figures in the gardens of the Louvre or the Luxembourg.

The first are strictly architectural; deliberately arranged as part of the general composition with which they have an exact relationship of scale, material, and style designed to enhance and give the finishing touch to the expression of the general sentiment of the whole composition.

The rest are on a different footing. Designed for the most part as independent creations, expressing a complete idea, they need a background or a frame, a certain isolation from their immediate surroundings while preserving the unity of the general effect.

Usually such statues are housed in museums, as at the Louvre or Luxembourg, but by placing them in the surrounding gardens, not too intimately related with the architecture of the building itself, the necessary isolation is obtainable, and the



At Versailles.

statue obtains the most perfect setting, can be appreciated as an independent creation while at the same time adding much to the charm of the garden without creating discord or in any way interfering with the effect of the general design of the building and its environment. The result has all the advantages of an outdoor sculpture-gallery where each statue can be seen independently without clashing with its neighbour.

As the importance of the study of civic design becomes more fully realised, then we shall hope to see the proper relation



Sculpture at Versailles.

apture to its environment and the general
sion of its possibilities and limitations
civic art receive the attention of the
yal Academy and other schools of
ulpture.
The illustrations to this article are from
otographs by Mr. F. R. Yerbury.

OWN PLANNING COMPETI-
TION AT DÜSSELDORF.

The following translation of the conditions
a competition for replanning the town of
üsseldorf, Germany, should be of great
erest, we think, to all English town
nners and municipal officials, even though
ey have no intention of competing.
Characterised by the scientific method and
that painstaking thoroughness for which
e Germans are so distinguished, these con-
itions amount to a most interesting and
uable essay on the whole art and science
town planning, as at present understood in
Germany, emphasising the principal points to

planner the man with the creative type of
mind can attain a grasp of the essential
points of the problem, and be in a position to
tackle it with any hope of success. We doubt
whether the officials of any English town are
yet in a position to supply such exhaustive
information and draw up such conditions.

We note with approval that, in addition to
the five prizes offered, a sum of 1,000*l.* is set
aside for the purchase of any other schemes,
or parts of schemes, which show sufficient
merit. We commend this arrangement to
the Government of the Commonwealth of
Australia, which proposes to adopt any valu-
able or striking idea from any of the non-
premiated designs without payment to the
author.

CONDITIONS OF THE COMPETITION.

The object of the competition is to secure
a plan for building up the town of Düsseldorf.

The plan must satisfy the requirements of
traffic, public health, administration, and
beauty.

The scheme of buildings now existing in
the district of Düsseldorf to be retained as
far as possible in the suggested plan. Re-
vision is, however, not forbidden, and the
competitors must decide to what extent re-
building is necessitated by their schemes.

The designs must contain suggestions for
the extension and supplementing of existing
streets and communication systems (tram-
ways, town, and general railways).

Further, there must be designated in the
plan sites for the provision of dwellings and
centres of industry, having regard to the con-
ditions governing each (road and water com-
munications, points of the compass, prevail-
ing winds, parks, and forest lands).

The scheme of roads, tramways, and town
railways, as well as general railways, should
extend to Kaiserwerth and Ratingen in the
north, Hilden in the east, Benrath in the
south, and Nenz in the west (smaller com-
mercial district).

The proposed traffic arrangements should
be so laid out as to allow of a possible linking
up by streets and railways with the surround-
ing large towns, Duisburg, Essen, Elberfeld,
M-Gladbach, Rheidt, Crefeld (greater com-
mercial district). The proposals for such a
linking up to be given.

Suggestions are to be shown for the cultiva-
tion of open spaces in the town of Düsseldorf,
and in the lesser and greater district exten-
sion, in the greater, however, only so far as
a connexion of the forest and meadow lands
already existing in it with the commons of
the other two districts allow.

The 100000 plan to be used for setting out
of the town; the 250000 for the lesser exten-
sion; and the 1000000 for the greater extension.
The two last need only contain the main
thoroughfares of the town of Düsseldorf.

The following points are to be observed
in the designs:—

(1) The principal commercial streets from
the town into the country are to be considered
the groundwork of the plan. A future sup-
plementing of this main network with new
streets is to be assumed.

The main streets must be wide enough for

tramways and their construction over and
under the future fast trains (high level and
underground railways). The necessity of
further bridges over the Rhein in the future
is to be borne in mind.

(2) Boulevards and promenades, that must
be as free from through traffic as possible,
must be provided for between the open spaces
(see 7). Hereto belong also the streets on
the Rhein to north and south of the town, in
the setting out of which the fixed waterline
is to be taken into account. This is to be
noted in (4) in connexion with the centres of
industry.

(3) Necessary cutting through and widen-
ing of streets for improved connexion of the
streets named in (1) with the inner town are
to be shown in the 100000 plan of the district,
which is to be obtained gratis from the
Survey Office.

(4) Proposals must be made for the division
of the town into residential and industrial
centres, whereby a revised distribution of the
town divisions in the several classes and zones
of buildings becomes possible. In arranging



Outside the Luxembourg, Paris.
("Sculpture in Civic Art.")



In the Tuileries Gardens, Paris.
("Sculpture in Civic Art.")

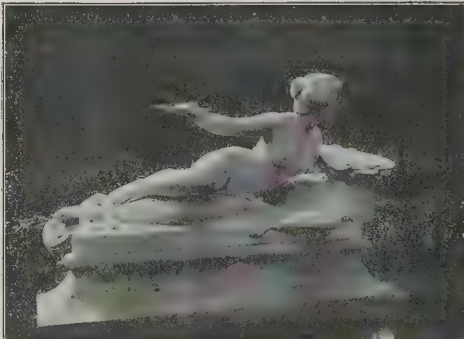
the industrial centres, good railway communi-
cation and direct or indirect (by means of
railway waggons) communication with the
Rhein should be considered. New harbour
basins must be foreshadowed.

The separation of the industrial from the
residential quarters by park and woodland
should be aimed at.

Residential quarters, with dwellings suit-
able for the various classes of the inhabitants
(detached houses, terrace houses, small and
large blocks of dwellings), as well as plans
for open and enclosed places, to be provided
for, in addition to existing buildings, to such



Sculpture at Versailles.



"Painting": Figure outside the Louvre.
("Sculpture in Civic Art.")

an extent as to meet the requirements of the increasing population until the year 1930. (See graphic representation of the increase in occupation of land for buildings predicted to 1950, compiled from the Düsseldorf Statistical Office.)

By regulating the widths of streets and depth of building blocks, wholesome conditions of living are produced. At the same time the ground should be apportioned carefully, and nothing allowed to go by chance. Low buildings are to be recommended; moreover, the detached house will not greatly concern the lower classes. Suggestions may also be indicated for new suburbs in the larger district of the built-up town, easily accessible by tram.

(5) The position of the principal railways is detrimental to the further development of the town at different points. It should be considered in what way this disadvantage can best be overcome, especially how far the numerous crossings over can be done away with.

Increase of the present insufficient accommodation for traffic at the principal railway-station is to be aimed at, so that an increased amount can be dealt with.

The railway system round Düsseldorf is to be supplemented with a main line bridging the Rhein to the north of the town.

The suggested alterations and extensions of the railways need only be roughly sketched out on plan, but must be accompanied by explanatory notes.

(6) Suggestions are to be made for the introduction of a contemplated line of railway from Cologne, and from the industrial district, for the connecting up of these two lines with each other, and with the line to Crefeld (Rhein, Bahn).

(7) Sites as large and convenient as possible, supplementing those existing, to be allotted for wood, park, and meadow land, as well as for exhibition purposes, aviation, games, and sports.

The rivulet valley, not yet built on, must be especially taken into consideration. First to be considered for the new schemes are those lands in possession of the town, then those belonging to the Fiskus, and, lastly, larger pieces possessed by private individuals.

(8) The town entertains the project of erecting a new Town Hall in the quarter between Stiftsplatz and Schulstrasse Platz. The required area is 18,000 sq. metres (enclosed courts) in extent, and provision must be made for a possible extension in the future. The market place is, if possible, to remain on its present site. The rearrangement necessary for erection of the Town Hall in the before-mentioned quarter of the town, and, perhaps, also the adjacent neighbourhood, is to be represented on the 1:500 scale plan.

(9) The requisite sites (Plätze) must be provided for, an arts and crafts school building of about 2,200 sq. metres site area, a museum of about 5,000 sq. metres extent, a large concert-house of about 5,000 sq. metres extent with proportionately large garden, and a town theatre to seat 2,000. For these use the section plans mentioned in (3). Further, schemes must be thought out for supplying the town from one or more points with food (market halls) coming into Düsseldorf by rail, ship, or other conveyances from the southern town centres and from parts to the west and south-west of the town. Further, a place for a new slaughter-house, about the size of existing one, is to be provided.

Among other public buildings of the first importance there will be primary, secondary, and elementary schools, and in this connexion it must be borne in mind that for every 5,000 inhabitants there must be an elementary school of fourteen classes (seven for boys and seven for girls). Then baths, conveniently grouped with public libraries, reading-rooms, savings bank branches, etc. An effort should be made to conveniently place the various sports grounds in relation to the different localities, as mentioned in (4).

Sites for all public buildings must be chosen so far as is possible from land in the possession of the town.

(10) The suggestions made, especially those in relation to traffic, the disposition of extended industrial and residential quarters, the division of the latter into the several classes of buildings, and also the placing and grouping of public buildings, and any point

which seems of importance to the author should be discussed in a short explanatory report.

The following items will be supplied to intending candidates:—

(1) Plan of town to 1:500 scale, with land in possession of town coloured (yellow), that owned by Fiskus. (violet), and larger plots owned by private individuals (coloured round with red). (Extra plans may be procured from the Town Survey Office at 10s.)

(2) A similar plan, uncoloured, to draw the design upon. (Extra plans obtainable at 5s.)

(3) A similar plan, black and white, 1:500 for purposes of study, with notes of existing schools.

(4) Plan 1:500 of the district between Stiftsplatz and Schulstrasse.

(5) Plan 1:500 (surveyors' tables) to take design.

(6) Plan 1:500 (general plan) to take design.

(7) Special plan of the Aper and Grafenberger Forests, 1:500 with contours.

(8) Town plan 1:500 with particulars of density of population in the various parts of old Düsseldorf.

(9) Town plan 1:500 with particulars of different building values.

(10) Graphic representation of predicted needs of building land to meet increase in different sections of population till the year 1950.

(11) Results of traffic census at fourteen points in the town.

(12) Daily amount of traffic on the lines of town tramways in 1910.

(13) Journey times and fares from the centre of Düsseldorf to the various centres of traffic.

(14) Receipts and expenditure of tramways in comparison with the mileage (in kilometres) and passenger traffic.

(15) Recent street building methods. Tramways with their construction.

(16) Compilation of means of providing town with food.

(17) Growth of the town of D., 1795-1910.

(18) Industrial development in D. according to trades.

(19) Traffic in D. harbour, 1795-1910.

(20) Rail goods traffic in D., 1896-1910.

(21) The inhabited estates to the number of dwellings in sixteen large towns.

(22) Density of houses in twenty large towns.

(23) Density of houses in statistical area of D. 1905, thus without the incorporated centres.

(24) Average cost of rent in statistical area.

(25) Occupied buildings with gardens (as before).

(26) The division of buildings according to size in statistical area (as before).

(27) The sale for residential property in D., 1902-1910.

(28) Direction of wind, compiled from observations in 1909 and 1910.

Required Drawings.

(a) Building plan for the district of Düsseldorf (Compare 1.7 and 9.)

(b) A groundwork plan for the smaller extension 1:500 (Survey tables, see Introduction.)

(c) Representation of proposed connexions by road and rail with the large neighbouring towns 1:500 (General plan, see Introduction.)

(d) Detail plan for part of town between Stiftsplatz and Schulstrasse 1:500 (See 8.)

The addition of perspective sketches appropriate to the work are permissible.

The size of a single sheet must not exceed half a square metre.

Coloured drawings will not be considered in the selection, nor exhibited.

The prizes offered are:—1st, 20,000 M. (1,000*l.*); 2nd, 15,000 M. (750*l.*); 3rd, 10,000 M. (500*l.*); 4th and 5th, 7,500 M. (375*l.*). By consent of the judges it is open to them to equalise 1st and 2nd prizes, bringing each to 15,000 M. (750*l.*)

The prizes will be awarded so far as suitable schemes are sent in.

In judging, value will be given to the practicable execution of the scheme, having regard to the cost involved.

Besides the above five prizes there will be 20,000 M. (1,000*l.*) set aside to be employed

in sums not less than 1,000 M. (50*l.*) nor over 5,000 M. (250*l.*) for the purchase of designs at the discretion of the judges, not to be divided amongst the whole of the competitors, but only those designs which show some practical and artistic merits.

Moreover, a part of a scheme only may be bought when the scheme is not successful as a whole.

The designs, together with explanatory report, must reach the Rathaus, Düsseldorf, by July 1, 1912, 6 p.m., addressed "An dem Herrn Oberbürgermeister, Düsseldorf," and marked "Wettbewerb für den Bebauungsplan."

Works received after that date or posted later will not be allowed to compete for a prize.

The designs are to be sent flat in portfolios, and provided with an identifying word or sign.

A sealed envelope must accompany the plans, bearing the same word or sign, and the name and address of designer inside.

The twenty-eight plans mentioned may be obtained on depositing 100 M. (5*l.*) with the survey office of the town. The order will be returned on receipt of an entry, or of the said plans sent back undamaged within four weeks.

Literature.

(1) "Düsseldorf and its Buildings." Published by the Architects' and Engineers' Association. D., 1904.

(2) "Sanitation in Düsseldorf"—development of engineering knowledge, second group, seventeen booklets.

(3) Dr. Brandt. "Study of the Working and Administration of Düsseldorf in XIXth Century."

(4) Thalheimer. "Guide to the Residence and Estate Market. A guide through the dangers of land traffic in a large city." Düsseldorf, 1908.

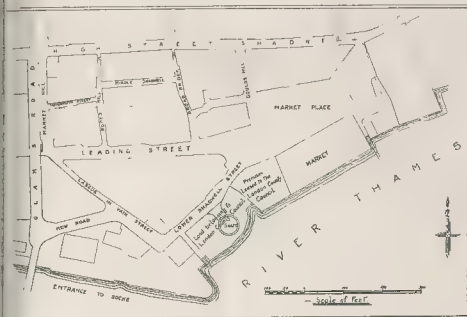
(5) Kleesattel, Jm. Jos. "Old D. in Illustration. A Collection of Lower Rhein Home Arts." D., 1909. Schmitz & Olbertz.

PROPOSED MEMORIAL TO KING EDWARD.

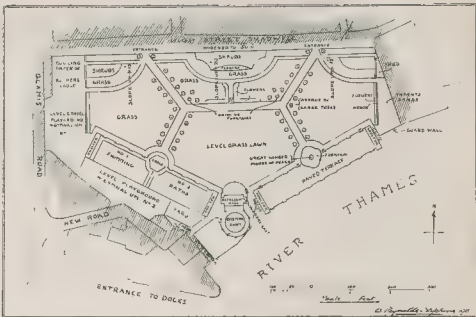
DR. PAGET, Bishop of Stepney, proposed some time ago that the old Shadwell Fish Market, disused, should be adapted to form a riverside park. The suggestion, supported by an influential committee, has met with approval, and we are now able to give publicity to a scheme by Mr. W. Reynolds-Stephens which has been considered by various people interested in the arrangements.

The memorial, to perpetuate the memory of King Edward as a "peacemaker," would be on the terrace. It would take the form of a great seated figure of Peace, in full view of the passing ships of the nations. She holds out to them the olive branch; her lap of plenty overflows with swags of fruit, and roses fall between the feathers of her wings. In front she holds a large plaque with a portrait of King Edward. The fountain which surrounds the figure is emblematical of maritime nation. In the centre of this fountain under the base of the figure would be sculpture to typify London, introducing the principal buildings, such as the Houses of Parliament, (the Government), St. Paul's Cathedral (the Church), the Tower or the Horse Guards (the Army), Greenwich Hospital (the Navy).

The park itself would be treated as shown in the accompanying plan. The details would be as follows:—(1) Paved terrace, 350 ft. by 60 ft., with shelter at each end; shrubs in tubs and seats in the recesses of the parapet walls. (2) Double swimming-bath (open air); water in each 155 ft. by 55 ft.; partition and staging between would be removable for special swimming contests. Dressing cubicles in recesses of north wall. Central entrance lodge for custodian. Bath easily drained and cleaned into river at low tide. (3) Refreshment hall (with clock in roof); main hall open to roof 47 ft. by 25 ft., fireplace east end. In front, semicircular brick tea terrace edged with ivy on posts and chains. Two annexes, each 18 ft. by 9 ft.; that at east end, women's lavatory, at west end kitchen. (4) Men's water-closet off the yard, and men's lavatory at south corner of bath shelter. (5) Playgrounds—(a) level grass lawn in centre, about 300 ft. by



The Shadwell Fish Market Site.



Proposed King Edward Memorial.

Scheme by Mr. Reynolds-Stephens.

70 ft.; (b) two level ones of asphalt or gravel for wet weather, with gymnasium, tennis court, etc.; (c) sands corner for infants, with a guard wall on the river front, pierced at places so that the high tide floods the sand about 1 ft. Seats about the park under the trees, but especially sheltered ones to the north of terrace and baths in wall recesses which are 7 ft. high. (7) Plot for keeper's house, or this could be made into a bowling green. Two keeper's yards. (8) A stand and place for river row boats can easily be added. Mr. Reynolds-Stephens thus provides for persons of all ages, and his scheme is worthy of consideration.

CIVIC DESIGN NOTES.

In view of the fact that the attempts hitherto made towards the improvement of Ottawa have signally failed to enhance the architectural dignity of that city, and, feeling that the present Improvement Commission has not displayed a marked appreciation of this aspect of the question, the Ontario Association of Architects has passed a resolution in the following terms:—
“Resolved that the Ontario Association of Architects in congress assembled desires to express its appreciation of the fact that measures being taken to materially add to the dignity and beauty of Ottawa as the capital city, and

further that the Association respectfully suggests that the time has arrived for a broader outlook on the situation with a view to providing for the necessities of the future both governmental and civic. Further, in view of the criticisms of certain eminent landscape architects and town-planners who have studied the question recently, it is very necessary that some system should be adopted for the co-ordination, of the several works in progress and for planning of future works as part of harmonious whole.
“The Association, after a careful inspection of the work that has already been executed, feels that much which has been done will have to be undone, as it neither meets the demands of the situation in design or execution. The Association would respectfully point out that in many cases the fundamental principles of the disposition of masses and of consideration for natural features, have given place to a striving after effect by over-elaboration of detail and the use of a quantity of meretricious ornament quite devoid of artistic quality.
“Having regard to these facts, the Association would respectfully urge upon the Government the appointment of an advisory commission of architects (nominated by the Council of the Royal Architectural Institute), which would study the question from all points of view and particularly in regard to future needs. The Association would point out the success which attended the appointment of such a Commission at Washington, D.C. If the dignity of Ottawa as a capital city is to be preserved to posterity it is incumbent that a wise disposition

of streets, departmental and civic buildings be made now. The greatest heritage that can be handed down to future Ottawa is a well-planned city.”
THE fact that the *Standard* Charing Cross has devoted a column to the consideration of a scheme for a new bridge at Charing Cross, prepared by Mr. W. L. Lucas, is gratifying evidence that the public interest aroused in this question by Mr. John Burns and others is well maintained. There is no doubt this is a much-needed improvement, and one which would have a great effect on the appearance of the river, but for all that we can hardly expect it to be realised immediately. Public opinion still needs educating, and to this end discussion in the Press of any and every suggested scheme is of value. The question of convenience may still weigh with some, but, as Mr. Lucas points out, in these days of rapid motor traffic the station would be as convenient on one side of the river as on the other.
BARTHOLOMEW CLOSE and New Cloth Fair is generally accounted to be the most picturesque portion of the City still remaining; certainly it is the most interesting and picturesquely, but the ancient structures of this old-world spot are now threatened with destruction by the carrying out of a new thoroughfare running from Long-lane to Aldersgate-street. The Close, with its quaint narrow streets and



Sketch by Mr. Adrian Berrington from the Model of the Proposed King Edward Memorial Scheme suggested by Mr. Reynolds-Stephens.

little squares, is hemmed in by Cloth Fair, Smithfield Market, and Aldersgate-street, and once upon a time was connected with the famous Church and Priory of St. Bartholomew, the eastern portion of which still remains. The old gateway to the square is fortunately still intact, and in former times was the western entrance to the original church. From this entrance the new road will run through Cloth Fair, to the north, and, turning to the right, so on to Aldersgate-street. The Close has boasted many famous residents, including Rahere, the founder of the Priory, and William Bolton, a later Prior, who built Canonbury Tower at Islington, which is said to have been connected with the Priory of St. Bartholomew by a subterranean passage. Dr. Caius, who founded Caius College, Cambridge, and John Milton, the poet, have resided there, the latter in retirement at the Restoration. Hubert Le Sueur, the modeller of the statue of Charles I. at Charing Cross, and Benjamin Franklin, who worked in a local printing office, have also been among its residents. For some little time surveying has been going on in the neighbourhood, and shortly the new thoroughfare will cut through this ancient quarter, involving the destruction of the famous "Dick Whittington" tavern at the corner of Cloth Fair. This house boasts the distinction of possessing the oldest licence in the City, being 560 years old. Opposite is an older tavern still, the "Hand and Shears," which, however, has been modernised. It was at the latter establishment that the ancient Court of Pie-powders was held during the Fair of St. Bartholomew to settle disputes in regard to debts and contracts.

Although the new road will result in doing away with a most ancient and picturesque portion of the City, it is a matter for congratulation to know that the "Hand and Shears" will, in all probability, be spared.

Relief Road at Croydon.

THE Road Board have offered a grant of 30,000*l.* and the Ecclesiastical Commissioners one of 5,000*l.* in aid of the construction of the contemplated by-pass and relief road from Thornton Heath, through Vaddon, to the South of Croydon, and so to the main Brighton-road at Purley—a length of four miles. The scheme does not find favour with the Croydon Chamber of Commerce, who apprehend that a diversion of traffic will depreciate the trade of the town, and consider that money should be applied to a completion of the widening of the High-street through the town and the bridge across the railway at West Croydon. We cannot endorse this view, being convinced that the method of relief roads is the more economical one for improving traffic conditions, and, even were the result such as the Chamber of Commerce anticipate, which we very much doubt, this is but a narrow-minded and parochial way of looking at a great question. We do not believe that the traffic provided for by the proposed route would be of a value counterbalancing the increased congestion it would entail and the costly alternative of destroying property in the centre of a busy town. Improvements are undoubtedly needed in Croydon, but they are not of a character giving a claim on the funds of the Road Board.

Growth of a Brazilian City.

REMARKABLE as has been the progress of the State of São Paulo during the past twenty years, that of the capital of the State has (writes the British Consul, Mr. O'Sullivan-Beaure) been more remarkable still. In 1887 São Paulo was a quiet, rather sleepy town of the usual up-country Brazilian type, with a population of some 47,000 inhabitants, notable only from the fact that a large number of religious orders had established themselves therein. By 1890 the population had risen to 64,934, in 1892 it was 130,775, in 1900 it was 239,920, in 1907 it had increased to 300,000, and in 1910 it stood at 350,000. At present São Paulo ranks as the record city in Brazil, Rio de Janeiro being, of course, the first. Its appearance is a matter of surprise to visitors; it resembles one of the great cities of Europe. The principal business streets are lined with shops which, in outward appearance and in the variety and richness of their contents, vie with those of Paris or of London. The city has been planned with much taste, the various streets and avenues are wide and straight; all well paved and planted with trees. Throughout the city exist a number of public gardens. Many of the private residences are of great size and magnificence. The bustle and activity and the ever-increasing traffic which prevail

throughout the city during business hours make it difficult for newcomers to realise that they are in a Brazilian town. The municipality spends money liberally with a view to improving and beautifying the city. There is just being completed a municipal theatre, which vies in magnificence with that of Paris, upon which it is modeled. It is estimated that the total cost of this opera-house will exceed 1,500,000*l.* Within the past few months the municipality have voted a sum of 400,000*l.* for the purpose of constructing a new avenue of communication. A project is under discussion for the carrying-out of an immense scheme, estimated to cost some 3,000,000*l.*, for the construction of a series of main boulevards to traverse the city in different directions. Great activity prevails in the building trades. On all sides are to be seen houses in course of construction, which houses are occupied as soon as finished. They are being built at the rate of 3,000 per annum. The city is comparatively healthy, the death-rate averaging 19·9 per 1,000 of population.

THE Local Government Board will hold inquiries into proposed expenditure of local authorities as follows:—Mansfield Borough Council, 4,700*l.* (September 26); Southport Borough Council, 8,200*l.* (September 27); Winchester City Council, 1,750*l.* (September 28); Barrow-in-Furness Borough Council, 2,500*l.* (September 26); Derby Borough Council, 2,200*l.* (September 29); Heaton Norris Urban District Council, 1,150*l.* (September 27);

Richmond Borough Council, 4,378*l.* (September 26); Whiston Rural District Council, 1,350*l.* (September 29); Blackpool Borough Council, 8,079*l.* and 7,200*l.* (September 26); Exmouth Urban District Council, 1,200*l.* (September 28); Leyton Urban District Council, 1,867*l.* for public offices extensions (September 26); Ilford Urban District Council, 10,000*l.* for small dwellings (September 26); Coventry City Council, 11,500*l.* for city hospital (September 27).

Lectures on Town Planning and Garden Cities.

THE Garden Cities and Town Planning Association, 31 Old Broad Street, Holborn, London, W.C., prepared to arrange for lectures, with or without lantern slides, in any part of the country, illustrating the progress of the town planning movement at home and abroad and the great developments in the adoption of garden city principles. Applications for particulars should be made to the Secretary, Mr. Ewart G. Culpin, as above.

A LECTURESHIP in City Design and Town Planning has been established in the University of Birmingham. The cost will be defrayed by the Bournville Village Trust. Mr. Raymond Unwin, F.R.I.B.A., has accepted the Lectureship for the first year, and will begin his course during the present session. The Lectureship will at first be associated with the Department of Civil Engineering, wherein are students training for civil and municipal service of various kinds.



Proposed King Edward Memorial, Shadwell: Sketch for Figure of "Peace"

Mr. W. Reynolds-Stephens, Sculptor.

THE BUILDING TRADE.

BUILDERS AND EXTRA-ORDINARY TRAFFIC.

FROM A LEGAL CONTRIBUTOR.

THE builder who is accustomed to sign contracts involving the haulage of large quantities of material must needs take into account the amount of possible liability for extraordinary traffic. In dry weather the traction engine, with its trail of attendant waggons, does little harm to the hard high road; notwithstanding the experience of the winter of 1911—prolonged drought is not normal condition of affairs. Assuming that, owing to the haulage of many tons of bricks or spoil along a road, the surface is deeply scarred with ruts that the neighbourhood is compelled to incur large expense who is to bear the burden?

It is provided by the Highways and Locomotives Amendment Act, 1878, that where a certificate of their surveyor, it appears to the authority which is liable or has undertaken to repair any highway, whether a main or not, that, having regard to the average use of repairing highways in the neighbourhood, extraordinary expenses have been incurred by such authority in repairing such highway by reason of the damage caused by excessive weight passing along the same, or extraordinary traffic thereon, such authority may recover in a summary manner from any person, or, in consequence of, the order such weight or traffic has been ordered to repair, the amount of such expenses may be recovered to the satisfaction of the Court having cognisance of the case to have been incurred by such authority by reason of the damage arising from such weight or traffic as said.

It is provided that any person against whom such expenses are entered into an agreement with such authority as is mentioned in this section be liable to pay to them of a composition in respect of such weight or traffic, and therefore the persons so paying the same shall be subject to any proceedings under this section.

The words printed in italics were added to the above section in 1898 in order to enable highway authority to proceed direct against the person, company, or firm employing the haulage.

The Highways Act of 1898, which made the amendment above set out, has not had much effect to protect the builder and make his employers responsible. It is true that the important case, *e.g.*, that of *Epsom Urban District Council v. London County Council* (1891, 16 T. L. R. 571), was decided in favour of the person in the position of a builder. The defendants employed two contractors for the erection of a temporary hospital for the alteration of certain existing buildings. The works involved the carriage of exceptionally heavy traffic along some of the roads in the plaintiffs' district. It was held that the traffic had been conducted in consequence of the defendants' orders, and they were liable to pay the cost of repairing the road.

In a later case, *Egham Rural District Council v. Gordon* (18 T. L. R. 515), a different construction was put upon the section. The defendant, who was building a house, bought 250,000 bricks without giving any instructions how they were to be transported. The defendant then went away, and he was absent the bricks were sent by steam haulage, and the road was consequently damaged. In an action to recover the expense of repairing the road, the County Court judge found that the weight of traffic was excessive, but that it did not place "in consequence of" the defendant's order within the meaning of section 12 of the Locomotive Act, 1898. It was decided by the County Court judge was justified in coming to the conclusion that the damage was done by the vendor choosing this particular

mode of sending the bricks, and not in consequence of any order given by the defendant, and that the defendant was not liable.

Points of some nicety are likely to arise in the settlement of these disputes. For instance, suppose a company employed a builder A. to build a factory, and A. employed B., a sub-contractor, to cart the material. In the event of there being extraordinary traffic, who would be liable? In the case of *Laphorn v. Harvey* (49 J. P. 709), which was decided under the old Act, these were the facts, and the builder A. was held liable. It is conceived that, under the amended Act, the company itself might be held responsible.

It is not easy to reconcile these cases or to lay down a logical principle which will always apply. Indeed, it would seem as if the question was one of fact for the decision of the judge who tries each particular case.

A correspondent recently put the following facts before the Editor of the *Builder*: Damage was done to roads by a traction engine hauling bricks, timber, etc., to a new building. (1) The engine and trucks belong to A., who contracts with B. to haul bricks at a given price to new buildings. (2) B., for convenience of business, quotes exactly the same price to C., who pays B. for the haulage, and B. pays A. to avoid multiplicity of accounts. (3) C. is one of a number of contractors who tender to build for D., and by reason of the traction haulage D. gets his house erected at a lower price than otherwise could be done. (4) D. is therefore the only party actually benefited by the cheaper haulage. As we read the Act, the one who benefits is the party who should pay. Can you please tell us if we are correct?

Applying the decisions, so far as they are relevant, to this statement of fact, there seems to be no case in which the party who benefits is made liable merely because the advantage accrues to him. Had this been the ruling principle, it is obvious that the *Egham case* (*supra*) must have been decided the other way, as the purchaser of the 250,000 bricks got the benefit, because if the vendor had not been allowed to choose his own method of sending bricks he would probably have charged a higher price. Nor does it appear that road haulage was actually contemplated in the contract with D. In the circumstances it is conceived that in the case suggested the contractor would himself be held responsible.

One word as to the amount of expense recoverable. It has been decided that "the expenses recoverable are not the expenses incurred by the actual damage caused, but a proportionate part, representing the excess over the average expenses of repair, as it would be unjust to charge the party occasioning the damage with the whole expense of reinstating the road. Where, however, the highway in question has recently been repaired, so that but for extraordinary traffic no repairs would have been required for twelve months or eighteen months, it is just that the whole cost of the repairs necessitated by the traffic should be recoverable." It has, however, been held that where the road has been so damaged as to require to be entirely reconstructed, and the extraordinary expenses of the repair required to be done to rectify the damage and the expense of reconstruction cannot be severed, the wrongdoer may be held liable in the total expense of the repair and reconstruction.

The question what is "extraordinary traffic" within the meaning of the Act under discussion is one which has been much canvassed. As we have seen, the section provides that the cost of such traffic is to be considered in relation to the average expense of repairing highways in the neighbourhood. It is exceedingly difficult to lay down any general principle which would cover the facts of any particular case. One or two instances may serve to throw light on the question.

In *Williams v. Davis* (44 J. P. 347) the appellants were timber merchants, who had purchased timber in the ordinary course of business. The timber was loaded and carried, between Christmas and March, on timber carriages in the customary way of carrying

timber. There were sixty-seven loads in all, the weight varying from two or three to nearly five tons. The heavy loads were heavier than the loads of agricultural produce passing along the road in question. "The sixty-seven loads of timber were a greater number of timber loads than usually passed over the said roads in three consecutive months." The justices found that "the said sixty-seven loads of timber" were, in the aggregate, "excessive weight and extraordinary traffic," and the Divisional Court upheld their decision. The late Mr. Justice Lush said, "What the traffic was to be compared with was the ordinary traffic of the road." Note the fact that it was timber—the natural product of the land—which was carried had no bearing on the decision.

The authorities appear to warrant the inference that what is extraordinary traffic in one district will not necessarily be regarded as such in another, and if the use of heavy vehicles is connected with an industry which is characteristic of a particular neighbourhood, the Court will be justified in finding as a fact that the traffic is not excessive. In the case of *Wallington v. Hoskins* (1880, 6 Q. B. D. 206 n.), the owner of certain stone quarries used to send the stones by waggon along the highway, three or four horses to each waggon. The roads, when used for agricultural traffic, cost in repairs about 20s. per mile, and when used for stone traffic about 130s. per mile. Each waggon and load weighed about 5 or 6 tons. The stone traffic was a recognised business in the neighbourhood, and the waggon loads were the usual weight in such traffic. The justices held that the traffic was not extraordinary, but that the weights were excessive, and that extraordinary expense had been incurred by reason of the damage caused by such excessive weight, and made an order on the plaintiff to pay those expenses. The Queen's Bench Division held that the justices were right in finding on the facts "that the traffic was not extraordinary, but ordinary traffic, regard being had to the industry of the place, and regard being had to the recognised mode in which that industry is carried on." The traffic not being extraordinary, the Court further held that the weights could not be excessive, if they were found in fact to be the weights usual in the stone trade. "It seems to me," said Lord Coleridge, C.J., "that the moment the justices hold that this is an ordinary and recognised industry of the place, and that it is carried on in the ordinary and recognised mode in which such industry is carried on, the weights are no longer excessive."

Similarly, in *Lower Strathford Highway Board v. Hatfield Chase Company* (1893, 57 J. P. 567), the defendant company manufactured peat moss from a moor of 3,000 acres, and used for the purpose of their business, the highway between their factory and the railway-station. The five drays which they kept were lighter than those used in other traffic, which was agricultural traffic, and passed each day over the highway. The justices found that this "was a recognised industry" in the neighbourhood, and that excessive weights were not carried, and on these grounds determined that the traffic complained of was not extraordinary within the meaning of this section. The Divisional Court refused to disturb the finding. In another case, *R. v. Williamson* (1881, 45 J. P. 505), the Court pointed out that where a particular industry is carried on by a number of persons in the same neighbourhood, it is erroneous to say that, the traffic caused by one person is extraordinary, because he might have followed the example of other persons and made use of the railway. It will have been noticed that, while some of the cases quoted in this article were decided by justices, others came before the County Court. This may be explained by the fact that the Act of 1898 transferred the jurisdiction of the justices to the County Court in cases where the expenses claimed were under 250s., and to the High Court where the claim was over that amount.

In Emden's "Building Contracts" (fourth edition), the law is thus summarised:—"Extraordinary traffic," as distinct from "excessive weight," includes all such continuous or repeated user of the road by a person's vehicles as is out of the common order of traffic, and as may be calculated to damage the highway and increase the expenditure on its repair.

"The section does not mean that a man is to be mulcted merely because he uses the road more than others do, even if it be his own user which has produced the mischief to the road. The traffic must be extraordinary as regards the ordinary user of the road as a whole by all who use it, and not merely large as regards the traffic put on the road by other persons."

One of the most recent cases on the subject (Billericay Rural District Council v. Poplar Union, J. P., February 4, 1911) shows that in estimating the liability of a person leading traffic, the court must take a broad view of the question. In the case mentioned, the defendant guardians employed a contractor to carry manure in trucks drawn by a traction engine on certain country roads in the plaintiffs' district. The manure was brought from London to be used on a farm colony belonging to the defendant guardians. There was evidence that the traffic so led did some slight damage to the roads, which extended into three parishes in the plaintiffs' district, but it was shown that, notwithstanding the damage, the cost of repairing these roads during the year, which included the period in question, very slightly exceeded the average cost of repairs during the previous five years.

In an action to recover extraordinary expenses pursuant to sect. 23 of the Highways Act, 1878, the defendants pleaded that there was no extraordinary traffic, and that no extraordinary expense had been incurred.

Mr. Justice Channell held that, although slight damage had been done to the roads, there was no evidence that extraordinary expenses—as those words ought to be understood—had been incurred. The right to recover extraordinary expenses is founded on this that a man must not increase the burden of the highway rate upon his neighbours. He also said that the words "average expense of repairing highways in the neighbourhood" point to the average cost of similar roads. Thus, if the road in question is a country road not very far from town, the expense of repairing roads in the town is not to be considered. Judgment was therefore entered for the defendants.

LONDON MASTER BUILDERS' ASSOCIATION.

A COUNCIL meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on Thursday, September 21, with the President (Mr. G. Bird Godson) in the chair. The minutes of the last ordinary Council meeting, together with those of the special Council meeting held on the 23rd ult., of the special Committee meeting, the report of the Conciliation Board meeting, and the report of the Finance Committee were read and confirmed. Several matters from the National Federation were considered, and the question of national insurance and unemployment was discussed. Attention was drawn to instances of intimidation during the late strike and to the obvious evils attending peaceful picketing.

The following new members were elected and nominated:—Elected.—Ordinary member, Messrs. W. Moss & Sons, Ltd.; Associate members, Messrs. Smeed, Dean, & Co., Ltd.; Messrs. Lawford & Sons, Ltd. Nominated.—Associate members, The Metropolitan Asphalt Company; Messrs. Loosley & Sons; Messrs. F. A. Clark & Son.

BUILDING IN NOTTINGHAM.

According to a local report there is some indication that the building trade in Nottingham will improve. The eight weeks' strike of the builders' labourers in the early summer proved a serious and costly matter to many contractors, and its effect is still evident; but the trade generally in the city is steadier than a year ago. Speculative building is not extensive, but the rebuilding of Carrington-street and Grey Friar-gate will help to a great extent to keep the trade normal through the winter and spring.

GENERAL BUILDING NEWS.

GRAMMAR SCHOOL, PRESTON.

The foundation-stone of a new Grammar School has been laid in Moor Park-avenue, Preston, the estimated cost of the building being 12,000*l.*, exclusive of equipment. Messrs. Woolfall & Eccles, of Liverpool, are the architects, and Messrs. T. Croft & Sons the contractors.

SCHOOLS IN LEICESTER.

Mr. W. K. Bedingfield is the architect of the new adult school in Leicester, recently completed. It is proposed to build a new elementary school in the Hindley-road, but the infants' department only will be proceeded with at first.

NEW SCHOOL, CHESTER-LE-STREET.

A new secondary school has been opened at Chester-le-Street, accommodation being provided for over 200 pupils. The buildings were designed by Messrs. Clark & Moscrop, F.F.R.I.B.A., of Darlington. Mr. J. L. Atkinson was clerk of the works, and Mr. Joseph Huntley, of Sunderland, the chief contractor. The heating apparatus was put in by Messrs. J. J. Spoor & Son, of Bishop Auckland, and the furniture and fittings have been supplied by Messrs. Illingworth, Ingham, & Co., of Leeds. The cost, exclusive of furniture, has been about 10,600*l.*

SCHOOL AT CHESTERFIELD.

The High School for Girls, which has been in progress for some time at Chesterfield, was opened recently by the Duchess of Devonshire. The building, costing 20,000*l.*, has accommodation for 325 scholars, possible extensions being arranged for. Mr. G. H. Widdows, A.R.I.B.A., was the architect.

UDDINGSTON, LANARKSHIRE.

The Bothwell School Board have decided to spend 2,250*l.* on building a manual workshop, washhouse, and laundry at Uddingston.

ABERDEEN IMPROVEMENTS.

In connexion with improvements on the beach at Aberdeen, it is proposed to erect a refreshment kiosk, for which Mr. W. Dyack, the Borough Surveyor, has prepared plans. Two schemes are under consideration, one costing 2,000*l.* and the other 1,645*l.*

TWERTON-ON-AVON, BATH.

The buildings for the Higher Elementary School at Twerton have now been finished. Mr. A. J. Pictor, of Bruton, was the architect, and Messrs. Chancellor & Son, of Bath, were the builders. The cost of the building, including the furniture, was about 6,500*l.*, and accommodation is provided for 250 pupils. Combe Down stone was used.

EMPIRE MUSIC HALL, BURNLEY.

This theatre has been entirely reconstructed in modern Renaissance style from the designs of Mr. B. Crewe, architect. The total seating capacity of the house is about 2,000, with standing room for 700 more. There is a promenade at the back of the hall, in the centre of which is a fire-resisting cinematograph chamber.

ROSYTH NAVAL BASE.

Messrs. Thorburn & Sons, Edinburgh, are the sub-contractors in the building of the new base. Messrs. Easton Gibb & Son, the contractors, and the Admiralty, have sanctioned the use of freestone, which has been found by the Tilbury Contracting Dredging Company in the Ferry Hills, near Rosyth. The existence of this vein, apparently, has been unknown to geologists.

HOME FOR INCURABLES, NEWCASTLE-ON-TYNE.

The new children's wing, which has just been added to the above, was formally opened last Friday. It has been erected to the west of the existing building. On the ground floor it contains a large ward 51 ft. by 24 ft., giving accommodation for twelve beds. Annexes are cut off from the ward by cross-ventilated lobbies. The corridor leading from this ward to the verandah at the south end of the building gives access on one side to nurses' duty-room, which will have full control through inspection windows of the large ward, and a small ward for two beds adjoining. At the end of corridor is a day-room with a large bay window and a door leading out on to the verandah. On the other side of the corridor is a ward kitchen. The staircases leads to similar rooms on the first floor. The servants' bedrooms, box-rooms, bathrooms, etc., are placed on the second floor. The building is connected to the existing building by a corridor. The main verandah at the south end of the building and flat over the connecting corridor will be used by the patients. The floors are fireproof construction, covered with wood blocks to all the rooms and terrazzo paving to corridors, annexes, and

cloakrooms. The floor to the large ward, the first floor is constructed on the armoured tubular flooring system. The building, heated throughout by hot-water radiators, the "Reck" system and with Shortleaves to large wards and open fires to other rooms. The walls and ceilings are covered with "Marblite" plaster, and angles are rounded. The buildings designed and carried out under the vision of Messrs. Shewbrooks & Hodgson, architects, Newcastle. Mr. W. Pocock is a clerk of works, and Messrs. Elliott & Co., contractors; Messrs. Vaughan & Dym, armoured tubular floor; Messrs. Turpin & Co., wood-block flooring and terrazzo paving; Messrs. W. Scott & Sons, cooking apparatus; Messrs. W. Scott & Sons, heating and ventilation; Messrs. Falconar, Cross, & Co., electric light and telephones; Messrs. Austin & Co., Mr. G. G. Laidler, lead glazing; Messrs. S. Clark & Clark, wrought-iron balustrade; Messrs. Ramsay & Co., hardware; Messrs. Shank & Co., sanitary fittings.

TRADE NEWS.

Under the direction of Mr. W. M. S. architect, Lintilhgow, the "Boyle" system ventilation (natural), embracing Boyle's patent "air-pump" ventilators and air in has been applied to Winchburg School.

The Great Staughton Voluntary School, Hunts, has recently been fitted with an D. O. Boyd's hygienic ventilating gear supplied by Messrs. O'Brien, Thomas, & Co., Ltd., of the Marnes-street, London, and Exeter Works, South Bermondsey.

Messrs. Samuel Wellrock & Co. report they have let upon building lease the site No. 64, Long Acre, upon which will be erected an important building. The firm have appointed sole agents for the letting.

We are informed that Messrs. John L. Sons, Ltd., having acquired the sole agency for Duresco in Yorkshire (except south-portion) and Lincolnshire (except south-portion), have opened a depot at Trade street, Doncaster, where they hold large stocks of Duresco, and at the same time carry their general colour department business. The north-eastern counties are served from warehouse at Newcastle-on-Tyne. In view of the fact that members of the decorating trade have in the past sometimes experienced a difficulty in obtaining their supplies of Duresco promptly, the firm desire to state that they fill immediate orders direct from the warehouse.

The Mirabelle Partition Company, Ltd., Prince's Wharf, Wandsworth, S.W., are fitted to the Chancellor's Room in the House of Commons a partition 13 ft. 6 in. long, 16 ft. 6 in. high, fixed without stiffeners. The same company are also fitting a partition 115 ft. long by 35 ft. high at the Union Company's premises.

THE LAND TAXES.

IMPORTANCE OF SUBSTITUTED SITE VALUES.

The Secretary of the Land Union draws attention to the fact that so many cases of extraordinary low valuation having brought to their notice it is desirable to draw the attention of owners, their solicitors and agents, to sect. 2 (3) of the Finance Act 1909-1910, by which owners of leaseholds well as freeholds, are entitled to make application (within three months after the original site value has been settled under the Act) for a substituted higher site value, a protection against increment value duty, all cases where the figures of a provision valuation disclose a site value less than site value at the date when the owner changed it, if such purchase was within two years of April 30, 1909, or during his time. Many holders of leaseholds are under the impression that as they did not purchase and never were the owners of the site they cannot obtain a higher or a substituted site value. This is not so. Anyone with a taxable interest in the land in question apply for and obtain "substituted site value" within three months of the settlement of "original site value." A substituted (or increased) site value on quite a small property has recently, on the application of the owner, been increased by about fifty per cent. The original site value fixed by the provision valuation. Inasmuch as the increment value to be ascertained by comparing the value of the site, when an occasion arises, with a substituted site value (if applied for and obtained), owners will see the enormous importance of applying for and insisting on these substituted site values, which are based upon the prices they paid for the property in better times. The Land Union, dealing with the matter more exhaustively in a pamphlet now in the Press, which can be shortly obtained on application to any branch of that society.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

During the summer recess of the London City Council the following applications under the London Building Acts were dealt with by the Building Acts Committee:—

Lines of Frontage and Projections.

Intersea.—One-story shop at the rear of John's Library, St. John's-hill, Battersea, abutting upon the north-eastern side of the terrace (Mr. C. J. Carter).—Consent.

Hamersmith.—Erection of a one-story shop at No. 53, Waldo-road, Hamersmith (Mr. A. Baker for Messrs. Charrington & Co.).—Refusal.

Hamstead.—Erection of buildings on the north-western side of Haverstock-hill, Hampstead, south-eastward of Belsize-lane (Messrs. Woodward & Sons).—Consent.

Hamstead.—Iron and glass roof in front of the coachhouse at No. 116, Haverstock-hill, Hampstead (Mr. T. Wilson for Mr. H. F. Fen).—Consent.

Hamstead.—Additional story to the rear of a window in front of No. 26a, Bryanston-road, St. Marylebone (Mr. E. L. Luytens).—Consent.

Pancras, West.—Building upon a site on the southern side of Prince of Wales-road, St. Pancras, abutting also upon the western side of Kentish-town-road (Mr. H. Winstanley for Governors of the North-Western Polytechnic).—Consent.

Albion.—Addition to the South London Iron Mission, on the southern side of Newington-road, Walworth (Mr. H. Macintosh for Iron Congregational Union).—Consent.

Albion.—Erection of eight houses on the north side of Dunvegan-road, Eltham (Mr. Tewar).—Consent.

Lines of Frontage and Construction.

Uxham.—Iron and glass shelter at the entrance to Baron's-court tube railway station, Uxham, Hammersmith (Mr. W. E. Delick for the London Electric Railway Company).—Consent.

Uxham.—Iron and glass shelter at the entrance to the Brompton-road tube railway station, Brompton road, Kensington (Mr. W. P. Mandelick for the London Electric Railway Company).—Consent.

Width of Way.

Uxham.—Addition at the rear of the Railway Hotel, Atlantic-road, Brixton (Messrs. Edle & Myers).—Consent.

Uxham.—One-story building at No. 10, Moorfields, City, at least on the prescribed line from the centre of the roadway of the fields (Mr. Delisa Joseph).—Consent.

Uxham.—Building on the western side of the street, Poplar, at least on the prescribed line from the centre of the roadway of the street (Mr. Rowland Paine for the Chairmen and Governors of the Poplar Hospital).—Consent.

Width of Way and Frontage.

Uxham.—Building on the northern side of Lordship-road, Stoke Newington, south-eastward of the New River (Mr. W. Restler for the Metropolitan Water Board).—Consent.

Uxham.—Billiard-room addition at the rear of No. 117, Goldhawk-road, Hampstead, next to Avenue-road (Messrs. G. Elking & Son for the Avenue Property Company).—Refusal.

Uxham.—Addition to a one-story shop at No. 98, Streatham High-road, near to Abbey-road (Booth's Pure Drug Company).—Consent.

Space at Rear.

Uxham.—Hanover-square.—Addition at the rear of No. 4, West Chapel-street, Mayfair (Smith (Camberwell), Ltd., for Mrs. Mason).—Consent.

Construction of Buildings.

Uxham.—Shop on the forecourt No. 44, Queen's-road, Baywater (Messrs. G. & Gibbs).—Consent.

Uxham.—Proposed warehouse building on the southern side of Vauxhall-bridge-road, Westminster (Mr. H. S. Stowell).—Consent.

Uxham.—Additional stories to blocks L and O, at the premises of the Western Electric Company, Henley-road, North Woolwich (Mr. B. Dawson for the Western Electric Company).—Consent.

Uniting of Buildings.

Uxham.—Formation of two openings in a party wall between Nos. 55, Old Broad-street, and Austin Friars House (Mr. C. Reilly for the London Offices Company, Ltd.).—Consent.

Uxham.—Uniting of Electra House and the chambers, Finsbury-pavement and on-wall, City, by the formation of two openings at the first floor level (Mr. J. W. Rhodes for Electra House, Ltd.).—Consent.

Uxham.—Double armoured doors in lieu of double iron doors to three openings in division walls at Messrs. Callow's Van Works, Pembroke-street and Bemerton-street, Islington (Messrs. Lovegrove & Papworth).—Consent.

Uxham.—Uniting of Nos. 98 and 100, Newington Butts, Newington (Messrs. Cluttons for the Ecclesiastical Commissioners).—Consent.

Uxham.—Uniting of Nos. 32 and 34, Commercial-street, Whitechapel (Mr. T. Honnor for Messrs. H. W. Bush & Co., Ltd.).—Consent.

Cubical Extent.

City of London.—Additional cubical extent so far as regards alterations in the basement of Nos. 1 to 13, St. Bride's passage, Salisbury-square, City (Mr. G. W. Mascord for the United Newspapers, Ltd.).—Consent.

Strand.—Additional cubical extent at No. 1, Ramilies-street, Oxford-street (Messrs. Brown & Barry for Mr. J. J. Gridlan).—Refusal.

Westminster.—Additional cubical extent in respect of the raising of the roof of the sun-room at the Stag Brewery, Palace-street, Piccadilly (Mr. M. T. Saunders for Watney, Combe, Reid, & Co., Ltd.).—Consent.

Width of Way and Cubical Extent.

Strand.—Erection upon the site of Nos. 13, 19, 20, and 21, Haymarket, and Nos. 1, 3, and 5, Orange-street, of a building to exceed in extent 250,000 cubic feet (Mr. W. Cave for Burberry, Ltd.).—Consent.

Formation of Streets.

Holborn.—Formation or laying-out of a new street for foot traffic only in connection with the erection of buildings upon the site of Fulwood's-tenements, Holborn (Messrs. J. Leaning & Sons).—Consent.

Newington.—Formation or laying-out of a new street for carriage traffic to lead from Alberta-street to Delverton-road, Newington (Messrs. Briant & Sons for Mr. A. F. De Laune).—Consent.

Wandsworth.—Formation or laying-out of a new street for carriage traffic between Putney-hill and Chertfield-avenue, Putney (Mr. J. C. Radford for Lord Westbury).—Refusal.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Proposed enlargement of St. John the Evangelist Church (3,000); the Vicar.

Aberdeen.—Addition to the Deas Iron Works for Messrs. A. Shank & Sons, Ltd.

Ashbourne.—Proposed nurses' home near Cattle Market; Hon. Secretary of the Ashbourne Cottage Hospital.

Atterborough.—Infirmary; Mr. F. Robinson, Clerk, Weyland Board of Guardians, Watton, Norfolk.

Auckland.—Proposed public offices; Mr. S. Adams, Clerk, Board of Guardians, Bishop Auckland.

Bury.—Pumping station (890); Messrs. Parker & Sharp, builders, Penselholme Green, York.

Batley.—Additions to works for Messrs. Mark Lister & Sons, Heckmondwike.

Blaydon.—Workmen's houses, Blackhall Mill; Mr. George Symon, Surveyor, Blaydon Urban District Council.

Bolsover.—Conversion of old Salvation Army barracks into Council chamber and offices; Mr. W. G. H. Browne, Surveyor, Bolsover Urban District Council.

Bradford.—Tenements, Longlands-area (8,250); Mr. R. G. Kirkby, Architect, Bradford Town Council.

Bristol.—Additions to headquarters' homes; Architect, care of Mr. J. J. Simpson, Clerk, Bristol Board of Guardians, Osborne House, Cotham Park, Bristol.

Bristol.—Buildings (1,500); Mr. Samuel Shield, Filton Laundry, Bristol.

Brixham (Devon).—Reconstruction of premises for the Co-operative Society, Ltd., Fore-street (1,845); Mr. R. Hazlewood, builder, Brixham.

Burradon.—Extensions to premises (2,000) for the Crumlington Co-operative Society.

Chelmsford.—Club-house; Secretary, Golf Club, Chelmsford.

Chorley.—Enlargement of St. Gregory's Roman Catholic School (150 extra places); the Managers.

Clacton-on-Sea.—School; Mr. A. S. Rhey, architect, 214, Bishopsgate, E.C.

Coleraine.—Sixty-six houses; Mr. S. J. M'Fadden, architect, Coleraine.

Dalmarnock.—Proposed suite of halls; Mr. A. B. M'Donald, Engineer and Surveyor, Glasgow City Council.

Dartford.—Extensions to iron warehouse, Victoria Wharf, for the Dartford Glass Company, Ltd. Extensions of building at Wellcome Chemical Works for Messrs. Burroughs, Wellcome, & Co.

Devizes (Wilt).—Additions to hospital (2,000); Mr. H. Ash, builder, Devizes.

Dundalk.—Six houses; Surveyor, Dundalk Urban District Council.

Dundee.—Conversion of Spring-grove house into home for old people (400); Mr. James Thomson, City Architect, Dundee City Council.

East Dean.—Hospital in the Forest for the Dean Forest Liberals.

Edinburgh.—Police headquarters, site of Corn Exchange, Grassmarket; Mr. James A. Williamson, City Superintendent of Works, Edinburgh Town Council.

Egham.—Power station for the Staines and Egham Electric Lighting Company; Messrs. W. & G. Grey, architects, Egham; Mr. J. Carmichael, builder, 331, Trinity-road, S.W.

Elswick.—School (100 places); Mr. A. C. Coffin, Secretary, Education Committee, Newcastle Town Council.

Farnham.—Additions to Union; Messrs. Friend & Lloyd, architects, Grosvenor-road, Aldershot.

Forghus.—Proposed reconstruction of public school (950), for the Newport (Fife) School Board.

Glasgow.—Buildings, Park-street, Kinning Park, for Messrs. A. & J. M'Lellan, carriage contractors, 15, Stanley-street, Kinning Park, Glasgow.

Gosport.—Workshop at Messrs. Camper & Nicholson's yacht building yard; Mr. Jno. Creed, builder, 93, High-street, Gosport.

Great Yarmouth.—The following plans have been passed:—Mr. J. Easton, three houses, Caister-road; Mr. Herbert, warehouse, Burgh-road.

Greenock.—Additions to sugar-house, Patrick-street, for the Gleebe Sugar Refining Company, Ltd.

Hanley.—Drill-hall; Mr. H. Wardle, builder, Longport, Staffs.

Inveresk, N.B.—School (2,300); Mr. A. Murray Hastie, architect, Edinburgh.

Keighley.—Sunday school, Marlborough-street, for the Trustees of the Victoria Park Chapel.

Langwith.—Twenty six houses for the Sheep-bridge Coal and Iron Company, Ltd.

Llandudno.—Convalescent home; Mr. C. G. Cwllshaw, Stafford-street, Hanley.

Loftus.—School (3,480); Mr. T. Willoughby, builder, North-end, Northallerton.

Londonberry.—Residence, McCrae-Magee College; Messrs. Robinson & Davidson, architects, Londonberry.

Malton.—Extensions to workhouse (900); Architect, care of Mr. G. S. Cattle, Clerk, Board of Guardians, Malton.

Mansfield.—Alterations to children's quarters (1,075); Mr. W. S. Cockerham, Clerk, Board of Guardians, Malton.

Muirhead.—School; Messrs. Thomas & Wilkie, architects, Dundee.

Northfield (Worcestershire).—Roman Catholic House (13,000); Messrs. Bowen & Son, builders, George-street, Balsall Heath, Birmingham.

Paisley.—Proposed improvements to school for the Paisley Landward School Board.

Perth.—Isolation hospital; Mr. R. McKillop, Surveyor, Perth Town Council.

Peterborough.—Proposed enlargement of infirmary; Mr. W. Pettit, Clerk, Board of Guardians, Peterborough.

Pontyestates.—Church; Mr. W. Griffiths, architect, Falcon Bridge, Llanelli.

* See also our list of Competitions, Contracts, etc., on another page.

LAW REPORTS.

Howlett v. Harrods, Ltd.

THIS case again came before Mr. Justice Lush in the Vacation Court on the 20th inst., and arose out of certain structural alterations on premises of the defendants adjoining the flat of the plaintiff, and which, the latter complained, constituted, owing to the way the work was carried on, a nuisance to him, and in respect of which his Lordship had granted an interim injunction restraining the defendants from continuing the nuisance. (The facts of the case were reported in the *Builder* of September 15.)

Mr. Bramwell Davis, K.C., on behalf of the plaintiff, in support of the motion, said that the real controversy was whether the way defendants carried on the work on September 6 constituted a nuisance to the plaintiff.

Mr. Hunt, on behalf of the defendants, asked that the motion might be allowed to stand over to enable the defendants to answer the evidence which the plaintiff had filed. He suggested that the motion should stand over for one week, and that the interim injunction which his Lordship had granted should be continued in the meanwhile.

The learned Counsel stated that the defendants did not wish to have litigation if it could be avoided.

His Lordship suggested that the parties should endeavour to come to some arrangement before the following Wednesday.

Mr. Hunt proposed that the present motion should be treated as the trial of the action, that the injunction which had already been granted should be continued, it, of course, being limited to the term of the plaintiff's tenancy under his lease, and that the defendants should pay the costs.

Mr. Bramwell Davis said that he would be contented with that.

Mr. Hunt remarked that the defendants were prohibited by the injunction from working between the hours of 10 p.m. and 6 a.m., and he submitted that that should be varied by restraining the defendants from working between the hours of 10.30 p.m. and 6 a.m. However, his Lordship thought that the defendants should be restrained from working between the hours of 10 p.m. and 6 a.m. he would not say anything further.

His Lordship: I do not think it ought to be varied. Now, Mr. Bramwell Davis, is not that a proper offer for you to accept?

Mr. Bramwell Davis said that he would accept that offer.

Mr. Hunt: We never disputed the noise on the night of September 6.

Mr. Bramwell Davis: Our evidence is that there was a most serious nuisance on the night of September 6.

His Lordship then made an order in the terms stated.

Case under the London Building Act, 1894:

District Surveyor's Fees.

AT the North London Police Court on September 20 the case of Alexander Payne v. Gilbert Prior was heard. The defendant was summoned for the payment of fees claimed by the plaintiff, who is District Surveyor for East Hackney (South) and North Bow, in respect of a wooden shed erected in rear of No. 22, Groombridge-road, South Hackney. This shed, when discovered, was irregular, and was subsequently passed under a license granted by the Hackney Borough Council.

The defendant maintained that as the shed was licensed by the Borough Council no fees were due to the District Surveyor.

The plaintiff quoted the case, Westminster City Corporation v. Watson and others, in which it was held in the High Courts that the transfer of the power to license wooden structures to the Borough Councils does not abolish fees due to the District Surveyor, and showed that his inspection of the structure was necessary.

The magistrate agreed, and made an order for payment of fees due, 15s. and 3s. costs.

LONDON COUNCILS.

Acton.—Plans have been passed for Mr. F. Korren, 14, Newburgh-road, for thirteen houses, near Newburgh and Derwentwater roads.

Berkhamstead.—At a recent meeting of the frontagers in Graemesdyke-road a resolution was passed asking the Berkhamstead Council to instruct their Surveyor to get on with the work of making up Graemesdyke-road, at his estimate of 1,350l. The Council at their last meeting agreed to do this. Plans submitted by Mr. J. Ayres for five houses in Gossons-road have been passed.

Bushey.—At the last meeting of the Council the Surveyor was instructed to prepare plans,

specifications, etc., for making up a street known as Springfields.

Camberwell.—Plans have been passed for Mr. H. C. Constantine for the erection of buildings on the site of Nos. 28, 30, and 32, Denmark-hill, also for Mr. G. H. Fellowes Prynn, for additions to St. Bartholomew's Church, Barkworth-road.

Croydon.—The County Council have passed the following plans:—Mr. P. Crowley, Burlington-road, twelve houses, Ashburton-avenue; Mr. A. Carter Pegg, London-road, house and school, Stanford-road; Mr. H. E. Davey, 34, Penge-road, three houses, Beauchamp-road; Mr. J. J. Taylor, Westminster, S.W., electric theatre, Windmill-road; Mr. F. Windsor, 1, High-street, addition to Hospital, London-road; Mr. D. Weightman, 73, North-end, three houses, Estcourt-road; Messrs. J. & C. Bowyer, 32, Westow-street, motor house, 10, Hatwood-road; Mr. W. Capon, Streatham, S.W., six houses, Melrose-avenue; Mr. D. Waller, Old Palace-road, warehouse, North-end; Mr. H. R. Hunter, Sydenham, twenty-four houses, Baring-road; Mr. W. L. Coomber, 65, London-road, eight houses, Tugela-road. The Rural District Council have decided to fill in and pipe the ditch at Church-road, Mitcham, to the extent of 800 ft., at a cost of 110l.

East Ham.—The Engineer has been directed to submit plans and estimates for the erection of a ladies' convenience in the Central Park. The Works Committee have decided to request the Millers' Karri & Jarrah Company (1902), Ltd., to complete the work of laying sectional wood-block paving in High-street North. A letter has been received from the Local Government Board relative to the disapproval by the Council of plans submitted by Mr. E. D. Hoyland for the erection of a mission church in Rutland-road, asking to have the views of the Corporation thereon, and on the question as to whether the by-laws with respect to new streets and buildings in the Borough are not too stringent in operation in preventing the erection of the building referred to, and whether some modification of the by-laws might not properly be made so as to allow the erection of structures of the kind in question under similar circumstances. The Committee have decided to inform the Local Government Board that in their opinion the method of construction of the building was not desirable in view of the size and the purpose for which it was to be used, and that they did not consider that any modification of the by-laws was necessary. A plan has been passed for Mr. C. Living, for four houses, Claremont-street. A plan has been lodged by Mr. C. A. Nicoll for additions to factory in Stevenage-road.

Kensington.—The roadway of Aubrey-road is to be relaid with Kensington clinker blocks at an estimated cost of 128l. The footway on the west side of Pembroke-villas from Chapel-street to Chepstow-villas is to be reinstated and the kerb reset at an estimated cost of 119l. An application from Messrs. John Barker & Co., Ltd., for permission to extend the vaults and to reconstruct the pavements lights in connection with their premises in Wrights-lane has been acceded to.

Lewisham.—Eltham-road is to be repaired with granite bound with plasccon at an estimated cost of 400l. Plans have been passed for Messrs. Norfolk & Prior for three houses on the west side of Trilby-road.

Romford.—At the last meeting of the Rural District Council it was decided to accept the tender of Mr. B. W. Glenny, Romford, at 403s., for the construction of about 830 yds. of 12-in. and 18-in. diameter stoneware pipe band sewers, with manholes, etc., in the parish of Dagenham.

Watford.—The Urban District Council has accepted the tender of Messrs. Ensor & Ward, Watford, at 255s., for the supply and erection of the superstructure of a bandstand proposed to be erected in the park. They have also accepted the tender of Messrs. Clifford & Gough for supplying the foundation at 97l. and the pitch-pine floor at 47l.

West Ham.—The following plans have been passed:—Messrs. G. Munday & Sons, alterations and additions to No. 5, Albert-square, Stratford; Mr. R. C. Verlander, three houses, Oriental-road, Silvertown; Mr. R. Banks Martin, alterations to "Lord Nelson" beer-house, Bidden-street, Canning Town; Messrs. Stevens & Walker, alterations to Messrs. Russell Bros.' premises, High-street, Stratford; Messrs. F. & B. Horne, alterations and additions to No. 12, Wharf-road, Stratford; Mr. W. Harris, Conservative Club, Albert-road, Silvertown; Mr. W. Jackson, alterations to school, Russell-road, Custom House; Mr. J. W. Jeram, alterations and alterations to the Pure Bread Company's premises, Barking-road, Plawton; Mr. T. B. Blower, twelve houses, Preston-street, Silvertown; Messrs. Belfrage & Saville, ten houses, Prince Edward-crescent, West Ham; also four houses, King George-avenue, Connaught Garden Estate.

Custom House; Mr. W. J. Blackmur, cinematograph theatre, Adamson-road, Custom House; Mr. W. Stewart, alterations and additions, "Prince Edward" beer-house, Shilwell-street, Canning Town; Messrs. H. Tate & Co. Ltd., additions to factory, Thames Sugar Refinery, Silvertown; India-rubber and Gutta-percha Company, Ltd., factory at prent Silvertown; Mr. W. Gladding, various factory at Messrs. R. Ingham, Clark, & Co. premises, Abbey-road, West Ham.

Willesden.—The Engineer has been instructed to invite tenders for the wood-paving of part of Dyne-road. Sanction has been granted to the Education Committee to enlarge the junior mixed school in Wesley-road by 400 places. The following plans have been passed:—Messrs. W. Lawrence & Sons, architects, school, West Willesden; Mr. T. Kendall, seven houses, Mora-road, Crickwood; Mr. J. H. Fry, for Mr. H. H. H. eight houses, Odessa-road; Messrs. Meak Archer & Stoneham, for Messrs. J. A. L. L. and Co., additions to Stanley Works, Laton-road, Cricklewood; Messrs. Joseph Smith, for the London and North Western Railway Company, two blocks of artificial dwellings, Malvern-road, Kilburn; Mr. G. Paine, for Mr. M. Ward, six houses, Do Hill-lane; Messrs. Done, Hunter, & Co., Messrs. J. C. World & Co., seventeen houses, All Souls-avenue. A plan has been submitted by Messrs. W. Moss & Sons, for Dairy Supply Company, for a factory, Cumberland-avenue, Park Royal.

Wood Green.—The Surveyor has been instructed to prepare plans and estimates of cost of making up section 4 of Westdoro-road. The following plans have been passed:—Mr. G. Taft for Mr. E. A. Wyatt, two houses, Easton-mews, Lordship-lane; Mr. L. G. H. Luck for Messrs. Crosbie Bros. & Co., additions to glass factory, Bowd's Green-road; Mr. F. F. Tomlin for Messrs. Pilgrimage, new houses on site of Nos. 10, 12, 22, Stirling-road.

AUSTRALIAN COAT OF ARMS.

In the drawing reproduced on the next page the uppermost coat of arms is that of the Commonwealth of Australia, and the other symbols the State of Victoria. The shield charged on both shields are a conventional representation of the constellation of the Southern Cross.

The border introduces the characteristic birds, animals, and plants of the country. The centre figure at the top is emblematic of the abundant productivity of the country; the vine fills the rest of this border and the lower border. Wedge-tailed eagles are introduced in the top corners, a kangaroo in the lower corners. The characteristic curly-horned sheep occupy the central point of the side borders, while lyre birds and cockatoos are shown repeatedly. The drawing was prepared by a gentleman, a native of Victoria, Australia.

WORKMEN'S DWELLINGS, ST. IVES.

The Town Council of St. Ives have been negotiating with Mr. Glanville (agent for L. Cowley's estate) with reference to the acquisition of a plot of ground in the occupation of Mr. Dunn at Nangivay. The trustees of the estate were prepared to sell this land on certain conditions, and the Surveyor's plan of artisans' dwellings were considered.

NORTH BERWICK HIGH SCHOOL EXTENSION.—An addition to the North Berwick High School, involving a cost of about 3,000l., opened recently by Sir Henry Craik, K.C., M.P. Mr. James S. Richardson, Edinburgh was the architect. The additions consist of two portions. The one is a two-storied building, with basement, placed in the angle formed by the original building and the west extension, an attempt being made to show what has been a straggling series of rooms. In this portion accommodation is provided on the ground floor for the first and second intermediate classes, while on the first floor there is a room for the third intermediate class; the art-room—a well appointed and well lighted room. These are entered from upper story of the original building. To west of this building, and connected with it is a single-story building containing two rooms set aside for the elementary classes, and store for apparatus. The whole of the extension on the ground floor of the extension and the laboratory and the cooking room are set by a spacious and well-lighted corridor opening to the boys' and the girls' playgrounds and the gymnasium. The gymnasium has been fitted up with the latest equipment for physical exercises.



CLPAGE 1911

Coats of Arms of the Commonwealth of Australia and of the State of Victoria, with Emblematical Border.
Drawing by Mr. Charles L. Pace.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

- OCTOBER 4. — **Eslington R.D.C.** — 100 model houses for Merton Colliery, Durham. 24 per cent. on net cost to successful architect.
- OCTOBER 7. — **Barnsley.** — EXTENSION OF BATHS.—The Barnsley T.C. invite drawings for proposed extension of Public Baths. Three premiums are offered—50l., 30l., 20l. See advertisement in issue of August 11 for further particulars.
- OCTOBER 7. — **Evesham U.D.C.** — Designs for laying out site and erecting thereon thirty cottages. Particulars from the Clerk to the Council.
- OCTOBER 12. — **Coseley.** — Plans are invited for a school to accommodate about 200 children. Particulars from the Education Officers, Coseley, near Bilston.
- OCTOBER 14. — **Bristol.** — ALTERATIONS IN THE GRAND HOTEL. Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.
- OCTOBER 28. — **Salford.** — Extension of office accommodation on workhouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford. Limited to architects practising in Salford and district only.
- OCTOBER 30. — **Holland.** — STAINED GLASS WINDOW.—Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.
- OCTOBER 31. — **Marylebone.** — NEW MUNICIPAL BUILDINGS.—Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.
- NOVEMBER 1. — **City of St. Petersburg.** — MONUMENT TO ALEXANDER II.—Particulars in our issue of August 13, 1910.
- NOVEMBER 30. — **Cardiff.** — TECHNICAL INSTITUTE.—The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 13 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to other competitors. Mr. J. S. Gibson, assessor.
- NOVEMBER 30. — **Hastings.** — EAST SUSSEX HOSPITAL.—The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.
- DECEMBER 29. — **Glasgow.** — DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thompson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.
- JANUARY 29, 1912. — **Montevideo.** — Government palace (premiums, 2,125l. and 850l.) and town improvement scheme (premiums, 1,060l., 840l., and 425l.). Conditions may be seen at the Board of Trade, 73, Rensselaer-street, E.C.
- JANUARY 31, 1912. — **Australia.** — DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars.
- JULY 1, 1912. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf.
- NO DATE. — **Nottingham.** — BAPTIST CHURCH AND PREMISES.—Limited to Nottingham architects. Particulars from Messrs. Rofke & Jackson, solicitors, King-street, Nottingham.
- NO DATE. — **Bookdale Railway.** — EXTENSIONS.—Assessor, Mr. Alex. Graham, F.R.I.B.A.

Contracts.

BUILDING.

- The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.
- SEPTEMBER 30. — **Canborne.** — SCHOOL. Erection and completion of Sunday-school adjoining church in Trelowarren-street. Plans and specification with Mr. Sampson Hill, architect, Green-lane, Redruth.
- SEPTEMBER 30. — **Kirkcaldy.** — COMPRESSOR-HOUSE.—Erection of a compressor-house at gas-works. Drawings with Mr. J. Kincaid, Gas Engineer, Gas Office, Kirkcaldy.
- SEPTEMBER 30. — **Oswestry.** — BANDSTAND. Erection of a bandstand in Cae Glas Park. Particulars from Mr. A. W. Morris, Hon. Secretary, Coronation Celebration Committee, Oswestry.
- SEPTEMBER 30. — **St. Agnes.** — RESIDENCE.—Erection of a bungalow residence at Mithian. Plans and specifications at Gonvena House, Penryn.
- OCTOBER 2. — **Bolsover.** — CONVERTING.—For converting old meeting-house in Cotton-street into Board-room and Council offices. Plans seen, and specification and quantity on deposit of 2l. from Mr. W. G. H. Brown, Engineer and Surveyor, Bolsover.
- OCTOBER 2. — **Gillingham.** — GREENHOUSE.—Erection of a greenhouse in the park. Specification and particulars from Mr. J. L. Redfern, the Borough Engineer and Surveyor, Corporation Offices, Gillingham, Kent.
- OCTOBER 2. — **Houghton-le-Spring.** — CONVENIENCE.—Construction of a convenience for women. Plans and specifications seen, and form of tender from Mr. J. W. Holbrook, Surveyor of the Council, Newbottle-street, Houghton-le-Spring.
- OCTOBER 2. — **Nottingham.** — ROOMS, ETC.—For new bath and drying-rooms at Bulwell Hall Park Golf Pavilion. Plans seen, and specifications and quantities from Mr. Frank B. Lewis, Guildhall, Nottingham, on deposit of 1l. is.
- OCTOBER 2. — **Selly Oak.** — ROOM, ETC.—Construction of emergency exits and store-room, and for providing spray baths at the Public Baths, Tiverton-road. Quantities and forms of tender from, and plans and specifications seen, at the office of Mr. Ambrose W. Cross, A.C.I. at C.E. of 23, Valentine-road, King's Heath, the Engineer and Surveyor to the Council, on deposit of 1l. is.
- OCTOBER 3. — **Dowlais.** — SCHOOL.—Erection of infants' school at Pant. Plans seen, and specifications and quantities, on deposit of 1l. is, from the Deputy Surveyor, Town Hall, Merthyr Tydfil.
- OCTOBER 3. — **Merthyr Tydfil.** — REPAIRS, ETC.—Alterations and repairs to three cottages. Plans and specifications with the Borough Surveyor, Town Hall, Merthyr Tydfil.
- OCTOBER 3. — **Mold.** — SHOP.—Erection of a branch shop for the Hawarden and District Co-operative Society. Specification from Mr. P. A. Roberts, M.S.A., architect and surveyor, Earl-road, Mold. Deposit of 2l. 2s.
- OCTOBER 3. — **Pudsey.** — SHED. Erection of weaving shed. Drawings and quantities from Messrs. C. S. Nelson & Co. of Birkenshaw, architects, Sun-buildings, 15, Park-row, Leeds.
- OCTOBER 3. — **Longthorpe.** — ASYLUM.—Erection of sanitary annexes to the fever hospital. Plans and specification with Mr. G. T. Moore, C.E., 1 and 2, Foster-place, Dublin.
- OCTOBER 5. — **Upper Wortley.** — CONVENIENCES.—Erection of public and private conveniences, Upper Wortley, Leeds. Drawing and specification seen, and quantities from Mr. W. T. Langenshire, City Engineer, Municipal-buildings, Leeds.
- OCTOBER 6. — **Hubberston.** — RESIDENCE.—Erection of a residence near Hubberston. Plans and specification with Mr. J. B. Gaskell, architect and surveyor, Milford Haven.
- OCTOBER 6. — **Totton.** — DRILL-HALL.—Erection of a drill-hall. Plans, specifications, and conditions of contract with the architects, Messrs. Hair & Buckmill, 23, Portland-terrace, Southampton. Quantities on deposit of 2l. 2s.
- OCTOBER 7. — **Bromborough.** — OFFICES.—Erection of Council offices. Quantities and plans with the Surveyor to the Council, Mr. J. Clarke, 34, Castle-street, Liverpool. Deposit of 1l. is.
- OCTOBER 7. — **Middleton.** — CHAPEL.—For the levelling and laying out of a plot of land for a cemetery at Boshaw, and for erection of a mortuary chapel. Plans seen, and specifications and quantities, on deposit of 1l. is, from Mr. T. A. Fitton, architect, 29, Corporation-street, Manchester.
- OCTOBER 9. — **Allonby.** — OFFICES.—Erection of proposed new offices to Allonby Council School. Plans and specification at the office of the Education Committee, at the Works, 13, Earl-street, Carlisle.
- OCTOBER 9. — **Groesnaen.** — HOUSES.—Erection of thirty houses, for the Rhymney Iron Company, Ltd. Drawings and specifications with Mr. J. Llewellyn Smith, M.S.A., Aberdare.
- OCTOBER 9. — **Manchester.** — BATHS.—Construction of reinforced-concrete baths, at the baths, Burton-road, Withington. Specification and plan from the City Architect, Town Hall, Manchester, on deposit of 1l. is.
- OCTOBER 9. — **Rathmines.** — LIBRARY.—Erection of a Carnegie Library and Technical Institute. Drawing and specification by the architects, Messrs. Batheley & Hicks, 85, Marston-square, Rathmines. Quantity surveyors, Messrs. Patterson & Kemper, 95, Lower Leeson-street, Rathmines, Ireland. Deposit of 2l. 2s. for quantities.
- OCTOBER 9. — **Torquay.** — Erection of the Homelands Council School. Specification,

- quantities, and form of tender, on deposit of 5l., from the architects, Messrs. E. Appleton Son, Abbey-road, Torquay.
- OCTOBER 10. — **Chatham.** — ADDITIONS.—Erection of additions to the administration block at the Medway Union Workhouse Infirmary. Drawing and specifications with the architect, Mr. C. G. Bond, P.S.A., 384, High-street, Rochester. Quantities on deposit of 1l. is.
- OCTOBER 10. — **Morecambe.** — TRAMWAY.—Reconstruction of portion of the bare tramway. Plans and conditions seen, and specification and quantities, on deposit of 2l. 2s., from Mr. J. V. Hirst, A.Minst.C.E., Borough Surveyor, Town Hall, Morecambe.
- OCTOBER 12. — **Bucknall.** — EXTENSIONS.—Extensions to Bucknall Hospital. Mr. Eli Jones, M.S.A., Architect to the Board, 2, Albion-street, Hanley.
- OCTOBER 12. — **Didworthy.** — HALL, ETC.—Erection of a dining hall, kitchen, etc., at the Devon and Cornwall Sanatorium for Consumptives. Plans and specifications with Mr. D. Ward, Courtenay-street, Plymouth.
- * OCTOBER 13. — **Bishopstoke.** — COOKERY, ETC. ROOM.—The Southampton C.C. invite tenders for corrugated iron cookery and manual instruction room at Council school. See advertisement in this issue for further particulars.
- OCTOBER 14. — **Widnes.** — CHURCH.—For taking down of old St. Mary's Church, Widnes. A.C. Stephen Jones, Vicar, St. Mary's Vicarage, Widnes.
- * OCTOBER 16. — **Edinburgh.** — FOUNDATION.—The Secretary of State for War invites tenders for foundations to barracks and barracks blocks to Redford Infantry Barracks, Colinton, Edinburgh. See advertisement in this issue for further particulars.
- * OCTOBER 17. — **Macclesfield.** — ALTERATIONS AND ADDITIONS.—The Macclesfield Education Committee invite tenders for alterations and additions to Technical School premises. See advertisement in this issue for further particulars.
- OCTOBER 18. — **Gaerwen.** — ADDITIONS.—Erections and alterations to the Council school. Plans and specifications with Mr. Jos. Owen, F.R.I.B.A., County Architect, Menai Bridge.
- * OCTOBER 19. — **Leamington.** — SCHOOL.—The Hertfordshire Education Committee invite tenders for erection and completion of a new school. See advertisement in this issue for further particulars.
- * OCTOBER 21. — **Manchester.** — SCHOOL.—The Manchester Education Committee invite tenders for the erection of a school at Ancoats, Manchester. See advertisement in this issue for further particulars.
- OCTOBER 21. — **Newcastle, Ireland.** — HOUSE.—Erection of a dwelling-house at Newcastle, County Down. Plans and specifications with Messrs. E. & J. Byrne, architects, 4, Waring-street, Belfast.
- OCTOBER 31. — **Leigh-on-Sea.** — SCHOOL.—Erection of a school. Quantities, on deposit of 2l. 2s., from the architect, Mr. P. Brockbank, 14 and 15, County-chambers, Southend-on-Sea.
- * NOVEMBER 2. — **St. Albans.** — RESIDENCES.—The Middlesex County Council invite tenders for pairs of semi-detached residences for asylum attendants at Napsbury, St. Albans. See advertisement in this issue for further particulars.
- NO DATE. — **Durham.** — CHAPEL.—Erection of proposed new chapel. Plans seen, and quantities, on deposit of 2l. 2s., from Messrs. Joseph Potts & Son, architects, 57, John-street, Sunderland.
- NO DATE. — **Kildorrery.** — ADDITIONS.—For additions and alterations, etc., to the residence Mr. A. J. McDonald, V.S., Kildorrery. Plans and specifications from Mr. F. Coughlan, C.O. Mitchelstown.
- NO DATE. — **King's Lynn.** — ROOFS.—For new roofs, etc., to warehouses, in Chapel-street. Messrs. Ernest E. Colman, architects, King's Lynn.
- NO DATE. — **Leaholme.** — ROOFING.—For roofing ranges of farm buildings at Mount Pleasant Farm. Drawings and specifications seen, and quantities from Mr. Arthur E. Upton, architect and surveyor, 77, Baxtergate, Whitby.
- NO DATE. — **London.** — SCHOOL.—Erection of new school, Lordship-lane, Wood Green. Mr. Wm. P. Harding, Clerk of the Local Education Authority, Town Hall, Wood Green.
- NO DATE. — **Newport.** — PREMISES.—Erection of business premises. Plans and specification seen and quantities from the architects, Messrs. Ernest Page & Lister, Crown-chambers, Cambridge-road, Newport, Mon.
- NO DATE. — **Silverdale.** — PICTURE PALACE.—For picture palace alterations at the Temperance Hall, Silverdale. Write Mr. Howard, at the

BUILDING—continued.

date given at the commencement of each
graph is the latest date when the tender, or
names of those willing to submit tenders,

DATE.—**Sleights.**—RESIDENCE. Erection of
interior residence. Drawings and specifica-
tions and quantities from Mr. Arthur E. Young,
architect and surveyor, 77, Buxtergate, Whitby.
DATE.—**Swansea.**—OFFICES. Erection
rehab and offices. Plans and specification
and quantities, on deposit of 2l. 2s., from
architects, Messrs. C. S. Thomas Meager &
J. Salisbury-chambers, 15, Wind-street,
Swansea.

DATE.—**Wetherall.**—HOUSE, ETC.—Erection
completing a new house and additions to
existing premises at the Green. Messrs. Oliver
Edgum, architects, Carlisle.

DATE.—**Windhill.**—SCHOOLS. For addi-
tions and alterations to Carlisle. Also
additions and alterations to Conservative
Bowling Old-lane, Bradford. Quantities
Mr. Thomas L. Dixon, architect, surveyor,
at Bowling Old-lane, Bradford.

GINEERING, IRON, AND STEEL.

OCTOBER 2.—**Wednesfield.**—BRIDGE. For the
bridge and reconstruction of Pinfold
Bridges. Plans and specifications, on
deposit of 2l. 2s., from the Council's Surveyor
Engineer, Mr. Ernest Rogers, M.I.Mun.E.,
Eley-lane, Wednesfield.

OCTOBER 3.—**Silloth.**—SEA WALL. For exten-
sion of the Silloth sea wall. Drawings seen, and
specification and quantities from the engineer,
C. Boyd, A.M.Inst.C.E., 18, Bank-street,
Lancaster, on deposit of 1l.

OCTOBER 5.—**Quarry Mill.**—RESERVOIR.—Erec-
tion of a service reservoir. Plans and specifica-
tion from Mr. Joseph Graham, Civil Engineer,
Barnstaple, Carlisle. Quantities on deposit
of 1l.

OCTOBER 7.—**Tilbury.**—HEATING.—The
"Empire Edwards" District Cottage Hos-
pital, Tilbury, Essex, invite tenders for heating
plant. See advertisement in this issue for
particulars.

OCTOBER 16.—**Nantwich.**—WATERWORKS.—For
construction of waterworks. Particulars and
specifications seen, and quantities, on deposit of
1l., from the consulting engineer, Mr. Baldwin
Wm., M.Inst.C.E., Parliament-mansions,
Victoria-street, Westminster.

OCTOBER 30.—**Newport.**—MON.—BRIDGE.—Con-
struction of a ferro-concrete bridge across the
Usk. Particulars from Mr. H. Tremelling,
Inst.C.E., Borough Engineer, Town Hall,
Newport.

FURNITURE, PAINTING, MATERIALS,

etc.
SEPTEMBER 30.—**Hardingstone.**—PAINTING.—
For painting outside of Workhouse. Specifica-
tions at the Workhouse, Wootton. Mr. John R.
Phillips, Clerk, 2, St. Giles-square, Northampton.

SEPTEMBER 30.—**Saunderton.**—PAINTING.—For
painting, etc., the inside of the Union House.
Specifications at the Union House. Mr. B. L.
Reynolds, Clerk to the Guardians, 12, Easton-
street, High Wycombe.

OCTOBER 2.—**Nottingham.**—PAINTING.—For
interior cleaning and painting at the Bulwer
Forest golf pavilion. Specifications and quan-
tities from Mr. Frank B. Lewis, City Architect,
Gulldhall, Nottingham, on deposit of 1l. 1s.

OCTOBER 3.—**Driffield.**—PAINTING.—For paint-
ing inside wood and iron work of the engine shed
and depot. Specification from Mr. T. Cason
Beaumont, Surveyor, Driffield, Yorks.

OCTOBER 3.—**Exmouth.**—PAINTING.—For paint-
ing kitchen, pantry, and scullery at the Exmouth
Cottage Hospital. Mr. L. Tracey, Hon. Sec.

OCTOBER 3.—**Stockport.**—PAINTING.—For
painting at several of the parks. Specification
from Mr. John Atkinson, A.M.Inst.C.E.,
Borough Surveyor, Town Hall, Stockport.

OCTOBER 4.—**Wellingborough.**—PAINTING.—
For painting several of the Council buildings.
Specifications from Mr. B. Y. Harrison, Sur-
veyor, Market-square, Wellingborough.

* OCTOBER 11.—**London.**—RESTORING STONE-
WORK.—The Hammersmith B.C. invite tenders
for cleaning, decorating, and treating with
preservative the stonework of Passmore Edwards
Library, Uxbridge-road, W. See advertisement
in this issue for further particulars.

ROADS, SANITARY AND WATER

WORKS.

SEPTEMBER 30.—**Barnstaple.**—SEWER.—For the
relaying of portion of Bickington sewer. Quan-
tities and specification from Mr. E. G. Kingwell,
Surveyor, 55, Bampton-street, Barnstaple.

OCTOBER 3.—**Chislehurst.**—GRANITE.—Supply
of broken granite. Particulars from Mr. H. E.
Knight, Clerk of the Council, Council Offices,
Chislehurst.

OCTOBER 3.—**Hunslet.**—SEWAGE.—For sewage-
disposal works. Plans and specification with
Mr. W. B. Pindar, Clerk, Leek-street, Hunslet,
Leeds.

OCTOBER 3.—**St. Albans.**—ROADS.—For
making-up roads. Plan, specification, and con-
tract seen, and quantities from the Surveyor,
Mr. Henry F. Mence, 11, St. Peter's-street, St.
Albans, on deposit of 1l. 1s.

OCTOBER 4.—**London.**—ROAD.—For completion
of roads round the generating station at the

Imperial Institute, South Kensington. Draw-
ings and specification seen, and quantities from
H.M. Office of Works, etc., Storey's-gate, S.W.
Deposit of 1l. 1s.

OCTOBER 4.—**St. Sampson.**—DRAINAGE.—For
laying of sewers and water pipes, the erection
of a pumping-station, and sinking of a well.
Plans and specifications from Mr. T. J. Guil-
bert, States Surveyor.

OCTOBER 7.—**Harrow.**—SEWAGE.—For laying
sewer pipes. Plans and specifications seen, and
quantities from Mr. J. P. Bennetts, Engineer
and Surveyor, Harrow-on-the-Hill.

OCTOBER 9.—**Bury.**—SEWER.—Construction of
brick sewer. Drawings seen, and specifications
and quantities from the Borough Engineer, on
deposit of 2l.

OCTOBER 9.—**Bothwell.**—ROADS.—For laying
York paving, etc. Specifications and quantities
from Mr. J. Southwart, Engineer and Surveyor,
Council Offices, Bothwell, on deposit of 1l. 1s.

OCTOBER 9.—**Walton-on-Thames.**—MATERIALS.—
For supply of road materials. Forms of tender
from Mr. R. Wilds, Surveyor, Council Offices,
Walton-on-Thames.

OCTOBER 10.—**Bedlington.**—MATERIALS.—For
supply of materials. Particulars from Mr. J. E.
Johnston, Surveyor, Bedlington.

OCTOBER 10.—**Sheerness.**—MATERIALS. Supply
of road material. Mr. T. F. Berry, the Sur-
veyor to the Council.

* OCTOBER 10.—**West Ham.**—ROAD-MAKING.—
The West Ham B.C. invite tenders for making-
up certain roads in the borough. See adver-
tisement in this issue for further particulars.

OCTOBER 11.—**Bollington.**—MACADAM.—Supply
of granite or basalt macadam. Particulars from
Mr. S. Knight, Clerk, Bollington, near Mac-
clesfield.

OCTOBER 11.—**London.**—ROADS, ETC.—For sewer-
ing, paving, and making good Woodside
Cottages, Churchyard-bottom, Hornsey. Forms
of tender, etc., from Mr. E. J. Lovegrove,
Borough Engineer and Surveyor, Municipal
Offices, Highbury.

OCTOBER 11.—**Rawtenstall.**—STREETS.—For
various street works. Plans seen, and specifi-
cations and quantities from Mr. J. Johnson, C.E.,
Borough Surveyor, Municipal Offices, Rawten-
stall. Deposit of 2l. 2s.

OCTOBER 16.—**Gowerton.**—SEWERS.—For con-
struction of cast-iron and earthenware sewers.
Plans and specifications from Mr. T. T. Williams,
Surveyor, Alexandre-road, Swansea. Deposit of
2l. 2s.

NOVEMBER 6.—**Barnet.**—SEWERAGE, ETC.—For
construction of sewers, engine-house, etc. Specifi-
cation and drawings with Mr. W. Fairley,
M.Inst.C.E., Parliament-mansions, Victoria-
street, Westminster. Quantities on deposit of
3l. 3s.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
CLERK OF WORKS	Zandbar P.W. Dept.	See advertisement in this issue	Oct. 7
LECTURER IN WOODWORK AND DISCIPLINE MASTER	London C.C.	See advertisement in this issue	Oct. 6

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
LANDING MATERIALS, HACKNEY, N.E. On the Site	Vervard & Yates	Oct. 5
LANDING MATERIALS, SOUTH NORWOOD—On the Premises	Hooker & Webb	Oct. 10
SALAL SITE (FREEHOLD), MARGATE—White Hart Hotel, Margate	J. Beeve & Son	Oct. 16
FREEHOLD BUILDING SITE, ST. HELEN'S, E.C.—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct. 18
FREEHOLD BUILDING, HARROW WEALD—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct. 18
FREEHOLD BUILDING PROPERTY, EDGWARE—At the Mart	Walton & Lee	Oct. 24

OBITUARY.

Mr. M. Rosenheim.

Mr. Max Rosenheim, F.S.A., whose death
was announced last week, was a leading
member of the Burlington Fine Arts Club and
a person of great national collection of
paintings, Kensington and Bloomsbury. Of his
collection of art works we may mention his
savings and XVth-XVth century German
Italian medals. We understand that he
bequeathed with his own hands the sets of
the heraldic engravings in the British
Museum.

Mr. J. P. Pritchett.

On the 22nd of this month there passed
at "Glendower," Teddington, at the age
of 71, Mr. James Pigott Pritchett, architect,
Barnstaple. He was born in York, May 14,
1840, and was educated at St. Peter's School,
Barnstaple. After serving his time with his father,
late Mr. J. P. Pritchett, of York (who
died on his own account in York for
five years), he joined him in partnership
in 1855, and in 1854 he succeeded to the
firm in Darlington of his brother-in-law,
late John Middleton, who removed to
London. From 1854 to about 1810 he was
engaged in an active general practice, though,

perhaps, he was best known for his
ecclesiastical work in the North of England.
His son, Mr. H. D. Pritchett, was associated
with him in the practice from about 1880, and
in 1900 was taken into partnership, and is now
carrying on the same. His works com-
prise seventeen cemeteries, chapels, etc., in
various parts of the country, twenty five new
churches, twenty restorations and additions to
churches, twenty-eight Nonconformist chapels,
sixteen parsonages, eighteen schools and Sun-
day schools, banks, training college at
Darlington, offices, hotels, and shops, and over
forty houses and cottages. He was surveyor
to the Cleveland Estate at Darlington. He
was connected with two or three archaeological
societies, and frequently lectured and gave
papers on archaeological subjects, and was for
a good number of years a Fellow of the
Royal Institute of British Architects.

Mr. S. Putney.

We regret to announce the death of Mr.
Samuel Putney, which took place on the
19th inst., at his residence, 2, Park-avenue,
Willesden Green, N.W., after an illness of
some few weeks. He was born in London on
November 3, 1824, was the founder in 1846 of
the well-known firm of timber and hardwood
merchants bearing his name, which, since his
retirement, has been carried on by his sons,

together with many of his old staff, at
Paddington and at other branch depôts in
London. In his early days he for several
years, in his leisure moments, studied the art
of oil painting and water-colour drawing
under the guidance of Frank Walton, Beale,
and other artists of known repute. Always a
lover of music, he played both the violin and
piano with considerable ability. He initiated,
patented, and manufactured the then new and
now perfected system of improved flooring
and wainscoting under the style and title of
"Putney's Pavodilos," for which he obtained
highest awards at the Inventions Exhibition,
London, in 1885, and again at the Liverpool
Exhibition in 1886.

FOREIGN AND COLONIAL.

Building Material for Southern Nigeria.

The *Lagos Customs and Trade Journal* of
August 17 contains a report by the District
Commissioner at Jebu-Ode (a town estimated
to have a population of 22,000, from which
it appears that there is a large importation
into that district of building material, such as
corrugated iron, nails, hinges, locks, bolts, etc.,
required in connexion with the construction of
churches and mosques. Almost every village,

says the Commissioner, has at least one iron-roofed church as well as a Mohammedan mosque. The report further states that a trade might probably be done in church furniture and ornaments.

Austria-Hungary.

Referring to the proposed construction of a new water supply aqueduct and the erection of a market hall in Mostar (Bosnia), H.M. Consul at Sarajevo reports that tenders are to be invited for these works and also for the construction of a bridge and of a slaughter-house. The cost of the bridge is estimated at 257,000 crowns (about 10,700l.).

Building Material for Brazil.

The *Diário Oficial* publishes a decree earmarking, in favour of the Ministry of Justice and Home Affairs, an extraordinary credit of 2,353,336 milreis (about 158,000l.) for the purpose of completing the building of police cavalry barracks in the Avenida Salvador de Sá, Rio de Janeiro.

Building Materials for Uruguay.

The *Diário Oficial* contains a notice, issued by the Ministerio de Hacienda, accepting the estimates submitted by Messrs. Acesta y Lara y Guerra, for the erection of three warehouses in the harbour of Montevideo at a total cost of 103,600 pesos (about 23,000l.).

PATENTS.

APPLICATIONS PUBLISHED.*

- 18,145 of 1910.—Albert Thompson and Samuel Norbury: Paper window-blinds.
19,845 of 1910.—George William Base: Means for attaching door-handles and the like to their spindles.
20,415 of 1910.—Norman Harold Eustace Trotman: Domestic fireplaces.
22,795 of 1910.—Harold Merrylees and Merrylees & Co.: Construction of building blocks, bricks, slabs, or the like.
23,120 of 1910.—George John Money: Fastening devices or latches for doors, windows, and the like.
25,303 of 1910.—Henry William Rayner: Device for securing window sashes and the like.
5,571 of 1911.—Hugo Burmann: Printing of wall-papers and the like.
5,597 of 1911.—Ernest Harry Archer: Parquet floors.
10,300 of 1911.—John Belch Smyth: Cleaning and disinfecting compound for use in connexion with wall papers and such like.
10,480 of 1911.—John Jones: Movable false bottom for fire-grates.
11,542 of 1911.—Frederick William Titshall: Roof and like glazing.
12,345 of 1911.—Adolfo Ghira: Manufacture of reinforced concrete beams.
12,482 of 1911.—Ferdinand Burchartz: Floors and ceilings.
12,675 of 1911.—Ferdinand Burchartz: Floors and ceilings.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

- September 9.—By R. L. ASHTON.
Bradworthy, Devon.—Berrison Estate, 179 a. 1 r. 26 p. f. 42,216
September 12 to 15.—By FRANK LLOYD & SONS.
Criccieth, c/c, Carnarvon.—Farms and accommodation lands, 5,589 acres, f. (in lots) 66,573
September 13.—By G. THORLOPE & SONS.
London Colney Herbs.—Five cottages, f. 550
Accommodation land, 22 a. 2 r. 22 p. f. 910
September 14.—By HALL, PAINE, & GOLDENRITH.
Shottersmill, Surrey.—Pittfold Mill and 3 a. 1 r. 30 p. f. 670
Two cottages and 36 a. 2 r. 37 p. f. 6,580
Eight plots of land, f. 755
September 18.—By CROPPER, STEWARD, & CATTILL.
Braunston, Northants.—Cattle Inn, f. 285
September 19.—By NICHOLSON, GREAVES, & CO.
Sheffield, Yorks.—Fourteen licensed houses, f. and l. 28,200
Britannia Inn, f. 530
4 and 6, Ward st. and The Beehive p. h., l. 150
83, St. Phillips-rd., f. 110
September 20.—By JONES, SOX, & DAY.
West Ham.—Berking-rd., The Primrose (off-licence), lease for 13 yrs. at 60l., with good will and possession. 1,400
By A. BRUNSWICK & SONS.
Hooe, Sussex.—The Lamb Inn, c. 1,100
By WIAAT & SONS.
Chichester, Sussex.—227, Oving-rd., l., y. r. 25l. 310
By J. H. BRADLEY & SONS.
Flawborough, Notts.—Flawborough Estate, 758 acres, f. 13,082
By WINTERTON & SONS.
Abbots Bromley, Staffs.—Accommodation land, 6 a. 4 r. 5 p. f. 2,087
F. r. v., reversion in 63 yrs. 88

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

By KNIGHT, FRANK, & RUTLEY.

Aberporth, Monmouth.—Pentecost Estate, 917 acres, f. 42,350

September 21.—By BEKEN & STOKES.

Walthamstow.—54, St. Andrews-rd. (s.), f. y. r. 38l.

By GEO. BILLINGS, WRIGHT, & CO.

Stanford.—120 to 124 (even), Vicarage-h., u.t. 60 yrs, g.r. 24l., w.r. 156l.

Hackney.—31, Forbury-rd., u.t. 75 yrs, g.r. 6l. 10s, e.r. 42l.

89, Lauriston-rd. (s.), u.t. 40 yrs, g.r. 77l.

77, Lauriston-rd., u.t. 31 yrs, g.r. 6l. 10s, w.r. 76l. 14s.

By DANK & LUCAS.

Horton Kirby, Kent.—New-rd., f.g. rents 7l., reversion in 80 yrs.

By JOHN G. DEAN & CO.

Batham.—65 and 67, Boundaries-rd., f., w.r. 89l. 4s.

By MARK LEBEL & SON.

Tottenham, Belton-rd., Beltons Stores, f., y. r. 36l.

Old Ford.—Roman-rd., l.g. rents 30l. 10s, u.t. 40 yrs, g.r. 8l.

Bethnal Green.—21, 23, and 25, Olm-st., u.t. 39 yrs, g.r. 15l., w.r. 120l. 18s.

By ROBSON & PERKINS.

Finchley Park.—10, Vale-rd., and 107, Eade-rd., u.t. 86 yrs, g.r. 7l., w.r. 57l. 4s.

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; l.s. for lease; st. for street; rd. for road; an. for acre; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; glns. for gardens; yd. for yard; gr. for grove; h.h. for farmhouse; p.h. for public-house; o. for office; s. for shops; ct. for court.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 1s. 6d. per annum, with delivery by Friday Morning's Post in London and the suburbs, and by other means to Canada, post-free, 25s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 30s. per annum.
Subscriptions payable to J. MORGAN should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

PRICES CURRENT OF MATERIALS.

*. Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.		£ s. d.
Per 1000 Alongside, in River.		
Best Stocks	13	0
Picked Stocks for Facings	2	7
Per 1000, Delivered at Railway Depot.		£ s. d.
Flettons	1	0
Best Fareham	1	0
Best Red Pressed	3	12
Burton Facing	5	0
Best Blue Pressed	3	15
Staffordshire	4	0
Do. Bulstone	4	0
Best Stourbridge	3	14
Best White and Ivory Glazed	10	17
Stretchers	10	7
Headers	10	7
Fire Bricks	14	0
Glazed Bricks	14	7
D'ble Stretchers	14	7
Double Headers	14	7
One Side and two Ends	17	6
Two Sides and one End	18	7
Splays & Squints	15	7
Best Portland Cement	29	0
Best Ground Blue Lime	19	0
Second Quality White and Dipped Salt Glazed	41	5s.
per 1000 less than best.		
Thames and Pitt Sand	6	9
per yard, delivered.		
Thames Ballast	5	3
Best Portland Cement	29	0
Best Ground Blue Lime	19	0
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.		
Grey Stone Lime	12s. 6d.	per yard delivered.
Stourbridge Freely in sacks	7s. 6d.	per ton at dry dpt.

STONE.		£ s. d.
Per Ft. Cube.		
BATH STONE—delivered on road waggon, a. d. Paddington Depot.		1 6d.
Do. do. delivered on road waggon, Nine Elms Depot.		1 8d.
PORTLAND STONE (30 ft. average)—		
Brown Whitbed, delivered on road waggon, Paddington Depot, Nine Elms Depot, or Finchley Wharf.		2 1
White Bashbed, delivered on road waggon, Paddington Depot, Nine Elms Depot, or Finchley Wharf.		2 2d.
Per Ft. Cube, delivered at Railway Depot.		
Closeburn Red	1 10	
Beer in blocks	1 6	
Greenskin in blocks	1 10	
Durley Dale in	2 0	
Freestone	2 4	
Talcor & Gwespys	2 8	
Stone	2 8	

STONE (Continued).

YORK STONE—Robin Hood Quality.		
Per Ft. Cube, Delivered at Railway Depot.		
Scrapped random blocks		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	
6 in. rubbed two sides ditto, ditto	2	
3 in. sawn two sides slabs (random sizes)	13	5
2 in. to 2 in. ditto, ditto	13	5
1 in. to 2 in. ditto, ditto	13	5
HARD YORK—		
Per Ft. Cube, Delivered at Railway Depot.		
Scrapped random blocks		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	
6 in. rubbed two sides ditto	2	
3 in. sawn two sides slabs (random sizes)	13	5
2 in. self-faced random flags	13	5

SLATES.

Per 1000 of 1200 at Railway Depot.		£ s. d.
In. In.		
20x10 best blue	13	2
Bauger	13	2
20x12 ditto	13	7
20x10 1st quality	13	7
ditto	13	0
20x12 ditto	13	0
18x8 ditto	7	5
22x10 best blue	13	12
Portsmouth	12	12
18x8 ditto	6	12

TILES.

At Railway Depot.		£ s. d.
Best plain red roofing (per 1000)	42	0
Hip and Valley (per doz.)	3	7
Best Broseley (per 1000)	50	0
Do. Ornamental (per 1000)	52	6
Hip and Valley (per doz.)	4	0
Best Buxton red brown, or brindle (per 1000)	57	6
(Edw. doz.) (per 1000)	60	0
Do. Ornamental (per 1000)	60	0
Hip (per doz.)	4	0
Valley (per doz.)	3	0
Best "Hartshill" brand, plain sand-faced (per 1000)	50	0
Do. pressed (per 1000)	47	0
Do. Ornamental (per 1000)	50	0
Hip (per doz.)	4	0
Valley (per doz.)	3	0
Staffords (Hartley) Reds or Brindles (per 1000)	49	0
Hand-made sand-faced (per 1000)	45	0
Hip (per doz.)	4	0
Valley (per doz.)	3	0

WOOD.

At per standard.		£ s. d.
Deals: best 3 in. by 11 in. and 4 in.	11	10
by 5 in. and 11 in.	13	10
Deals: best 3 in. by 9 in.	13	10
Battens: best 2 in. by 7 in. and 8 in.	11	10
Battens: best 2 in. by 6 in. and 3 in.	10	10
Deals: seconds	1	0
Battens: seconds	1	0
2 in. by 11 in. and 2 in. by 6 in.	9	10
2 in. by 4 in. and 2 in. by 5 in.	9	0
Foreign Sawed Boards—		
1 in. and 1 1/2 in. by 7 in.	0	10
more than battens		
1 in.	1	0
Fir timber: best middling Danzig or Menel (average specification)	5	0
Seconds	4	0
Small timber (8 in. to 10 in.)	3	17
Small timber (6 in. to 8 in.)	3	5
Swedish balks	2	12
Pitch-pine timber (30 ft. average)	4	10

JOINERS' WOOD.

At per standard.		£ s. d.
White Sea: first yellow deals,		
3 in. by 11 in.	24	10
3 in. by 9 in.	22	10
Battens 3 in. and 3 in. by 7 in.	17	0
Second yellow deals, 3 in. by 11 in.	19	0
" " 3 in. by 9 in.	15	0
Battens 3 in. and 3 in. by 7 in.	14	0
Third yellow deals, 3 in. by 11 in.	14	0
11 in. and 9 in.	14	0
Battens 3 in. and 3 in. by 7 in.	11	10
Petersburg: first yellow deals,		
3 in. by 11 in.	21	10
Do. 3 in. by 9 in.	18	10
Battens	14	0
Second yellow deals, 3 in. by 11 in.	16	10
" " 3 in. by 9 in.	14	0
Battens	11	10
Third yellow deals, 3 in. by 11 in.	13	10
Do. 3 in. by 9 in.	13	0
Battens	10	10
White Sea and Petersburg:		
First white deals, 3 in. by 11 in.	15	0
" " 3 in. by 9 in.	14	0
Battens	11	10
Second white deals, 3 in. by 11 in.	14	0
" " 3 in. by 9 in.	13	0
Battens	10	10
Pitch-pine: first yellow deals,		
Under 2 in. thick extra	0	10
Yellow Pine—First, regular sizes	44	0
Odiments	32	0
Seconds, regular sizes	33	0
Odiments	23	0
Kursk Pine—Planks, per ft. cube	0	3
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0	3
Small " " " "	0	2
Waincoat Oak Logs, per ft. cube	0	5
Dry Waincoat Oak, per ft. sup. as inch	0	8
" " do. " "	0	7
Dry Mahogany—Hollow, per ft. sup. as inch	0	10
Selected, Fig. per ft. super. as inch	0	1

VARNISHES, &c.

Pine Pale Oak Varnish	£ s. d.
Pale Oak Oil	0 8 0
Superfine Pale Oak	0 12 6
Pine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Pine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Pine Pale Mahogany	0 10 0
Finest Pale Durbar	0 12 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
Extra Pale Green	0 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	10 0 0
Best Black Japan	0 16 0
Oil and Mahogany Stain	0 10 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Cracking	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for their return.

ence, unless it has specially asked for them. The Editor's consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from intimation to this effect. The Editor should not contribute to write an article, or to execute or lend a design for publication, without being subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a copy of the article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be sent to the Editor, whether the author, whether they have been formally asked for or not.

GATESHEAD.—For the superstructure of the new asylum at Stannington, near Morpeth, for the Corporation of Gateshead. Messrs. George T. Rine and H. Carter Pegg, architects, Westminster:—

Miller	£85,410	Easton	£79,960
Nicholson	84,811	Pethick	77,777
Werr	84,000	Moss, Lough-	
Lowry	83,200	borough ^a	76,600
Cooper	82,449	White	76,599
Pringle	81,200		

HARROW (Middlesex) — For building the proposed new Church of St. Peter's. Mr. G. H. Fellowes Prynne, F.R.I.B.A., architect, 6, Queen Anne's-gate, Westminster, S.W. Quantities prepared by Mr. R. Henry Hale, F.S.I., of 6, Queen Anne's-gate, Westminster, S.W. :—

Foster & Dicksee	£9,685	0	0
Hollnald & Hammen	9,333	0	0
Thomas & Edge	9,136	0	0
Walden & Cox	9,069	8	0
Thompson & Sons	9,000	0	0
Franks & Ltd.	8,900	0	0
Goddard & Sons	8,837	0	0
J. Greenwood, Ltd.	8,863	0	0
Prestige & Co.	8,754	0	0
J. Honour & Sons, Ltd.	8,662	0	0
W. J. Dickens	8,490	0	0
R. Watkins & Sons	8,480	13	0
Bowman & Sons	8,430	13	0
J. Longley & Cannon	8,245	0	0
Webster & Cannon, Aylesbury†	8,188	0	0

† Canonically accepted.

HENLEY-IN-ARDEN. For the construction of sewage works, for the Rural District Council.
J. Brook, Surveyor to the Council:—
Ainds, Ltd. 26, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Thompson & Co.	6,834	Brener & Co.	25,760
Chamberlain	6,328	Elliott & Co.	5,683
G. P. Trentham	6,100	Childs, Withers	5,630
T. Vade & Co.	6,064	G. Holloway	5,575
W. Thorpe	5,988	Boswell	5,301
Currall, Lewis, & Martin	5,869	Morley & Sons	5,243
Price & Co.	5,764	A. Hill & Co.	5,220
		Buckley, Bradford.	5,196

HURSLEY. -For erection of four pairs of cottages on the Hursley Estate, near Winchester. Mr. J. E. Thorold, agent to Hursley Estate:

W. J. Hood	£2,391	7	0	Hales Bros.	£2,160	0	0
W. H. Paul	2,630	0	0	T. Draper	2,166	0	0
Musselwhite & Sapp	2,587	0	0	W. Juxpe	1,975	0	0
J. Franklin	2,570	0	0	E. G. Garnett	1,889	10	6
L. W. Bushell	2,508	13	10	O. J. Smith	1,835	0	0
T. Grace	2,320	0	0	C. A. Hutch- ings	1,790	0	0
J. Neholl & Co., South- hampton*....	2,234	0	0	W. Harris	1,740	0	0
H. W. Adams	2,200	0	0	Parker & Cripps	1,660	0	0

KETTERING.—For erection of Carey Memorial Church. Messrs. Cooper & Williams, architects, Kettering. Quantities by the architects:—

	work in Oak.	work in Pitch-pine.
Industrial Co operative Society, Ltd.	£3,888	£3,803
Smith, Edmunds, & Co.	3,639	3,538
Phillips & Slow	3,059	3,489
Smith & Bunning ...	3,069	3,457
A. Bamford	3,398	3,348
J. Norris	3,431	3,201
C. Andrew	3,310	3,084
O. P. Drever	3,166	3,000
A. Lewin & Son	3,199	*2,979
	[All of Kettering.]	

KINSALE.—For erection of forty-six cottages. Mr. R. Evans, C.E., engineer, 53, South Mall, Cork.—Philip McCarthy, Kinsale* £130 each.
[Only tender received.]

LIANTANAM.—For erection of a residence near "The Greenhouse," for Mr. Wm. Richards, of "Pennsylvania," Liantanam. Mr. A. Gordon Babbidge, architect, Pontypool:—
H. J. Herbert & Co. £1,800 0
R. Partridge 1,800 0
Kirby & Westcott 1,748 0
Poulton & Whiting 1,700 0
J. Burgoyne & Son £1,559 0
C. W. Simmons & Co. 1,413 0
Truscott 1,428 10
W. Branch, Aberystwyth 1,350 0

LONDON.—For erection of lavatory accommodation and shelters at Wornholt Park, Hammersmith. Mr. H. Mair, Borough Surveyor, Town Hall, Hammersmith. Quantities by Messrs. C. Stanger & Son, Finsbury-pavement, E.C.4.:—
Tinson Bros. £894 4 1
J. Slade 856 18 0
F. Handover 853 5 11
Gasson, Cookerill, & Co. 780 0 0
C. Dearnis & Co. 740 0 0
T. Millman 697 19 8
J. Bull 697 19 8
J. Chessum & Sons 694 0 0
Johnson & Mannes 680 0 0
F. & G. Foster 674 0 0
Thomas Bendon, Ltd. £673 0 0
Jarman & Co. 651 0 0
L. Lown & Co. 651 15 7
W. J. Wilkinson 649 12 10
Sons, Ltd. 642 8 8
J. Bonney & Son 625 0 0
F. W. Hampton, Warwick-road, 614 0 0
Ashford, Middlesex* 593 8 3

LONDON.—For erecting a garage in the rear of Nos. 29-31, Nunhead-lane, Peckham, S.E., for the National Steam Car Company, Ltd. Mr. George A. Landow, F.R.I.B.A., architect, 9, Regent-street, Waterloo-place, S.W.:—
J. Carmichael £4,835
Johnson & Co. 4,692
Kirk & Kirk 4,678
H. & E. Lee £4,630
G. Parker & Sons 4,499
J. Marsland & Sons* 4,385

LONDON.—For pulling down Nos. 15, 15a, and 17, Green-street, Chelsea, S.W., and rebuilding the "Admiral Codrington" public-house, on the site of same, for the New Westminster Brewery Company, Ltd. Mr. George A. Landow, F.R.I.B.A., architect, 9, Regent-street, S.W.:—
J. Douglas £3,127
Kirk & Kirk 2,937
Perry & Co. (Bow), Ltd. 2,875
J. Marsland & Sons £2,836
F. J. Strutt & Co. 2,798
Snowin Bros. & Co.* 2,685

LONDON, S.W.—For drainage works at Wandsworth cemetery, for the Wandsworth Borough Council. Mr. P. Dod, M.Inst.C.E., Borough Engineer:—
W. J. Harris £525 0 0
S. Kavanagh & Co. 387 0 0
E. & B. Hes 250 14 6
W. Pearce 222 0 0
J. Mowlem & Co., Ltd. 213 0 0
G. Incey £199 19 0
W. & C. Brown 197 0 0
G. Bell & Sons, Ltd. 189 0 0
S. Lane 184 0 0

* Recommended for acceptance.

SHANKILL (Co. Dublin).—For new Carnegie Free Library. Messrs. Doolin & Butler, architects, Dublin. Quantities by Messrs. D. W. Morris & Co., surveyors, Dublin:—
Farmer Bros. £1,101 7 9
H. J. Monks 1,050 0 0
Duncan 980 0 0
Dougan 976 8 6
Kinlen 969 9 7
Mosley 850 0 0
Dowling £827 0 0
H. Pemberton 800 0 0
L. Monks 800 0 0
G. Bower, Ballybrack* 850 0 0
B. Pemberton 855 0 0

SIDCUP.—For erection of a fire brigade station. Mr. Wm. Augustus Farnham, Surveyor, Council Offices:—
E. J. Knight £1,199 9 6
J. & M. Patrick 1,104 0 0
E. J. Garlick & Co. 1,170 19 0
Kittman Bros. 1,112 0 0
R. A. Lowe & Co. 1,120 0 0
W. Gibson & Co. 1,118 0 0
J. Howard 1,094 0 0
W. Pool 1,069 0 0
Thomas & Edge £1,133 0 0
Myall Bros. 1,010 0 0
W. Smith & Sons 1,035 10 0
F. Webster & Sons 1,039 0 0
R. & J. Butler 1,001 0 0
J. W. Ellingsham* 988 0 0

[Surveyor's estimate, £988 19s. 4d.]

SLEAFORD.—For works in connexion with waterworks for the parish of Burton Pedwardine, for the Sleaford Rural District Council. Mr. W. B. Marsden, Sleaford, engineer and surveyor:—
J. W. Pearce £2,174 12 0
Bushby & Sons 2,168 0 0
J. Clarke 2,088 0 0
S. Porter 2,040 0 0
C. Chamberlain 1,775 0 0
Crawford Bros. 1,755 19 10
C. Hill & Son 1,745 0 0
W. H. Hill 1,474 0 0
F. Hopper £1,600 3 0
F. Langley 1,540 19 0
Pattinson & Sons, Ltd. 1,500 0 0
W. H. Hill 1,489 2 0
J. T. Barnes, Sleaford* 1,450 0 0
J. Hudson 1,391 0 0

SLEAFORD.—For works in connexion with waterworks at Scopwick and Kirkby Green, for the Sleaford Rural District Council. Mr. W. B. Marsden, engineer and surveyor, Sleaford:—
Bushby & Sons £1,936 8 6
J. Clarke 1,918 10 0
S. Porter 1,836 0 0
Hill & Son 1,805 0 0
W. H. Hill 1,733 0 0
F. Hopper 1,635 14 7
C. Chamberlain 1,625 0 0
J. W. Pearce 1,600 0 0
Crawford Bros £1,598 6 10
Wallhead Bros 1,512 10 0
J. T. Barnes 1,474 0 0
F. Langley 1,454 0 0
Pattinson & Sons, Ltd., Easing* 1,414 0 0

STANLEY (Durham).—For the formation of private streets known as Tyne-road and Back Station-road, Stanley, for the Stanley Urban District Council. Mr. J. Boulton, surveyor:—
Hannan & Co. £1,035 5 8
Rule, Hadfield, & Co. 981 17 5
F. Sowerby 943 4 3
G. E. Simpson 864 3 5
E. Dyson £934 16 2
Johnson & Strong, Clifford-road, 755 8 3
Stanley* 705 8 3

STANNINGTON.—For superstructure of new asylum, for the Corporation. Messrs. George T. Hine & H. Carter Fegg, architects, Westminster:—
Miller £85,410
Nicholson 84,811
Weir 84,000
Lowry 83,200
Cooper 82,449
Pringle 81,200
Easton £79,960
Petrick 77,777
Moss, Loughborough* 76,600
White 76,599

STUTTON.—For erection of sanitary annexes and alterations to laundry at the Belmont Workhouse, for the Metropolitan Asylums Board:—
Ronald £3,218
Grissell 3,175
Jennings 3,150
McLaughlin & Harvey 2,449
Chesum & Sons 2,427
Hampton 2,370
F. & G. Foster £2,353
Crompton Bros. 2,334
Knight 2,276
Wall 2,270
L. Kazak, Belvedere* 2,105

TORQUAY.—For erection of new wing, etc., at the Grand Hotel. Messrs. Waymouth, Johnson, & Webber, architects, Torquay:—
Petrick Bros. £7,777 0 0
T. Vanstone & Sons 7,596 0 0
C. Pollard & Co., Ltd. 7,500 0 0
Hampton & Co. 7,460 0 0
H. J. Spiller & Sons 7,257 0 0
R. Wilkins & Sons £6,438 0 0
A. N. Coles 6,388 14 9
H. Pittard & Sons, Somerset* 6,323 0 0

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2085 Wall, or write.

WANSTEAD.—For sewage disposal works, for the Wanstead Urban District Council. Messrs. Wilco Bates & Reed, 63, Temple row, Birmingham, engineers:—
Ariss, Ltd. £13,155
W. Underwood & Bro. 12,848
A. Hill & Co. 12,800
T. W. Pedretto, Ltd. 12,082
H. J. Carter, Ltd. 11,728
C. Ford 11,218
S. E. Moss 10,830
H. E. Buckley £108
W. Moss & Sons Ltd. 103
D. T. Jackson 103
W. Cunliffe & Sons 102
G. Bell & Sons 102
W. & C. French, Buckhurst Hill* 98
C. Trask & Son, The Doulton Stone Co. 98

[Engineers' estimate, £9,930.]

Ham Hill Stone. Doulton Stone. Portland Stone.

The Ham Hill and Doulton Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulton Stone Co.)
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Sysel and Metallic Lav Asphalte Company (Mr. H. Glenn), Office, 45, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

PROCESS BLOCK MAKERS

of all descriptions.

4 & 5, East Harding-street, Fetter-lane, E.C.4.

OGILVIE & CO.,

Amburst Works, DALSTON LANE, N.E.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ASPHALTE

For Horizontal & Vertical Damp Courses
For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied

THE

French Asphalte Co.

Whose name and address should be inserted in all specifications.

For estimates, quotations, and all information apply at the Offices of the Company.

5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

EWART'S

"EMPRESS"

Established 1834.

Telephone:
2570 North.

Cures in 19 cases out of 20.

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

SMOKE-CURE

OCTOBER 6, 1911.

PAGE

MONTHLY REVIEW OF CONSTRUCTION:—

PAGE

OBITUARY	403
FOREIGN AND COLONIAL	403
PATENTS	404
SOME RECENT SALARS	404
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	405
PRICES CURRENT.....	406
TENDERS	407

Illustrations.

VISCOUNT RIDLEY'S STAIRCASE, 10, CARLTON HOUSE
TERRACE. MESSRS. DETMAR J. BLOW, F.R.I.B.A., &
F. BILLEREY, ARCHITECTS.

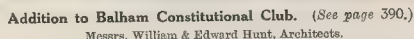
"THE STORY OF THE BRIDGE"—VIII:—

POINTE DE LA VILLE, AVIGNON.

THE ALCANTARA AND ALCAZAR BRIDGE, TOLEDO.

ADDITIONS TO THE BURLINGTON ARCADE. PROFESSOR
BERESFORD PITE, F.R.I.B.A., ARCHITECT.

NOS. 55 & 56, THREADNEEDLE-STREET, E.C. MR.
H. CHATFIELD CLARKE, F.R.I.B.A., ARCHITECT.



LIKE all questions of method and policy, a system can only secure or maintain its place in the general scheme of human affairs if it shows itself to be in accord with what is usually assumed to be covered by the catchword, "the greatest good of the greatest number." Exception may be taken to this phrase as a mistaken mode of expressing the thing most desirable, indeed it is but a clumsy generalisation, but it must be made to serve even though it is not quite a logical formula for relative values.

Before applying this principle to

architectural competitions, we must briefly take stock of the various intentions of those who have in the past been in the habit of promoting competitions. Putting aside those vitiated in their intention by some dishonesty of purpose as unfortunate exceptions having no bearing on general principles, we can limit ourselves to those promoted with a single-minded intention of securing the best result for the object in view.

Now, the ideals of the average promoter are naturally limited according to his general standard of culture. Economy

in design and subsequent convenience in use will probably take first place in these ideals, a critical appreciation of artistic values coming a long way behind. The assessor, in the promoter's mind, is the man who will be able to select the design best fulfilling the requirements he (the promoter) has stipulated for, and some assessors have felt so strongly this point of view as to openly explain that they considered it their duty to identify themselves in their attitude of mind with the intentions of their employers. The more usual position for the assessor,

however, is for him to regard himself as entitled to give artistic claims a somewhat higher value than would be instinctively allotted to them by the layman; but even then, as a judge, he will probably consider that he is only carrying out the terms of his appointment in selecting what is to his mind the best designs having sole regard to the true interests of the promoter. Taking these as the lines on which competitions are usually assessed, we may fairly say that promoters institute them for their own benefit, and that the system of professional assessing gives them more or less the kind of design they expect.

We are not, at the moment, concerning ourselves with the capacity of the assessor or the advantages of the jury *versus* the individual. These issues do not affect the question of the true purpose of the competitive system. It is a very prevalent opinion that this purpose is to secure the best value to the promoter, indeed the American Institute has gone so far as to give official expression to this view.

It is this view we feel to be open to doubt. The R.I.B.A. displays a greater breadth of outlook in pronouncing that competitions are to be regarded as a means of promoting the interests of architecture, a definition sufficiently comprehensive, but which demands a certain amount of explanation. Does it mean, for instance, that by taking part in a competition a man improves his power of design? This may be true, but there are also other educational methods of as great or greater value. Does it mean that by giving opportunities to untried men it throws open the door to all the ability available? This, again, may be true, but the devil's advocate once more retorts that competitions as practised degrade the finer shades of genius. The axiom that competitions are in the best interests of architecture could only be accepted without reservation were they dealt with on the broadest architectural basis, and we propose to show that this is by no means the case at the present time.

To start with, the interests of promoters, even where they demand the best, are not necessarily the interests of the public; to take an example, it may be desirable to give up a portion of the site to improve the surroundings or the effect of the building at the cost of perhaps a little more compression in the plan of the buildings themselves than might otherwise have been desirable. We could quote several instances in which this line has been adopted by competitors, but not one in which it has led them to success. Again, sometimes the best course from the civic aspect might dictate a broadly-spreading treatment in lieu of a more compact and economical one, while other instances might be quoted to show that the more limited interests of the promoter cannot be identical with those based on public amenity.

Leaving this side of the question, we will take up another aspect. It may be claimed that the interests of architecture are best promoted by the exploitation of the most imaginative artist, but in the modern competition how would Dance's design for Newgate fare against one showing a 15 per cent. economy in cost and better facilities in its scheme of

control? As things are at present, awards are almost invariably made on too narrow a basis. Assessors are afraid to give the palm to a design possessing obvious defects, even when these are remediable, though it may appeal to their architectural instinct as artistically more inspiring than any other submitted. If the R.I.B.A. contention that competitions are promoted in the interests of architecture is to be maintained, this attitude is untenable, but, as a rule, the decision follows the national instinct for compromise, and the feeling of the assessor is that he will select what appeals to him as the best architecture, only if it does not prove too expensive.

Another aspect of the case demands consideration, namely, the influence of competitions on the education of the architect. The standard of architectural ability cannot be regarded as a matter of indifference to the general public, and we can fairly claim that the chief merits of the competitive system are that, if properly conducted, a competition urges men to exercise their faculties to the utmost, and at the same time throws open the door to the whole profession to offer of their best to the world at large. Looking first at the educational value of the system, we may unhesitatingly declare that this is the most important function of the competition, more than counterbalancing the loss of time and money to the profession so frequently set out as a serious, if not a conclusive, argument against the practice.


Now, this educational value is beneficial in a greater or less degree according as the awards are made in the interests of architecture or in those of architecture "adulterated," as it were, with those of an inferior quality, such as economics and other concomitants of the business of building. If the best competitive designs fall short of the best to be found elsewhere, it must be accepted that the full force of the educative influence is not being exercised; if they do not so fall short, we can claim that it is.

The advantage of the competition in educating the architect is hardly of more value than its possibilities in the way of educating the general public. That these are by no means exploited to the extent that they might be is by no means the fault of the system, and, with the increasing interest that is being taken in architecture in general, there will inevitably be an increase of interest on the part of the public in competitive designs. We can hardly conceive a more illuminative experience for the layman than a study of the conduct and result of an important competition with the aid of a well-studied expert criticism of the whys and wherefores of the decision.

To sum up, we may claim that the purpose of the architectural competition is twofold, and that the less important aim is that of securing for the promoter the building which most nearly fulfils his demands. This, by itself, would not be sufficient to justify this method. The more important object, and the one that does justify it, is the interest of the nation and its architecture as a whole, which is effected in well-conducted competitions, by the manner in which they can educate the architect, educate the public, bring the lay employer into touch with the best

ability, and offer opportunities for the broad treatment of building problems owing to the acceptance of a design being supported by influential professional advice. Of course these claims can scarcely be made for a large proportion of competitions as conducted at present, but the recognition of human fallibility does not preclude our arriving at a decision on the abstract merits of a system and the achievements it may make possible.

THE FUTURE OF THE ARCHITECTURAL ASSOCIATION.

 HE interesting Presidential Address delivered by Mr. Gerald Horsley at the Architectural Association shows a full appreciation of modern tendencies and the need for a broad outlook and a wider culture in dealing with the architectural problems of the future.

That the Association is alive to the necessity of reform, to keep in touch with the advance in education that has been so noticeable lately, is shown by the appointment of Professor Pite as Director of Education, with a view to a more complete reorganisation of method.

As the President states, "The development of this scheme might necessitate at some future time such a co-ordination of the means of study as might lead to the formation of a great National School of Fine Art and the crafts of building in this country, of which our schools would form a recognised part."

This seems to strike the right note and to be the true ideal towards which the policy of the Association should be directed. Indeed, it may be said that, if the Association does not wish to outlive its sphere of usefulness, it is the only possible ideal.

There may be some who regret the change of the old order—but what avails it to regret the inevitable? The Association was started under very different conditions to those which obtain to-day. No systematic training was then possible, no day schools existed. To pitchfork a boy fresh from school into a busy office, with permission to pick up any scraps of stray information he happened to find lying about, was considered the height of wisdom, and the best method to produce worthy successors to William of Wykeham or Inigo Jones. Few students had the President's good fortune to be placed in the care of a distinguished artist.

Under such conditions it was natural that the organisation of the Architectural Association should take the form more of a mutual aid society than of a school. This was all that was possible at the time, but in these days it is no longer even possible. That the Association has recognised this and determined to part with old traditions in this respect is a proof of its vitality and a promise of its future usefulness. As the President realises, "The most important work of the Association is the School of Architecture, the successor of the old voluntary system of education for which the Association was primarily founded."

In referring to the proposed advance school, Mr. Horsley rightly points out

it does not presuppose any slavish imitations of the French school, though may learn much from it. The great end of architecture here and now—the principal work of the schools of the future—seems to be the systematic study and the right understanding of the principles and theory of architecture, the gradual building up of a technique, definite and generally recognised method whereby a building may be made to express the ideas suitable for expression in architecture. The French school is universally recognised to be the one which has the highest standard in this respect. We want no slavish copy of the forms and features in which their theory and technique find expression. We need to get behind the forms and understand the method—the point of view. If we must copy, let us copy them in this, and build up a method of expression suitable to our national requirements and different racial characteristics.

In these days of technical institutes in which the various crafts that go to make up a building are everywhere so thoroughly taught there is a danger that the student may learn every craft but not the art of architecture. And, considering the facilities in this respect to be obtained everywhere, it is just a question whether the Association should not concentrate its energies in creating a school of design, an architectural expression only, leaving the student to obtain his mathematics or his sanitation at institutions specially adapted for that purpose.

NOTES.

"Cheap" Churches. THE little pamphlet on "Cheap" Churches, issued by the Incorporated Church Building Society, takes the form of the now fashionable "symposium" in which the views of several eminent architects are extracted from their speeches and writings on the subject. Wholesome earnings are given as to the difference between true and false economy, putting the matter even on the lowest basis of the practical requirements. Mr. W. D. Caröe affirms that cheapness in building involves with unerring certainty dearth of upkeep. Further on in his remarks Mr. Caröe makes a special note of the undesirable type of church in which, as he says, "Precisely the same set of plans and details and the same specification are used again and again, no matter what the site or the locality." We welcome Mr. Caröe's conversion from the dark days when his name was connected with lithographed plans and specifications of parsonages offered as models for use throughout the country. We do not now if these plans have yet been withdrawn, but, if not, the fault cannot be said at Mr. Caröe's door after he has expressed himself so clearly. Mr. Charles Spooner recalls the impression created by Bentley's great church at Westminster as an illustration of the fact that an absolutely plain church without moulding or carving may be a very noble building, while Sir C. A. Nicholson differentiates neatly in his remark that "There is no harm whatever in building a cheap church provided it be solid and sufficiently

spacious. The harm comes in when people try to build showily as well as cheaply, when they starve the roof-tree so that they may gild the altar."

The Architect's Garden. In another column (p. 401) we quote an article from a contemporary that strikes us as exhibiting an exceptionally clear appreciation of the relationship between architect and client, generally as to the house, and particularly in regard to the garden. The article closes with a hint that the garden is hardly likely to remain just as the architect leaves it. Now every architect who is himself a gardener knows how inevitably the garden will in time suggest modification and improvement beyond what may have been foreseen from the start, and he will sympathise with a client's desire for opportunities to initiate in this respect. To begin with, the architect should know enough of garden work to be able to fulfil his client's demands in the same way and to the same degree as he would in the arrangement of the house, by this means giving what is wanted in so far as it is not incompatible with the harmony of the whole. Afterwards we should hope that the friendly relationship between the two has sufficiently cemented itself for the client to invite the architect's co-operation, just in a little sociable chat, when a development of the garden scheme is in contemplation. The proposals are not likely to suffer from skilled professional criticism; in all probability the architect may be able to offer valuable suggestions, while at any rate he would have the opportunity of drawing attention to any features out of keeping with the existing work.

The Survey of London.

THE chronological survey of the City of London and its antiquities, in which the Joint Congress of the British Archaeological Association and the London and Middlesex Archaeological Society has been engaged, came to an end last week, when some monuments of later periods, Stuart and Georgian, were visited. Mr. Charles E. Keyser, President of the British Archaeological Association, speaking at the Mansion House, expressed the wish that everything they had seen could be preserved. Referring to the case of Crosby Hall, he said it was a disgrace that it had been removed. Of course. As far as the City of London is concerned, and indeed as far as all those who take more than an architectural interest in the matter, Crosby Hall might as well have been destroyed outright. It possesses no significance and hardly any beauty where it stands. The Lord Mayor, than whom few tried harder to keep the house where it grew and stood, in reply, said that, as regards Crosby Hall, the fact that the ground would fetch two millions an acre had proved too much for them. And is likely to do so. As the speaker said, all sorts of propositions had been made with regard to the City churches. And so on. Now, as a community either we value these things or we do not. If not, there is nothing more to be said. If we do, however, let us value them at their true worth—that is to say, as

objects absolutely valuable—"absolute" because unique and irreplaceable. And let us remember that their value lives only so long as they stand on the spot on which they grew. With this attitude of mind an old City becomes an area on which there stand strangely-shaped hillocks and cliffs of adamant. All additions and alterations must be in relation to these irremovable features. For the planner and improver of streets and public spaces these old buildings are as natural features of which advantage must be taken, which it is a confession of incompetence to remove. One sees them not as obstacles, but as jewels awaiting their setting. But, of course, if we care more for the number of pounds per acre . . .

The L.G.B. and Civic Aspiration.

THE steadiness with which occasions arise for adverse criticism of our central government authorities in architectural matters must be as apparent to our readers as it is distressing to ourselves. The case of Oldham Town Hall appears on the face of it to betray an attitude of petty parsimoniousness on behalf of those under its supervision by the Local Government Board which is surely a labour of supererogation, if we are to look upon it as the policy of the Board with regard to municipalities generally as they are constituted today. We say "on the face of it," because it is easy to imagine the existence of a variety of circumstances which it might not be thought politic to disclose that would justify the Local Government Board in the instance under consideration; but if this is the case the Board cannot but stand condemned for considering secrecy desirable in affairs of this kind. Oldham possesses a Town Hall of which apparently her citizens are ashamed—but we let that pass as not being relevant to our contention—a Town Hall which is at any rate inadequate in point of accommodation. It is proposed to remedy this by building an addition at a cost of about 30,000. The Board has criticised the scheme, suggests that it is not as cheap as it might be, and indicates amendments which would reduce the cost by a few hundred pounds; shear the addition, that is to say, of the architectural amenities which would render it a source of pride to the town and reduce it to a condition of starkness which would be consistent with a mistaken conception of "utility." As the *Oldham Standard* has it: "Now, however, when it is proposed to do something on a substantial scale to supply the want, the Local Government Board, influenced by goodness knows what, must interfere to checkmate us. We must apparently attempt nothing elaborate or attractive, and our public buildings must remain an eyesore." And again: "None of them (the Town Council) thought that Mr. John Burns, of all men, would charge them with extravagance when they attempted to remodel the Town Hall along lines that would, at least, make it creditable to the town from an architectural standpoint." This, surely, is an outcry in the right spirit, apart altogether from the architectural merits of the scheme.

The Empire Palace Fire.

THE British Fire Prevention Committee's report on the Empire Palace fire at Edinburgh, which has been drawn up by Mr. Ellis Marsland and Mr. Max Clarke, gives a clear and instructive description of this catastrophe. Apart from the unfortunate loss of ten lives, the course taken by the fire shows that progress has been made in the construction of theatres as regards the separation of stage and auditorium, and had the arrangements of the dressing-rooms and their approaches been equally good several more lives would have been saved. As our readers may recollect, the audience all escaped uninjured, despite the error of judgment which allowed the drop curtain to be lowered before the fireproof one, the consequence being that the former was drawn out by the draught towards the auditorium, preventing the latter from coming right down. Even then the damage in front was trifling, and while this mistake may have contributed to the ultimate failure of the fireproof curtain, this stood for eighteen minutes—a more than sufficient time for the exit of the audience. We confess that we should be better satisfied if the curtain had not failed, considering that it is clearly practicable to design one strong enough to resist. In this case it hardly seems to have been sufficiently stiff in its construction and drew out of the guides, which were formed by a pair of Z bars screwed through a back plate. There appears no reason why the curtain should not run in grooves formed in brick or concrete, so that, if in itself sufficiently stiff, it could not fall away from its position even if the metalwork in the guides succumbed to the heat.

The Disaster at Austin, Pennsylvania.

THE collapse of the dam at Austin, which has caused so deplorable a loss of life, has called to mind the apparently somewhat similar disaster to the Connemaugh Valley dam at Johnstown, Pennsylvania, in 1889. As a matter of fact, the similarity is more apparent than real. The Johnstown dam was formed of clay puddle, and its failure was due to many years of neglect, while the Austin dam was a new one constructed of concrete. In this case the information at our disposal leaves it open to doubt whether the failure was due to faulty work or to the unfortunate habit too prevalent in the U.S.A. of designing with an insufficient factor of safety—of cutting things too fine, to use a colloquialism. The length of the dam, 530 ft., appears to show that it must have been what is termed a "gravity dam," and the fact that it began to leak

soon after its completion some eighteen months back points rather to faults of workmanship than of design. The full history of the failure will doubtless be studied with interest by the engineer whose work lies in this direction. In these days of reinforced concrete the design of the actual dam wall presents trifling difficulties compared with those involved in making a sound connexion between the wall and the ground on which it is founded.

Railway Nationalisation.

THE annual meeting of the Amalgamated Society of Railway Servants has come at a somewhat unfortunate time, as the matters with which it is concerned are *sub judice*, but it has enabled the public to compare the statements made on the platform by the President as to the condition of railway servants and their grievances with the evidence offered before the Royal Commission by persons on both sides giving evidence with a due feeling of responsibility. The leaders are in a position of difficulty as regards the Irish strike, which has, at any rate, exhibited the inability of the Society which claims recognition to control its members in times of difficulty. The recent strikes and the intervention of the civil and military forces appear likely to be used in certain quarters as an argument for nationalisation of the railways, but the intolerance expressed of any Government interference in trade disputes, coupled with the experience of some countries where the railways are State-owned, would seem to indicate that the remedy for the present trade union unrest does not lie in that direction.

Oriel College, Oxford.

NOT the least interesting chapter in the history of Oxford is that relating to the advent of the late Cecil Rhodes. Although Rhodes went to Oxford with an unusually matured mind, there can be no doubt that the traditions and spirit of the city had a strong influence on his future. He himself admitted the fact, and by his interest in the University he showed that he was prepared to repay the debt of gratitude. A few days ago, when the new buildings of Oriel College, designed by Mr. Basil Champneys, were opened, Dr. Shadwell, the Provost, gave an interesting address on the history of the College, and reminded his audience that it was barely forty years since that Cecil Rhodes had applied for admission to Oriel. In the interval much has happened in South Africa towards the achievement of the ideals of the pioneer who, "ever looking North," conceived vast schemes for promoting civilisation. But while he was engaged so strenuously

on the veldt he never forgot the seat learning on the banks of the Isis, and through his benefactions, apart from other well-known endowments, Oriel College possesses now a building which is a monument to the generous donor efforts towards the spread of education. The moral of the gift is one of significance to the Empire.

THE STORY OF THE BRIDGE.

By WALTER SHAW SPARROW.

VIII.—ARCHITECTS AND BRIDGES.

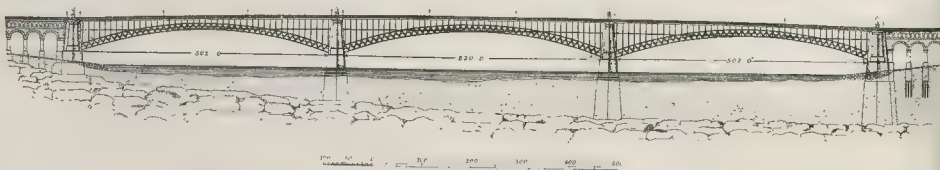
ARCHITECTS have managed to drift apart from a good many things essential to the high office as the most useful of all public servants. For example, the people ought to be encouraged to consult good architects in all matters of domestic furnishing and decoration. Yet architects have no consulting hours for that purpose, and they have got into the habit of believing that the main work is to build homes, though show syndicates degrade new houses with clever estimates recommending seasonal fashion. Again, towns and railways ought to get opinions from the Royal Institute of British Architects before they invest money, plus the good looks of several neighbourhoods, in the construction of new bridges; but what layman would support that view? How many persons now regard bridge-building as within the province of architecture?

Civilians lift their eyebrows with astonishment if you suggest that truth to them; and even some architects have declared that they have looked vainly for fine art even in old historic bridges. This attitude differs greatly from the deep affection for bridges that painters and etchers have been glad to express. Piranesi etched bridges nobly. Turner's poetry wandered along them to and fro between the past and the present; and every landscape of note has put something good from their romance into his pictures. Whatever architects may feel about scientific engineering—a thing hateful to me as a rule—they surely cannot be blind to the variety of apt excellence that gives grace and charm to many an old bridge which for hundreds of years has served the passing generations.

If engineers, like the architects of battleships, had been obliged by public opinion to keep their designs in step with the progress of gunnery and explosives, they would certainly have evolved many bridges having a much greater value than the industrial types which they have invented. How to safeguard piers without obstructing river too much; how to give the superstructure all possible refuge from falling shells; what the maximum span of an arch should be in its relations both to temporary and swift repair and to the stress and strain of war these problems, and many others, if engineers had been obliged to concentrate thought or their solution, could not have failed to inspire great efforts and to bring into vogue new constructive methods and powerful designs.

Conformity to definite and urgent needs, making each useful thing as fit for its purpose as it well can be, is always an agent in the

ILLINOIS & ST. LOUIS BRIDGE



Over the Mississippi.

(For the best description see Sir Charles A. Hartley, quoted by Professor Fleming Jenkin in his "Monograph on Bridges.")



Bridge of Notre-Dame at Mende, Lozère, over the Lot.

of building. Utility does not produce
ness when all the special requirements of
ery case receive from experts as much
ention as they deserve. A fleet of metal
ships is not ugly, for instance; it is
traordinarily impressive. Every thorough
hitect recognises utility as the basis of his
ork, and on that sure foundation he makes
autiful buildings. His art is tradition and
mon sense in perfect harmony with the
eds of to-day and enriched with imagina-
on. Something very different appeals to
s when we study the work of scientific
gineers. Here, as a general rule, imme-
ate convenience for purposes of trade has
ominated all other considerations, with the
sult that those bridges which are not
onsters of ugliness like the Britannia
ridge are very often too big for their
roundings; and can you name even one
hich is not defenceless and very vulner-
le? We know, too, that Parliament with
pathetic stupidity, granted powers to railway
panies that enabled them to deface
oroughfares, to destroy the beauty of
ighbouring architecture, and to disfigure
landscapes with much bridge-building that
ill long remain as a national humiliation.

Leading architects have protested often
nd earnestly. I may take E. M. Barry as
n example. In his lectures from the archi-
tural chair of the Royal Academy they were
elivered between 1874 and 1879—he spoke
is mind on this question of bridges, regard-
ing it as a compromise affected by many
fluences: cost of production, the utilitarian
pirit, the defects of taste and of design
hat seem to be inseparable from engineering,
he value of beauty to a nation, and so forth.
He said, among other things: "The greatest
works of the present generation, those of
cientific engineering, are not architecture,
nt mere building. In them the actual
ecessities of construction have alone been
recognised, with the results that may be
een, for example, on the Surrey side of
ondon Bridge, where one of the finest old
hurches we possess is hemmed in by iron
tructures of surprising ugliness. If archi-
ecture were felt to be a matter of public
nterest, any such disfigurement of our

public places would not be permitted; and
while the argument of utility must always
have great weight, it would be carefully
scanned, and not be permitted, as a matter
of course, to override all other considera-
tions. . . . Take an instance of bridge-
building. The Menai Straits are spanned by
two bridges. The problem was the same in
each case, viz., to carry a roadway across the
Straits at a great height, and with the least
possible interference with the navigation.
The one bridge—Telford's—was necessary
for the turnpike road; the other had the
more difficult task of supporting the great
weight of a railway. . . . Here we have
the adoption of the trabeated principle of
large iron beams laid upon supports of
masonry, which rise from the valley beneath,
and tower up above the beams to a height
far exceeding that which is necessary for
their support. I well remember the animated
discussions in scientific circles as to the form
and design of these beams, which were
ultimately decided upon as rectangular tubes.
In the many discussions of the merits and
defects of circular, elliptical, or square
sections, I do not recollect that a word was
said of architectural effect. Had anyone
ventured to suggest that this, too, was an
important matter, and that an unsightly
structure would be an eyesore for all time,
he would have been promptly told that the
forms to be employed were an affair of
science alone, and that utility pure and
simple would dictate their arrangement. In
the result a lovely valley was defaced by one
of the most unsightly structures of this
mechanical age."

And that was not all. Even the distribu-
tion of metal in the section of the tubes was
soon questioned, and a very different design
was chosen for the next great work in the
science of hideous bridge building. I refer
to the High-Level Bridge at Newcastle,*
with its two roadways, the one for carriages
passing under the railway so that business
folk may be reminded by the noise overhead
that they are natives of a very pushful
industrial town. There are six arches, all

of the same width, namely, 125 ft., for a
practical mind, long used to ledgers and
routine, likes a dull uniformity. Much ado
was made about this bridge, and Queen
Victoria opened it in 1849. The "Encyclo-
pædia Britannica" described it at great
length, giving more space to its planning
than the frugal Romans would have granted
to half-a-dozen great viaducts. People were
proud that the new monster had cost
243,000*l.*; that 4,728 tons of cast-iron had
been used for the arched ribs, and that the
ties of wrought-iron weighed 321 tons.
Engineers boasted that the bridge was a
perfect example of the true bowstring arch
in which no cross-bracing was necessary.
And then, all at once science refused to brag
any more; she became thoughtful and very
critical. This was shown in the next edition
of the "Encyclopædia Britannica," which now
gave no more than eighteen lines to the
High-Level Bridge at Newcastle. All the
old praise vanished, and readers were told
that the bowstring type could not be recom-
mended for imitation, being essentially more
expensive and heavier than a true girder.

Even when we turn to those metal bridges
that show in their design some grasp of
æsthetic principles, we find that art and
science have not been combined together
after a thorough study of all considerations
involved in the purpose of a bridge. As an
example we will take the Illinois and St.
Louis Bridge, a fine work of its kind, dating
from 1873. It crosses the Mississippi, which
at St. Louis flows in a single channel 1,600 ft.
wide and 8 ft. deep at extreme low water.
There are three metal arches, the middle one
having a span of 520 ft., while the others are
18 ft. narrower. If it was worth while for
the sake of public convenience to erect this
great roadway above a wide and dangerous
river, it was also worth while for the sake
of public convenience that the width of the
arches should be determined by the probable
dangers to which the bridge would be exposed
in a time of war. Would it be possible
temporarily to mend a metal arch having a
span of 520 ft.? If not, why build a huge
and costly structure with steel-ribbed arches
of that size, which might be destroyed at

* Illustrated in Article VII., p. 323.

the very moment when a double railway track across the river, and a roadway above for other traffic, might unite an attacking army to its supports and determine the issue of a critical battle?

These questions were not considered at all. Many authorities will tell you how the St. Louis and Illinois Bridge was built; how the arches were erected gradually from each pier and abutment without the aid of centring; how four double ribs of steel in each span were formed with tubes jointed butt to butt, and braced well together at their relative distances from each other; how they were clasped together by wrought-iron couplings furnished with parallel grooves corresponding with similar grooves in the tubes; how steel pins, varying from 4½ in. to 7 in. in diameter, passed through the centre of the couplings and the ends of the tubes at every joint; and how the vertical bracing between the upper and the lower tubular ribs, which were 12 ft. apart from centre to centre, made the two members into a single arch. This and other information was given to Sir C. A. Hartley by the engineer, Captain James B. Eads, whose design showed a want of military forethought quite in accord with the routine of scientific bridge-building.

For Captain Eads was no different from European engineers. Custom is reason either half awake or fast asleep, and custom in the modern science of engineering has never given any thought to the simple questions: "Is this bridge as fit as it ought to be as a safe roadway? Could it be destroyed by a strike of workmen armed with explosives, and could a breach in any arch be repaired quickly for the passage of troops and provisions during a time of national crisis?"

Instead of getting answers to these questions, by which the precise worth of a modern bridge is made evident, we have been assailed by details of technique and by the cost price of materials. We were expected to gape with admiration because Captain Eads gave 60¢ per ton of 2,000 lb. for 2,500 tons of steel, and 40¢ per ton of 2,000 lb. for 500 tons of wrought-iron. A target of much gold for modern artillery!

Well, now, are we to suppose that architects would ever be as blind as engineers have been to the utilitarian factors governing the use and worth of bridges? Would they have forgotten such great things as the

perils of war and the dangers of strikes? Or would they have lost their care and liking for beauty in nature and in design? After reading about the fate of bridges during Napoleon's campaigns, could they have been so unwise as to build in metal many hundreds of vulnerable structures which to-day's artillery would ruin with even greater ease than the gunpowder of 1799 destroyed the great timber bridges of the brothers Grubenmann?

One cannot answer these questions affirmatively. Capable architects have the genius of artists, and artists, whenever they give their minds to practical matters, have a range of common sense that men of affairs never equal. Artists look at questions from all sides and see them amply and as a whole. It is the man of affairs who isolates two or three things from many, and believes that those two or three things are all that need attention. "It is unnecessary for these bridges to be handsome," said the railway companies; "we need them for business." This decision was repeated many times. Years later, when railwaymen break out into civil war, the public suddenly is told that scores of bridges useful in business are in need of troops to guard them from the striking classes. Engineers built those bridges, for their practicalness was limited by routine and trade; it was mere business without imagination and art.

But the main trouble is that architects cannot easily regain what they have allowed to slip away from the control of their criticism. In this question of bridges engineers hold the field, as governing bodies find in their work that degree of practicalness which is patent to business minds. Apart from this, it will take a long time to convince the public that bridges belong to the most perilous necessities of the national life. This was realised to some extent during the railway strike, but we cannot point out too often that a country dependent on imported food, and subject to periodical conflicts between labour and capital, must have bridges in all respects fit for their purpose as secure highways. A country with cut bridges would be like a man with severed arteries.

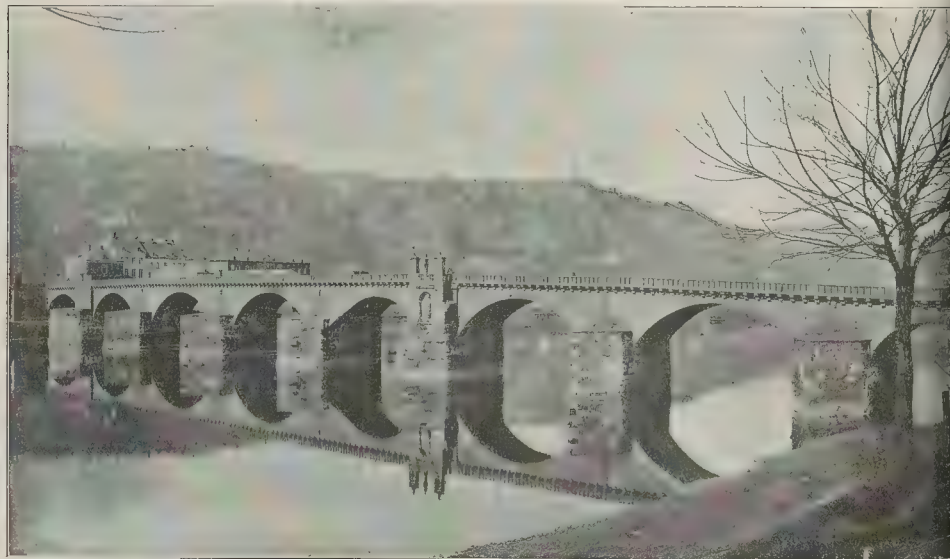
What we need at the present time is a Committee of architects and engineers having for its duty the examination of all

new projects in those forms of civil engineering that affect national interests. It should be a Committee of judges, not a Committee of working barristers. That is to say, the members should devote all their time to impartial work and the testing of evidence; they must have no axes to grind and no professional theories to advocate. At present time, when the majority of architects condemn a bridge newly projected, there is always a minority that takes sides with the engineers and the men of trade.

From these current affairs and the mud that England loves one turns with pleasure to a few of the old bridges, because they show in various ways the presence of genuine architecture. The XIIIth-century bridge over the Lot at Mende, in Lozère, is humble and rustic, built by a master mason probably but not the feeling for stone in the simple and effective masonry. Here is a little bridge that found its way into art because it was built by craftsmen who loved the work. It is in harmony with the country side; it belongs to its site and neighbourhood. Pull it down, and tourists would feel the loss of an old friend.

As to the famous bridge of Avignon, built by Saint Bénézet and the Bridge Fria between 1178 and 1188, its history has been told many times. Only four arches now remain, but they are of great interest to students. Professor Jenkin noticed the elliptical outline with the radius of curvature smaller at the crown than at the haunches "a form which accords more truly with the linear equilibrated arch than the modern flat ellipse with the largest radius at the crown." There is no other bridge of the XIIIth century having arches of this kind.

It is said that Bénézet performed miracles, healing the sick; but his eighteen arches of Avignon ought to have been enough to satisfy his ambition. He died before his work was finished, in 1184, and his body was entombed in the Chapel of St. Nicholas built on the third pier. The tomb became a shrine that pilgrims visited; and the chapel has never been injured by feuds or by floods. War destroyed some of the spans in 1385; three others fell in 1602; and in 1670 several piers were overthrown during a thaw and flood that came after a very severe winter. The Rhone was frozen over and when the ice began to melt and break



Trier Bridge over the Moselle.

immense damage was done. The original length of the bridge was 600 metres. As contrasts to St. Bénézet's work illustrate the Moorish bridge at Toledo, the achievement as a whole, and the older Bridge across the Moselle, that still retains its religious symbols midway in its length. For many generations a crucifix was used above the parapet in the middle of a ridge, and sometimes, as at Trier, a statue of the Virgin was eniched below. The Trier bridge should be studied side by side with the Moselle Bridge at Coblenz, illustrated in the issue of September 22, and which dates from the year 1344. The Moselle Bridge, with its fourteen arches, is 1,100 ft. long; the masonry is good freestone, and the sign is architectural. When we compare these venerable types of bridge architecture with the spindle-shanked modernities to be found in Canada and the U.S.A., who does not feel the threatening difference between our age of speed and the slow evolution that ruled over progress when art and craft had stern traditions?



The annual general meeting of the Architectural Association was held on Monday night at Tufton-street, Westminster. Mr. Gerald C. Horsley (the President) in the chair. Thirty-six nominations for membership were received. It was announced by the Chairman that a vacancy had occurred on the Council due to the resignation of Mr. P. W. Lowell. At the next meeting the Council would suggest a candidate for election, but under By-law 37 any member could nominate a candidate.

- The Prizes.**
- The President proceeded to present the prizes won in session 1910-11 by the following students :-
- G. W. Home—A.A. Silver Medal (see p. 401).
 - C. F. Butt—Architectural Union Company's prize.
 - W. J. Durnford—Banister Fletcher Bursary.
 - T. F. H. White—Banister Fletcher Bursary; Drainage and Water Supply.
 - A. G. Shoosmith—Class of Design Prize.
 - H. J. H. Dicksee—History, First Year; Construction, First Year; Geometry, First Year; Physics, First Year; Studio Prize, First Year.
 - B. C. Davies—Freehand Drawing, First Year.
 - D. J. Gordon, Travelling Studentship, Second Year.
 - End of Session Test, Second Year, Prize offered by H. P. G. Maule.
 - E. Kennedy Smith Scholarship, Preparatory courses.
 - J. B. M. Walch—Preparatory Course; Geometry; European Medieval Architecture.
 - J. A. Hale—Master's Prize, Preparatory course.
 - A. R. L. Roberts—Scholarship, Third Year.
 - G. W. Stuart—Book Prize, Third Year.
 - T. F. Ford—Master's Prize, Third Year.
 - H. V. C. Curtis—Travelling Studentship, fourth Year.
 - C. W. Marles—Master's Prize, Fourth Year; fourth Year Book Prize.
 - C. J. McCausland—Preparatory Physics.
 - A. B. Peermahomed—Intermediate Physics.
 - G. Fildes—Renaissance Architecture; Greek and Roman.
 - E. H. Bagnall—English Architecture.
 - C. M. Cooper—Advanced Physics.
 - G. A. Fortescue—Ventilation, Lighting, and Heating; Professional Practice.
 - H. Gresswell—Materials.



C.P.R. Bridge, Lethbridge, Alberta, Canada.

The following students have been recommended by the External Examiner, Mr. Paul Waterhouse, for the Board of Architectural Education Certificate, which entitles them to exemption from the R.I.B.A. Intermediate Examination :-

A. S. G. Butler.	J. O. B. Hitch.
F. A. Crouch.	L. D. Martyn.
G. A. Fortescue.	C. W. Rogers.
B. P. Gaymer.	

The following students have been awarded the Association Two Years' Course Certificate :-

M. D. Archer.	G. Fildes.
J. A. Bennett.	D. J. Gordon.
D. E. Cruickshank.	W. Harkess.
P. G. Detmold.	E. J. T. Lutyens.
T. W. Dowsett.	A. B. Peermahomed.

Presidential Address.

The President then delivered his Presidential address, as follows: "Before I begin what I may call the more serious part of my address I would like first of all, as your President for this session, to have a word with you about our Association. The Architectural Association has already travelled far upon the road towards fulfilment of the ideal of its founders. I like to think that that ideal was to inspire in its members a true love of art rather than a mere desire to be successful business men. This was the aim of a band of young architects, the founders of our Association, sixty-four years ago. As the first President of our Society, the late Professor Robert Kerr, said a few years ago, when speaking of its origin and the conditions of architectural training at that time, 'The time had come for a stirring of dry bones. It was not the seniors, but the juniors themselves, who made the demand—that there should be supplied to the inquisitiveness of youth something more up-to-date than all this' (referring to the architectural training of that time). 'Why not take the matter in hand for themselves?' said young Charles Gray and others. 'Why not, indeed?' said Donaldson and Godwin. So they did it; and the upshot of it has been that, not only in London alone, but in other centres of English energy, it has become a first principle in our professional training that the young men shall put their own shoulders to the wheel as an organised body. And well, thoroughly well, has it answered." So will it ever be—enthusiasm is with the young. Here are a few figures in proof of the steady growth of the Association. The present number of members is 1,611, exclusive of those nominated to-night. This time last year it was 1,589. Thirty-five years ago it was 668, showing a growth since that time of about 1,000. The number of students also in the classes from the foundation in 1847 up to some ten years ago, when the schools were placed upon their present basis, was a varying number in proportion to the number of members at the time. Since 1901, when the present schools were formed, the number of students who

have passed through them is about 1,500. These numbers surely speak well of the work done in furthering the aim and ideal of our Society. The "Brown Book" states the objects of the Association to be as follows:—"To promote and afford facilities for the study of architecture, and to serve as a medium of friendly communication between the members and others interested in the progress of architecture." It goes on to say that the objects shall, as far as practicable, be carried out by means of papers and discussions, a library, lectures and classes, a school of architecture, prizes and scholarships, visits to works and buildings, periodical publications, and by such other methods as the Council may determine from time to time. A goodly list. The communication between the members fostered by these methods has led to the formation of many valuable friendships, and will lead to a good many more, for the different societies within this Association which encourage informal but useful meetings among our members are all doing as well as we could wish. The Camera, Sketch, and Debate Club, for instance, has thoroughly justified its existence. Last session it held an excellent exhibition of very good sketches and first-rate photographs, and it has had some good debates. I believe to-day it has just returned from a week-end visit to Cambridge. I hope we shall soon see the result of their sketching and photography in another exhibition. I would commend to its members a consideration of the advantages of joining the A.A. Annual Excursion, in lieu of holding a separate outing of their own in the same month.

Social Activities.

Owing to the papers which are read, and the discussions which follow them, at our ordinary meetings, these are social gatherings as well as opportunities for hearing about something we probably knew nothing about before. We have gained greatly by the departure made last year in combining the alternate meetings with the Camera, Sketch, and Debate Club. We have had good meetings and animated discussions. I would like to remind you that the papers which are read at our meetings are usually of a most interesting description. They help to widen a man's general knowledge of art, and we hope to see our younger members coming forward and taking part in the discussions. The library and the periodical publications have made great progress in the last few years. A comparison between our present Journal and the old A.A. Notes must be very satisfactory to the editors of the former, and emphasises their admirable work. The "Association Sketch Book" has, I rejoice to say (as an old past member of its Committee and an old contributor I regard it with particular affection), a new lease of life. Undoubtedly the most useful and best book of its kind, it has at last been discovered by

many who previously have closed their eyes to its merits. In consequence of this it is becoming valued as it ought to be. I hope, as members of the Association, you will support it by lending your best drawings of old work for publication and by subscribing the small sum necessary to have the volumes supplied to you. We have had good competitions for the prizes and scholarships. I am glad to tell you of an alteration which has been made in the conditions of the Travelling Studentship. Formerly this was reserved for those members only who had passed through the School of Design; now it is open to the competition of any member who is under twenty-six years of age. Page 110 of the "Brown Book" will show you that this prize is now more than ever well worth your notice.

With much pleasure I wish to call your attention to the exceedingly good provision which has been made for the athletic side of the Association. Thanks to the untiring efforts of Mr. Alan Potter and other members of the Committee, a very good ground has been secured and prepared for football, cricket, and hockey. On a memorably fine and perfect afternoon last summer the ground was opened with much graciousness by Lady Webb, to the great satisfaction of all present. Now I need not say much more about the Athletic Club; it can take good care of itself. But I will say this: We ought all to support it. We all have to put in much intellectual work nowadays, and to keep fit intellectually we must keep fit bodily, and the Athletic Club will help us in a particularly delightful way. Do not overlook in your "Brown Book" the page which gives you information concerning the well-known 28th Battalion of the London Regiment, the "Artists." Fortunately, for the good of us all as citizens of this Empire, it is no longer necessary to tell the public school man on taking up his own citizenship that it is his duty, if he can pass the necessary tests, to join the Territorial Force. The splendid work done by the O.T.C. in the schools of England has spread that knowledge wide. I consider we ought in this Association to either supply a company to the "Artists" from the fine material we have here or to make notable additions every year to those companies already existing which are mainly recruited from architects. As one who did his few years in the regiment, many years ago now, I can testify to the good of the work and the pleasure of the comradeship. In view of the duty to our country in this respect, there ought to be an effort made to give facilities to those students who have to complete their drills.

The A.A. School.

The large subject of the School of Architecture I deal with more fully presently, but this I will say, that, after many years of voluntary and disinterested endeavour, the Association has a school which is second to none in this country. When I consider its well-thought-out scheme and many advantages I am forced to think of the more simple conditions which obtained when I and my contemporaries left school in order to study architecture, some thirty years ago. Perhaps you will not think me too prolix, or too much like the old man whom you know "will be talking," if I recall my own beginnings and compare them with your own. It was my good fortune in 1879 to be articled for three years to Mr. R. Norman Shaw. You can guess they were happy years. There was much to learn, much to inspire. But at that time there was no organised system of education beyond the term of pupillage, except the instruction given in the evening at the Royal Academy Schools, in some art schools, and the voluntary evening classes of this Association. We (I speak of myself and my contemporaries), or most of us, joined the Royal Academy Schools during the term of our pupillage on submitting drawings to prove our fitness for admittance, and worked there in the evenings. On looking back I think the chief value of that school work was the competitive work for the prizes. It was a good exercise, and lasted some time, for the Academy studentship alone lasted some six years. Travel abroad, working as an assistant, and competing for the Royal Institute prizes filled up our time till, some eight or nine years after the first days of pupillage, we began to practise.

And now, having spoken of those subjects which I wished first of all to mention to you, I pass on to speak more particularly of the School of Architecture and the objects of our education. When I was thinking of my address to you to-night it occurred to me that I could not do better than begin it by quoting the following words, written by our great King Alfred more than a thousand years ago. These words are: "Thou knowest that no man may understand any craft, or wield any power, unless he have tools and materials. Every craft has its proper tools." It is true the King was writing about kingly power and describing the tools and materials necessary to make that power of a fit and noble kind. Still, the quotation, so clear and to the point, as was the way of the great ruler and law-giver, sufficiently describes the aim of this Association, which is to give its members power to do good work by the provision of a thorough system of education. At the risk of being a little tedious and repeating to-night what a good many here already know very well, I wish in this address, which I have the honour as your President for this year to make you this evening, to refer to the work of the Association and to the influences which now affect it, and to those further influences which might be brought to bear upon it. Although the risk I have mentioned is present, I am the more emboldened to speak on this theme because we have amongst us several new members, who are fresh to the conditions of life in our Association and unacquainted with some of the movements influencing the current of art life in this country.

Now, the most important work of the Association is the School of Architecture. The successor of the old voluntary system of education for which the Association was primarily founded. The present method of education consists, as you all know, of a four years' course, divided into two years in the Day School and two years in the Evening School, during which latter period the student is articled to an architect in practice. By this means the careful preliminary training in the first two years in this school leads up to the combined office and school training in the succeeding two years, a combination obviously of the utmost value to the student. This course of instruction is an admirable one so far as it goes; the details and effect of its working are always being most carefully watched by the head master and educational staff, and by the Council of the Association, who frequently meet to confer together. A new development has been inaugurated this year. Professor Beresford Pite, himself an old member and Past-President, well acquainted with the history and work of the Association, has joined the educational staff as Director of Education in the schools. As a master in the Evening School and as lecturer in both the Day and Evening Schools, he will instruct as well as direct. This is an accession of strength to our system which Mr. Maule and the assistant masters have heartily welcomed, and I think we are entitled to congratulate ourselves upon it, and to hope for a continued healthy growth of our means of education. In addition to the four years' course to which I have referred, I may here announce that it is intended to form at once an advanced class, or a fifth year's course, for those who are desirous—and I believe there are many such—of pushing their studies further.

Period of Study.

Hitherto the four years' course has been founded upon the syllabus put forth by the Board of Architectural Education, and a tradition of sound and careful work has been established in the schools, which is constantly growing and expanding to meet the needs of the day. I am aware that there are those who hold that a four years' course is sufficient for an architectural student before beginning to practise, and particularly for the man who has been to a university. Though I am strongly of opinion that four years is not enough for the greater number of students, I admit there is a good deal to be said for this period of study in the case of those who have spent three or four years at the University and who have done well there. Time is of consequence in their case, and the trained minds of students who have been through the University course will learn and absorb more quickly than the minds of those

who enter the schools here direct from the public schools. For these last I assume, and I believe rightly, that the four years' course is too short a term of instruction, and I believe that the student who makes up his mind to spend the years between eighteen and twenty-eight in the close study of his art, earning his living, if necessary, meanwhile, and others have done before him, as an assistant to architects in practice before practising as an independent architect, is more likely to become an accomplished artist than he who begins to practise immediately on the conclusion of his articles. It seems to me that if it were possible to combine the general education of a University with the acquirements of the preliminaries of architectural knowledge for perhaps two years after the student has left his public school, it might be very valuable.

These are matters which I hope may come before the Board of Architectural Education for consideration, for I believe it will become necessary for the advantage of our students generally to bring about a co-ordination of the present opportunities for the advanced student who has completed the four years' course and who does not wish to immediately set up in practice. At present these opportunities of study are very varied, and, I will add, very interesting. To name only a few, there are our own new five years' course, and all our students should, if possible, go through the fifth year's course—and the prizes offered by the Royal Academy of Arts and the Royal Institute of British Architects. To obtain one of these prizes confers deserved honour upon him who gains it, and gives him credentials which help him to gain a good position for himself in some form or another, and which makes for him a real start in his artistic life. Besides this, these prizes give to the student the great opportunity of developing his knowledge by travelling for purposes of study. There exists, however, the difficulty that, while the competition for the prizes of the Royal Institute of British Architects is open to all *bona fide* architectural students; in the case of the Royal Academy the competitor must have passed through the full terms of studentship. As an old student of the Royal Academy, and one who has a great respect for its system of training, I can understand that its prizes are intended for its own students. But as one anxious to see a higher development of our general educational system, I feel it would greatly assist the student of to-day if he might enter the advanced classes of the Royal Academy, upon satisfying examiners as to his ability, without being obliged to go through the whole course. For instance, it would be an advantage for our students who have obtained their certificates here after several years' study to enter the Royal Academy Schools to compete for the Gold Medal and Travelling Studentship, and to reap the advantages of meeting with student-who are studying the sister arts of painting and sculpture. A goodly number of our students are debarred at the present time from doing this through having to go through a probationary period on entrance, equivalent to the earlier years of the course completed by them here.

Foreign Studies.

The training which a student must undergo who intends to compete for one of these prizes is of great importance to him, while the fact that nearly all of them, such as the Royal Academy Gold Medal and Travelling Studentship, the Soane Medallion, the Tite Prize, the Pugin, the Owen Jones, and others of the Royal Institute of British Architects, carry with them an obligation upon the successful competitor to travel either in England or abroad for purposes of study constitutes their great educational value. In my opinion, the education of the advanced student is not complete until he has studied abroad. He may do this by independent travel, or he may join for a time the British School at Athens or the great French School—all admirable courses to pursue, and well worthy of your attention and consideration. Further, in connexion with this important part of a student's career I would like to mention the probable foundation of a large British school for advanced students in Rome. This possibility inspires the hope of an extension of the opportunities for advanced study of a particularly interesting kind. The

development of this scheme may necessitate some future time such a co-ordination of the means of study to which I have alluded might lead to the formation of a great national School of Fine Art and the crafts building in this country, of which our schools would form a recognised part.

The formation of such an advanced school does not presuppose any slavish imitation of the French School, though I believe we may learn much from that school. For instance, we must not forget that the well organised years of study of the best French students—those, for example, who have won the Prix de Rome and have spent the four years which is the custom on winning that prize) in the study of old work in Italy and Greece—have contributed to the great achievements of French architects during the last 200 years. It was, at any rate, this very thorough system of training which helped Labrousse to build his library at Geneviève in Paris and his notable additions to the Bibliothèque Nationale; which helped Duban in his building at the *eaux-arts*, and Duc at the Palais de Justice. We must recollect that the foremost students of the past have all been men who have inspired their fellows to put forth their best powers. We have here in England artistic forces which, if combined, would, I believe, prevent such waste of energy and power, and would lead to the production of finer work of a more national character. The chief principle which, in my view, leads to success is that if you are going to be a distinguished artist you must first of all be a distinguished student. No system of education is of use which does not bring out and form the qualities which make up what we know as character. As the man is so will his work; it is essential, therefore, for a student to have access to the best models and to be brought into contact with the best and highest thought, both ancient and modern. In this way will his own character be formed by the true artistic influence which flows from great men and great work. Carlyle says in all true works of art the Godlike is rendered visible. If so, the artist must be creative, and our aim should be to make our students receptive, imaginative, and fruitful in ideas and design, so that they may become creators and beauty. Our motto is "Design with beauty, build in truth." We might well add Shakespeare's words—"By knowledge are we lifted up to the gates of Heaven." For our students I would say, let the motto of our Association become your own motto, and with it in your hearts take full advantage of the education offered to you here in both schools, remembering that the Evening School is the complement of the Day school. Make it an aim to keep yourselves ever open to the artistic influence by sincere and fruitful study. Robert Louis Stevenson in one of his delightful essays says that the best artist is not the man who keeps his eyes fixed on posterity, but the one who loves the practice of his art. And no art can give its author more intense pleasure than the mistress to which you are devoted. Beauty in architecture has many manifestations; you may have it in the exquisitely delicate and refined detail or in that which is splendidly bold, in the stately and dignified plan and elevation, in the fine lines of the column, or in the sense of superb scale. We have in England to struggle against the small and petty detail which disfigures building after building to-day. We need to absorb into our minds the principles of broad and fine work. Think, for instance, of the fine capital of a classical column of Francis I.'s time; the sweep of the line of the horns or volutes as vigorous as the clean line of a rapier, the flat relief of the intermediate carving as delicate as the arabesque pattern on its blade.

I have lately been reading some of Sir Joshua Reynolds's "Discourses"—a work I would commend to your notice—and I was struck with the earnestness with which he impressed upon the students of the day the necessity of possessing themselves with the spirit of the great masters; and also with the manner in which he cheered them with encouragement to be determined to succeed when he roundly states "he should have felt the same determination to become the most eminent physician as he then felt to be the first painter of his age and country." Such a statement in its simplicity reminds me of the remark, attributed, I believe, to

Mr. Edison, "that success in life is due to 1 per cent. of inspiration and 99 per cent. of perspiration." It was Sir Joshua Reynolds who, as I daresay some of you will remember, went as a distinguished young painter of thirty years of age to Italy to see for the first time the work of the great masters of the Renaissance. So impressed was he that he has written he felt he must become again as a little child, he had so much to learn. In this wonderful humbleness of heart Sir Joshua reminds me of Sir Christopher Wren, who showed the same willingness to learn as is illustrated in that most interesting letter, which you probably know, which he sent from Paris, where he had gone for the purpose of study. Surely these two men were much alike in character, with the same wide and sane way of looking at things and the same thirst for knowledge. That "spirit of the old masters" which they possessed made them strive for a right kind of perfection in their work. It made them reject what was small and petty and adopt the manly and virile. It made them discern and eliminate their defects, for, as Sir Joshua said to his students, "it was not by their defects that considerable artists acquired their reputation; they have a right to our pardon, but not to our admiration." He also taught that a student must not by mistaken industry lose his time in that which is merely ornamental. And in speaking of copying the old masters he says—"Instead of copying the touches of those great masters, copy only their conceptions. Instead of treading in their footsteps, endeavour only to keep the same road. Labour to invent on their great principles and way of thinking. Possess yourself with their spirit. Consider with yourself how a Michelangelo or a Raphael would have treated this subject, and work yourself into the belief that your picture is to be seen and criticised by them when completed. Even an attempt of this kind will rouse your powers." He knew of his art, as we know of ours, that it is a progressive art; it is ever growing, and to-day, when science advances with strides, when space is being conquered, and distant lands may soon be easy of access, who among us can prophesy the future of the young architects? It shines in the distance as something mysteriously and gloriously interesting. And that future is not for these men only who carry off the most prizes. We cannot all be "Prix de Rome" men. It is for all who do good work, and again I quote from Robert Louis Stevenson:—"All who have meant good work with their whole hearts have done good work." No man, even the greatest, ever arrives at the ultimate goal; he does his part, and passes on his experience to the next in the race, and very soon that responsibility will be yours. The future is for you, as, again, it will be for the young men who come after you.

The Future.

In the meantime you have to prepare for that future, remembering that according to the truth and sincerity, the high ideal, that you put into your work so will your influence upon the public be, and with you rests the education of the public. In order to emphasise this I am again going to quote to you from Sir Joshua Reynolds's "Discourses," and I do not apologise for this, because, as I have told you, great men are our best teachers. In speaking to his audience on the subject of raising the public ideal, he reminds them of a remark of Euripides, who said to the Athenians, "I do not compose my words in order to be corrected by you, but to instruct you." And he adds—"It is true to have a right to speak thus a man must be an Euripides. However, this much may be allowed, that when an artist is sure that he is upon firm ground, supported by the authority and practice of his predecessors of the greatest reputation, he may then assume the boldness and intrepidity of genius; at any rate, he must not be tempted out of the right path by any allurement of popularity which always accompanies the lower styles of painting." I think we may say that this is equally true of architecture. Great men, who are the truly thoughtful men, always sound again and again the note of character. They know that a nation's place depends upon its national character, and the men and women of the day are the nation. In a sense we are all artists; but to you young men, who are

not only artists in this general sense, but belong to one of the noblest—perhaps the noblest—of the artistic professions, I would quote as a motto, and in conclusion of my address, King Alfred's words:—"This will I say—that I have sought to live worthily while I lived, and after my life to leave to the men that come after me a remembering of me in good works."

Mr. A. Keen,

in proposing a vote of thanks to the President, said he had known Mr. Horsley from the day he first entered on his architectural career, and he congratulated him on the undoubtably important position he had reached and on being chosen as President of the Association. Mr. Horsley had given them a thoughtful address, which he would rather think about than talk about. There was plenty of material in the address for reflection, but it was not an address about which it was easy to speak at short notice. Mr. Horsley had given them two quotations from King Alfred, both of which were peculiarly appropriate to them. The second quotation—"that I have sought to live worthily while I lived, and after my life to leave to the men that come after me a remembering of me in good works"—was particularly applicable to the work of architecture, because the architect's work was so alluring; and if it was good it exerted a good influence on people for a long time, whilst if it was bad it exerted a bad influence, which also lasted for a long time. The other quotation, which dealt with tools and material, was also appropriate to them in that Association, because he claimed that the tools they used and the materials they put at the disposal of the students were the very best. At all events, they did not know how to make them better. Mr. Horsley had also referred to the advice given by Sir Joshua Reynolds, that a student must not by mistaken industry lose his time in that which is merely ornamental. He had always considered that the syllabus which the Board of Architectural Education had issued for the guidance of architectural schools was a remarkable document, and expressed in an able way the principle that all sound architectural design must proceed from building (using the word in its broadest possible sense)—that it must be an expression of the uses of the building. Mr. Horsley had had a great deal to say about architectural education in their school and in other places, but he always felt that there was a danger connected with the teaching of architecture in the school, in that it might tend to become too much a matter of pencil and paper, without sufficient reference to actual construction and material things. Those, however, who had had the direction of that school had always striven to direct the students in the opposite direction, and he always covered himself with the thought that in England, at any rate, they had had the Gothic revival, and the influence of that revival was, of course, in the direction of teaching that architectural design was an expression of the uses of a building. He did not think at first sight that anyone quite realised how great an influence the Gothic influence was and how strong it would continue to be for a long time, and how powerful a corrective it would be to the tendencies of what they might call the academic method of architectural teaching and training. They had heard of the hopes and aspirations of the founders of the Architectural Association sixty-four years ago, and, of course, these founders never for a moment realised how far the work which they commenced would go and how great an effect it would have in the three generations which had elapsed since they put their hands to the work. Nor did he think they at the present time could have any idea of how much farther it was likely to go before it stopped, if it ever did stop. There could be no doubt that they had arrived at a stage when there was going to be another shaking together of the dry bones, and it remained to be seen what kind of body arose from it. There were all sorts of useful schools carrying on work on different lines, but until they were co-ordinated to some extent they could not get the best possible results from them. Mr. Horsley had suggested that the Royal Academy should be brought in in some active way, and he himself had always felt that the

Academy had at its disposal such assets, which no other school in the country had, that if the Royal Academy could see its way to work in line with the other schools of architecture, and ultimately with the School at Rome, which, he understood, was to be much extended and developed, then the results could not fail to be of the best possible kind. Whether that would come about or not it was impossible to predict, and it seemed to him that the Academy must surely realise before long that its right place was at the head of all the other architectural schools, and that students from these schools ought to be sent there, and, if possible, to Rome afterwards. He did not himself know what the school at Rome was to consist of—whether it was to be merely a school of archaeology and architecture, or whether sculptors and painters were to be associated. If, however, something of the latter kind were done, then they might have a British school at Rome which they would have reason to feel exceedingly proud of. He believed there would be an opportunity before long to send out students in considerable numbers, and if the school was of such a character as he hoped, then the students would be in a very enviable position.

Mr. Curtis Green,

who seconded the motion, said that in 1892, the year when he began his architectural pilgrimage, a book was published entitled "Architecture: A Profession or an Art." The master he was then with presented him with a copy, and attached to it was a little challenge that he should answer the question in his own person. It consisted of a series of essays edited by Mr. Shaw and Mr. Jackson and written by such eminent men as the late Mr. Bodley, Professors Lethaby and Blomfield, Mr. Newton, and Mr. Prior; and one of the most inspiring essays, on "Unity in Art," was by Mr. Horsley, their President. He read the essay again last night, and it

was a delightful study, as fresh, and unfortunately in some respects as true, to-day as the day when it was written. Mr. Horsley became a name to him—a name standing up amongst those who counted. Twelve years ago he was so fortunate as to become a neighbour of Mr. Horsley, and found that he was as good as his written word, and that he admitted unknown and untried young men to the circle of his acquaintance and good-fellowship. Mr. Horsley probably influenced for good his slow and painful architectural development. They had all had some experience of their new President during the years that he had worked for the Association. Those of them who were so fortunate as to go on the excursion this year knew something of his qualities of leadership. He was sure that he might speak for the present Council by saying that they desired nothing better than to serve their art by following his lead and by doing what they could to make his year of office worthy of him and of the best traditions of the Architectural Association. They had listened that night to his Presidential address, the scholarship and wise discretion of which had inspired them greatly. Only those, like Mr. Keen, who had had this honour thrust upon them could speak adequately of the time, the labour, and the self-sacrifice demanded of the President for the time being in carrying on the work of the Association. That Association stood for unity in art, and they were the spiritual offspring of the masters of architecture and of the founders of the Association, and those of them who might read their President's address would feel that the Association was living up to its great reputation of service.

Mr. Paul Waterhouse

said the President had spoken on a subject which was most interesting to them—themselves. He did not mean to say that they were all students in the sense of being

between the years of eighteen and twenty-eight, and, indeed, last week he found himself in the venerable position of being the parent of a student. But he would like to say that no man who was an architect or hoped to be useful as an architect could ever abandon himself to the feeling that he had become aged or even middle-aged. Architectural work necessitated in the production that spirit of eternal youth which made a man spring to a new job with the same delight that a student started off to win the Soane Prize, for example. Their President had trodden on very dangerous ground by suggesting a comparison between the architectural education of his day and that of the present. They knew there were architects of all kinds. There were architects who were successful without being good draughtsmen, and excellent draughtsmen who were not successful architects. Now and then they came across men who were a brilliant combination of both. Mr. Horsley was one of them, and he had also discovered that when an architect reached a position of eminence he was expected to be a public speaker as well. That night their President had shown all possible doubt that he combined the three great qualities of the modern architect, and therefore when he asked them to compare the methods of to-day with those of the past he must remember that many of them would be apt to say, "Give us the good old days if they produced such men as we have sitting there."

The resolution having been carried,

The President

briefly replied, and remarked that he realised he had a difficult task in following Mr. Keen. It was his firm intention, however, to do all he possibly could during his year of office to further the best interests of the Association.

ARCHITECTURAL SOCIETIES.

Architectural Craftsmen's Society: The Glasgow Technical College.

In the course of his presidential address to the Glasgow Technical College Architectural Craftsmen's Society on Friday evening Mr. James S. Boyd, Licentiate R.I.B.A., dealt with the application of practical geometry to (a) the solution of problems in stonecutting, and (b) to the full-size drawing down and mould cutting in masonry work.

Referring to the training of young masons who desire to become qualified foremen, he said that such should possess considerable skill in the application of practical geometry to the varied and complicated masonry problems which at times occur. Otherwise he would have difficulty in making the necessary scale drawing from which he obtains the shapes and dimensions of the blocks for ordering, and he would have even greater difficulty in drawing down the work full size on the drawing floor. Mr. Boyd described by demonstrations how to set out arches of various forms on the drawing floor, and how the moulds and bevels are developed in work of double curvature, skew bridges, interpenetrations of vaults, domes, and other more or less complex masonry constructions. Referring to the cutting of zinc moulds, he condemned the general custom of giving that work to the joiner instead of the mason, on whom rests the responsibility of producing correct work. In concluding the address, he recommended the younger masons to uphold the dignity of their crafts by making themselves thoroughly efficient, not merely as hewers of stone, but as scientific craftsmen worthy of the position of foremen.

BOOKS.

An Analysis of the Church of St. Mary, Cholsey, in the County of Berkshire. By F. J. COLE, D.Sc.Oxon., Professor of Zoology, University College, Reading. With twenty-three plates. (Oxford: B. H. Blackwell, Broad-street. London: Henry Frowde, Amen-corner. Reading: G. A. Poynder. 5s. net.)

This little work "is issued in accordance with a scheme for the publication of studies dealing with particular aspects of local history," the object of the enterprise being



South Side of Chancel.

(From Professor Cole's "Analysis of the Church of St. Mary, Cholsey.")

be very laudable one of stimulating public interest in the history of Reading and the neighbouring counties, and "to afford a means by which the general historical teaching of the University College [Reading] may gradually become connected with, and be illustrated by, the detailed evidence which is furnished by local history." The work is not lengthy, consisting—apart from some twenty excellent full-page photographic illustrations of the church—of but sixty pages of descriptive matter; but it forms a singularly able and exhaustive monograph on an interesting building, and bears evidence of much careful investigation and inquiry by the author. The style is not inapt, for an analysis the work is a very easy, and the University of Reading may be congratulated not only upon this theme for the production of these studies in local histories—of which three, including the volume under notice, appear to have been issued—but upon the very able work Dr. Cole has prepared in his analysis of the church. Holy Church must be familiar to most architectural students, but we may with advantage, in noticing the volume, quote the opinion of the author, who says:—"The late interest of our church, apart from an engaging variety of minor problems, lies in its ground plan, and in the beautiful design of its east end. . . . I not only fail to find any evidence of Saxon work in the church at Cholsey, but on the contrary there are many grounds for holding that the oldest portions of the existing church are not antecedent to the twelfth century." The work includes a detailed note on the mouldings, with careful drawings, and some excellent photographic illustrations of the building.

ERRATUM.

In our notice of "The Corrosion of Iron and Steel" (p. 216, issue of August 25) the author's name is given incorrectly; it should be J. Newton Friend.

BOOKS RECEIVED.

STRUCTURAL ENGINEERING. By Joseph Stubsand and William Harby. (London: Longmans, Green, & Co. 7s. 6d. net.)
THE HISTORICAL GROWTH OF THE ENGLISH PARISH CHURCH. By A. H. Thompson, M.A., F.S.A. (London: Cambridge University Press. 1s. net.)
ELECTRICAL MINING INSTALLATIONS. By W. W. Freademacher. A.M.Inst.E.E. (London: Constable & Co. 2s. net.)
MILL AND FACTORY WIRING. By R. Geo. Bevey. A.M.Inst.E.E. (London: Constable & Co. 2s. net.)
COSTUMES, TRADITIONS, AND SONGS OF AVOY. By Estella Canziani. Illustrated. (London: Chatto & Windus. 21s. net.)

GENERAL NEWS.

Professional Announcements.

Mr. Robert Marchant, A.R.I.B.A., has removed from 28, Theobald's-road, to 2, Bedford square, W.C.
Mr. Francis Osler, A.R.I.B.A., has removed from 5, Verulam-buildings, Gray's Inn, to 9, Gray's Inn-square.

The Grafton Gallery Exhibition.

The Exhibition opened at the Grafton Gallery on Tuesday by the Duke of Connaught is entirely pictorial. It has been arranged in aid of the National Art Collections Fund, whose aims are so worthy of support. Two works by Guardi have architectural interest, as have several drawings from Mr. Heseltine's collection and others, among them sketches by Robert Adam, Paul Sandby, and Thomas Girtin, lent by members of the newly-formed Walpole Society. Lord Curzon in his introductory speech made some good suggestions regarding State aid to art. In these days, he said, it was not possible for the National Gallery with its limited resources to resist the Transatlantic and Continental competition, and he urged that the Government grant of 5,000*l.* a year to the National Gallery should be increased to 25,000*l.* Sir Edgar Vincent, putting the obligation at 50,000*l.* per annum, thought that a liberal policy by the State in art matters was the best possible finance.

The Road Board: Grants to Highway Authorities.

During the months of July, August, and September, 1911, the Road Board, with the approval of the Treasury, have made advances amounting to 131,764*l.* from the Road Improvement Fund to County Councils and other highway authorities as follows:—For the improvement of road crusts (including grants towards tar macadam, etc., and surface tarring), 111,555*l.*; for road widenings and improvement of curves and corners, 9,120*l.*; for road diversions, 7,308*l.*; for construction and improvement of bridges, 3,781*l.* The total grants up to September 30 (including those contained in the lists published on February 11, April 29, and July 29 last) amounted to 407,154*l.*, as follows:—For the improvement of road crusts, 321,445*l.*; for road widenings and improvement of curves and corners, 44,856*l.*; for road diversions, 16,906*l.*; for construction and improvement of bridges, 23,947*l.* In addition, the sum of 8,173*l.* has been advanced by way of loan. The work of putting down trial lengths of twenty-three different kinds of road material on a section of the London-Folkestone Road between New Eltham and Sidcup has now been completed. Five trial lengths have also been put down on the Portsmouth Road in the Borough of Wandsworth, between Wimbledon Common and Robin Hood's Gate.

Sale of Properties.

The estates that have just been placed in the market comprise Woodcote Park, near Epsom, about 350 acres, of which the mansion has a facade ascribed to Inigo Jones, with painted ceilings by Verrio, and carving by Grinling Gibbons or his school. Burford Priory, Oxfordshire, represents the St. John's Priory, which appertained to the wealthy abbey of Black Canons, at Eynsham, dedicated to the Virgin and SS. Peter and Paul, and founded by William, Duke of Gloucester, in or about 1170; the mansion, built by Edward Harman soon after the Suppression, was

bought by Sir Lawrence Tanfield, who bequeathed it, with the manor, to his grandson, Lucius Carey, Viscount Falkland, who fell at Newbury, and had previously sold the estate to Speaker Lenthall; Lenthall enlarged the house and built the chapel; Colonel B. de Sales La Terriere has latterly improved and renovated the property. Burford Priory is depicted in Waller's painting, "The Empty Saddle"; on the estate are Kitt's Quarries, which supplied some stone for the interior of Westminster Abbey and St. Paul's. Redlynch, near Bruton, Somerset, a seat of Lord Ilchester, extends to 4,500 acres, and the house was built in 1672 for Sir Stephen Fox, ancestor of the present possessor. No. 139, Piccadilly, the home of Lord Byron after his marriage, and of the Duke of Queensberry, and latterly of the late Lord Glenesk, for whom the stone facade was built after designs by R. S. Wornum; the lease, of which sixteen years are unexpired, is held from the Woods and Forests at a ground rent of 812*l.* 10s.

No. 119, Piccadilly.

These premises, lately vacated by the Royal Automobile Club, have been taken over and redecored for purposes of the newly-established Cavendish Club. The house, which is situated upon the Sutton estate, was converted for the former Club a few years ago, and some structural alterations were since made for them by Mr. E. Keynes Purchase.

Changes in Haymarket.

Messrs. Garrard & Co., Ltd., have just removed from their old house at the corner of Panton-street to new premises in Albemarle and Grafton streets. The house was originally opened by the sign of the "King's Arms" by George Wikes in 1721; to him succeeded William Garrard, his assistant; in 1791 the business passed to Robert Garrard and his sons, as Crown jewellers and goldsmiths. Nos. 18-21, at the corner (north) of Orange, formerly James, street, with Nos. 1, 3, and



South Door of Nave—West Jamb.

(From Professor Cole's "Analysis of the Church of St. Mary, Cholsey.")

5, Orange street, are to be rebuilt by Mr. W. Cave for Messrs. Burberry, Ltd. Messrs. Garrard's new premises have been built from designs by Messrs. Ernest George & Yeates.

Carpenters' Company Lectures: University College.

As may be seen in the list of Meetings (p. 391), Mr. E. S. Prior, F.R.I.B.A., begins next week his course of lectures at University College on "English Mediaeval Architecture." The subject is attractive and there should be a good attendance. Free admission tickets may be obtained from the Secretary to University College, or from the Clerk to the Carpenters' Company.

Newcastle Municipal Buildings.

The site considered by the Committee to be the most suitable for the New Town Hall is that of the present Northumberland Baths in the Northumberland-road. The question of cost is before a Sub-Committee.

The French Renaissance.

Messrs. Bell will publish next week the history of Renaissance French architecture, on which Mr. Reginald Blomfield, A.R.A., has been engaged for many years. It will be a companion to the same author's well-known work on English Renaissance. The book will be issued in two volumes, and will be profusely illustrated from drawings by the author, scarce engravings, and other sources.

COMPETITION NEWS.

Langside District Library, Glasgow.

For this, the last of the district libraries, a site has now been fixed. The City Council on the 27th ult. approved of the recommendation of the Finance Committee to accept an offer of ground at No. 4, Sinclair-drive, containing about 1,500 sq. yds., for the sum of 1,000*l.* A special Sub-Committee, after an inspection of the ground, considered that it was admirably adapted for the purpose. As Mr. Carnegie had gifted to the Corporation a further sum of 15,000*l.* required for the erection of the two remaining libraries for the districts of Possilpark and Langside on condition that the cost of sites should not be

made chargeable to the rates, it was agreed that a grant to given from the Common Good for the purchase of this site for the Langside Library.

As in the case of the other Glasgow libraries, an open competition will be promoted for the selection of a suitable design.

The successful plan for the Possilpark Library, which was the last competition promoted, was published in the *Builder* for March 31 last, and shows the type of plan favoured.

An Extraordinary Suggestion.

We call the following from the advertisement columns of the *Glasgow Herald*:—

"The Town Council of Armadale invite architects to submit plans for a public hall and offices, costing not more than 2,500*l.*, completed, painted and furnished. A premium of 15*l.* for the selected design will be paid on its being ascertained that the design can be carried out within the cost stated, and 10*l.* will be paid for the next. The architect submitting the successful design will be entrusted with the work at the usual professional remuneration. Architects intending to submit plans will meet the Town Council on the ground at Armadale on Thursday, October 12, at 1.30*l.*"

It seems to suggest that, while public bodies are fully alive to the advantages to be gained by competitions, they have still much to learn regarding the conduct of the same. With entries as numerous as we have had in some recent competitions, we fear the travelling facilities to Armadale will prove inadequate on the 12th inst.

CONSERVATORY LOUNGE AT THE BALHAM CONSTITUTIONAL CLUB.

This little building is an addition to the club premises, and forms a lounge connecting concert-hall, reading and billiard rooms.

It is built of thin hand-made red bricks with a wide joint, and is surmounted with an entablature of concrete finished with cement and coloured.

The roof is of glass and lead.

The window frames and casements are of deal as well as the doors, and all painted a cream tone.

The interior is finished in plaster, with a simple treatment of plasters and panels distemper white, and the floor is covered with dark red quarries.

The architects are Messrs. William & Edward Hunt.

INTERCOMMUNICATION COLUMN.

External Woodwork.

Will a reader say what is the best way to treat the outside woodwork of a house of wood and brick? It is like an old Chester house, similar to those situated in the Rows, and is probably of the Queen Anne or Elizabethan period. The outside woodwork has always been oiled and then varnished. Would it be preferable to paint it, or to continue oiling it? If oiling, how many coats of oil are necessary, and should a finish be given with a coating of varnish? What kind of oil is the best to use and what kind of varnish? Is there any book on this subject?

Barmouth, Wales.

A. H. M.

Terrazzo Flooring.

How is terrazzo flooring laid? Full particulars will oblige. EDWIN F. SCAMELL, Salisbury.

[*.* The following specification is given by a well-known firm, whose name will be sent if desired:—A layer of $\frac{1}{4}$ in. of sand and cement, two and a half to one, to be laid on floated surface provided by the builder. On top of this layer about $\frac{1}{2}$ in. thick of compost of marble chips $\frac{1}{4}$ in. to 5-16 in. mesh, and cement gauged two to one is to be laid. The surface of this is then to be thickly sown with marble chips average $\frac{1}{4}$ in. to $\frac{3}{4}$ in. mesh, and the whole floor to be then rolled to imbed the larger pieces in the smaller, and trowelled to a true surface. When sufficiently set the floor is to be rubbed down with stone to remove the surface cement and smooth the face. It is to be afterwards sprinkled with dry cement and rubbed down a second time to fill up any pinholes and to give the required grit polish.—Ed.]



Addition to Balham Constitutional Club. (See also page 379.)

Messrs. William & Edward Hunt Architects.

EDITORIAL SUMMARY.

"The Purpose of the Architectural Competition" is the subject of our leading article. The future of the Architectural Association is considered in the second leader (p. 380).

"Notes" (p. 381) are: "Cheap Churches"; "The Architect's Garden"; "The Survey of London"; "The L.G.B. and Civic Amusements"; "The Empire Palace Fire"; "Oriel College, Oxford"; "The Disaster at Austin, Pennsylvania"; "Railway Nationalisation."

The eighth section of Mr. Shaw Sparrow's article on "The Story of the Bridge" begins on p. 382. The point discussed is the position of architects in such enterprises.

A report of Mr. G. C. Horsley's Presidential Address to the Architectural Association is given on p. 385.

Professor Cole's "Analysis of the Church of St. Mary, Chelsey," is reviewed on p. 388.

The Monthly Review of Construction (p. 393) opens with an article on "Timber in Roof Coverings." Other articles (p. 395) are on "The Colouring of Wood" and "A Reinforced Concrete Flooring."

An article on "The Appointment of an Arbitrator" heads the Building Trade Section (p. 398), and a note follows on "Extraordinary Traffic."

The Master Painters' Convention at Derby is referred to on p. 398.

Illustrations are given on p. 401 of the drawings by Mr. G. Wyville Home which obtained the Silver Medal of the Architectural Association.

MEETINGS.

FRIDAY, OCTOBER 6.

Birmingham University.—Mr. Raymond Unwin's inaugural lecture on "Civic Design," in the Mason College Building. 5.30 p.m.

SATURDAY, OCTOBER 7.

Institution of Municipal Engineers (Yorkshire and Northern Districts). Meet at N.E.R. station, Leeds, 10.55 a.m. Visit to Messrs. Thomas Green & Sons, Ltd., Smithfield Ironworks, to the Headingley Electric (Water) Pumping Station, and to the new Filter Beds.

MONDAY, OCTOBER 9.

Incorporated Clerks of Works' Association (Carpenter's Hall, London-wall).—Monthly meeting. 8 p.m.

MONDAY, OCTOBER 2, TO TUESDAY, OCTOBER 10.

Royal Institute of British Architects.—The Ninth International Congress of Architects, Rome.

THURSDAY, OCTOBER 12.

University College.—First of eight public lectures by Mr. Edward S. Prior, F.S.A., F.R.I.B.A., on "English Medieval Architecture." 6 p.m.

Sheffield Society of Architects.—President's Address and Exhibition of Students' Work.

FRIDAY, OCTOBER 13.

London Salon of Photography (Sa, Pall-mall). Mr. Arthur Marshall, A.R.I.B.A., on "With a Camera in Holland." 8 p.m.

Gloucester Architectural Craftsmen's Society.—Mr. J. S. Glen-Primrose on "The Microscopical Examination of Architectural Materials."

ILLUSTRATIONS.

No. 10, Carlton House-terrace.



MESSRS. DETMAR BLOW & FERNAND BILLEREY are the architects of this building, carried out for Viscount Ridley. The work, started in 1906 and completed the following year, consisted in remodelling the interior structure and decorating that part of Nash's building on the east side of the Duke of York's steps. Though the main walls and general

distribution of the first floor were retained, the former inside arrangement of areas, service stairs, lift wells, etc., was swept away, and the old staircase was pulled down in order to build a new staircase of architectural proportions and to simplify the planning of the drawing-rooms. Viscount and Viscountess Ridley, who directed the work with the greatest interest, insisted on great simplicity in design and great care in the elaboration of the detail.

The walls of the entrance-hall and those of the principal and secondary stairs were faced with Caen and Painswick stone, whilst the steps themselves, 7 ft. 6 in. long, were built in solid black marble; the ceilings and vaultings were formed in stucco, jointed to match the stone.

The wrought-iron and bronze railing was executed by Mr. W. Bainbridge Reynolds, the bronze ornaments being specially modelled under the architects' directions by M. E. Madeline.

The drawing-rooms were panelled, the mouldings and ornaments being gilt and "patined," in order to give them the appearance of old work. The ceilings of the two end drawing-rooms were enriched with modelled plaster decorations, while that of the gallery was covered with a painted canvas by MM. Bremont & Tarkmain.

The work of building and decorating was carried out by Messrs. Trollope.

The Story of the Bridge.

THE illustrations of the bridges at Avignon and Toledo are in connexion with Mr. Shaw Sparrow's eighth article (p. 382).

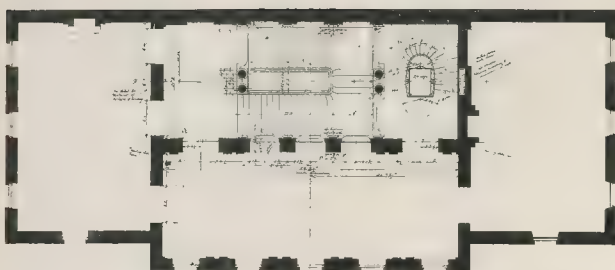
Burlington Arcade.

THE additional story to the Piccadilly frontage of the Burlington Arcade, shown on the accompanying plate, has been recently erected. It

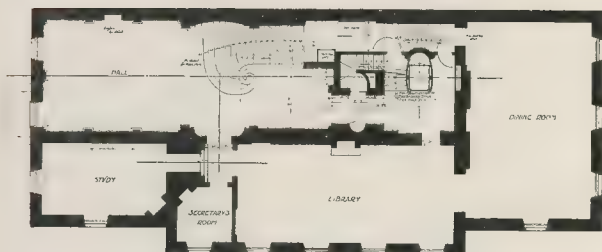


Ballroom: No. 10, Carlton House-terrace.

Messrs. Detmar J. Blow, F.R.I.B.A., & F. Billerey, Architects.



First Floor Plan.



Town Residence for Viscount Ridley: Ground Floor Plan.

Messrs. Detmar J. Blow, F.R.I.B.A., & F. Billerey, Architects.

is surmounted by the arms of Lord Chesham, which are executed in terra-cotta made by Messrs. Stiff, of Lambeth. Mr. Maddison, of Canning Town, was the contractor, and Professor Beresford Pite, F.R.I.B.A., the architect.

The original fine yellow brick facings of the upper portions of the internal elevations of the Arcade have been cleansed from the paint-work of nearly seventy years and restored.

Nos. 55 and 56, Threadneedle-street.

This building has been erected for Messrs. W. B. Blydenstein & Co., who, previous to the rebuilding, occupied No. 56. They occupy the ground, first, and basement floors: the other floors are in various occupations, and are approached from a staircase in Hercules-passage.

The floors used by Messrs. Blydenstein & Co. have been fitted up to suit their requirements. The walls are covered in marble and faience, and all fittings are in hard wood, mahogany being used for the offices, and fumed oak in the partners' rooms.

The front of the building is in Portland stone, with metal casements to the windows, and has been designed so as to give as much light as possible to the office floors.

The architect for the building is Mr. Chatfield Clarke, F.R.I.B.A., and the builders are Messrs. Hall, Beddall, & Co.

FIFTY YEARS AGO.

From the *Builder* of October 5, 1861.

The National Exhibition in Florence.

A MEMORABLE day was September 15 for Florence—the joyous excitement shared by all classes, the richly varied decoration of streets, the display on every side of national colours and symbols, and the enthusiastic reception given by this people to their King, altogether combining in what seemed the highest expression of that new life to which liberated Italy has awakened; and at the same time asserting for her—the “Etrurian Athens”—that brilliant position vindicated by her past and present; that title which whatever by future contingencies, must continue to command regards and honours for her as, by indefeasible right, the intellectual if not the political capital of united Italy. As for the scene in the palace of the National Exhibition that morning, it was rather a court ceremonial than anything

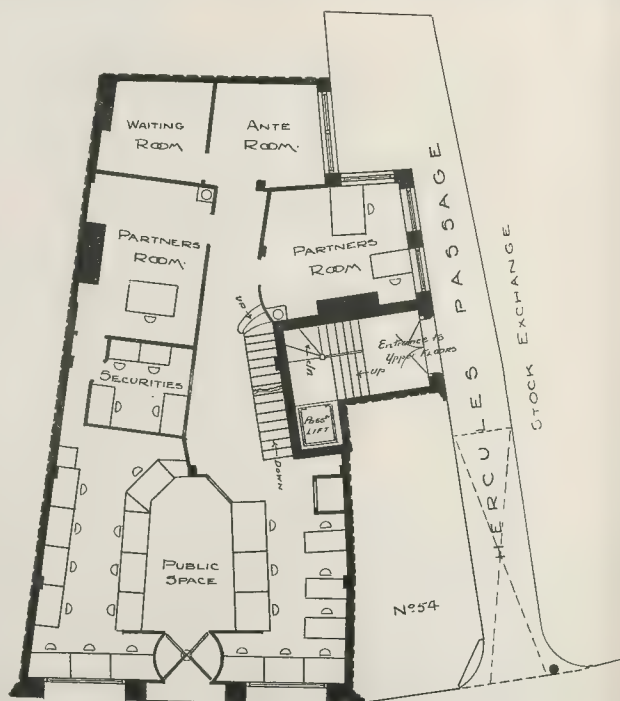
else, though, indeed, most beautiful to behold and attended with demonstrations most fervent.

The story of Italian exhibitions, industrial and artistic, may be said to have its centre

in the Tuscan examples. Under the boldly-innovating government of Peter Leopold was ordered the first public exhibition of fine arts this country had yet beheld, in 1791. French invaders next set the examples, to be followed with more systematic procedure in the present century; and under their auspices took place at Turin, 1805, '11, '12, the first series of general exhibitions for all local produce, artistic, industrial, agrarian. After the legitimate restorations were founded in the same kingdom, under Charles Felix, triennial industrial exhibitions, the first of which took place in the beautiful suburban palace of Valentino, near Turin, in 1829, the number of exhibitors being 502; and with what success this system advanced in subsequent years appears from the steady increase of those numbers, till, in the last instance, at the Turin exhibition of '58, it reached the maximum of 1784, among whom 931 then received prizes.

INTERNATIONAL ART EXHIBITION, VENICE.

The Municipal Council of the City of Venice will hold their Tenth International Art Exhibition on April 15-October 31, 1912. Artists of international repute and those who have won distinction in national and foreign exhibitions are invited to send in works, but, with the exception of “one-man shows,” works already shown in Italy will be excluded. Goods must be delivered on the premises, Gardini Pubblici, not later than March 10, and artists, whether invited or not, will be allowed rebates of 50 per cent. for carriage, and will not be charged for unpacking or repacking. The Municipality will allot a sum for purchasing works of art, to be chosen by a committee of five elected by them, and to be then placed in the International Gallery of Modern Art. Communications should be addressed to the General Secretary, A. Feadeletto, Municipio di Venezia, and notification of intention to exhibit should be made before January 1 next.



THREADNEEDLE STREET

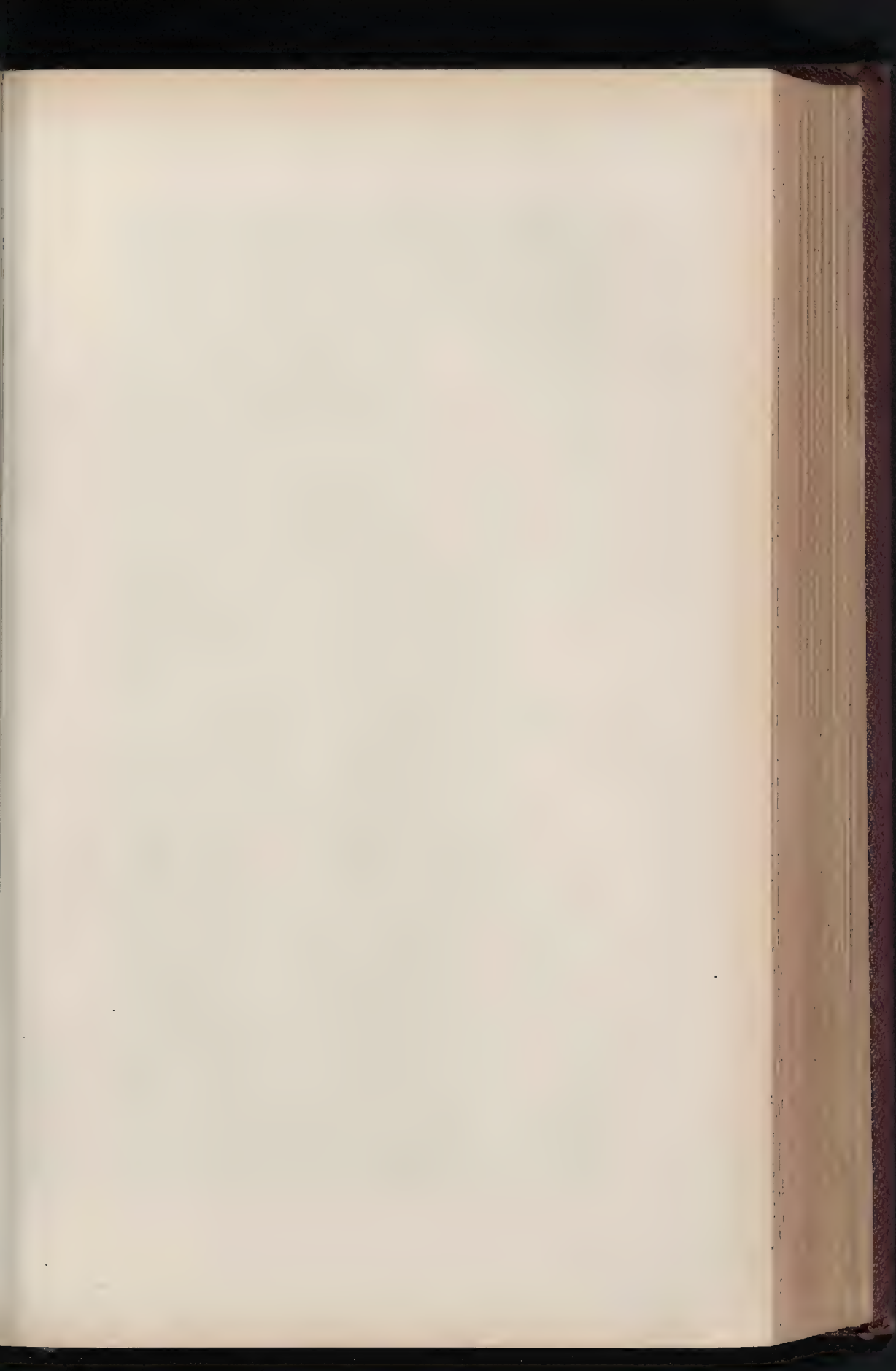
Nos. 55 & 56, Threadneedle-street, E.C.

Mr. H. Chatfield Clarke, F.R.I.B.A., Architect.

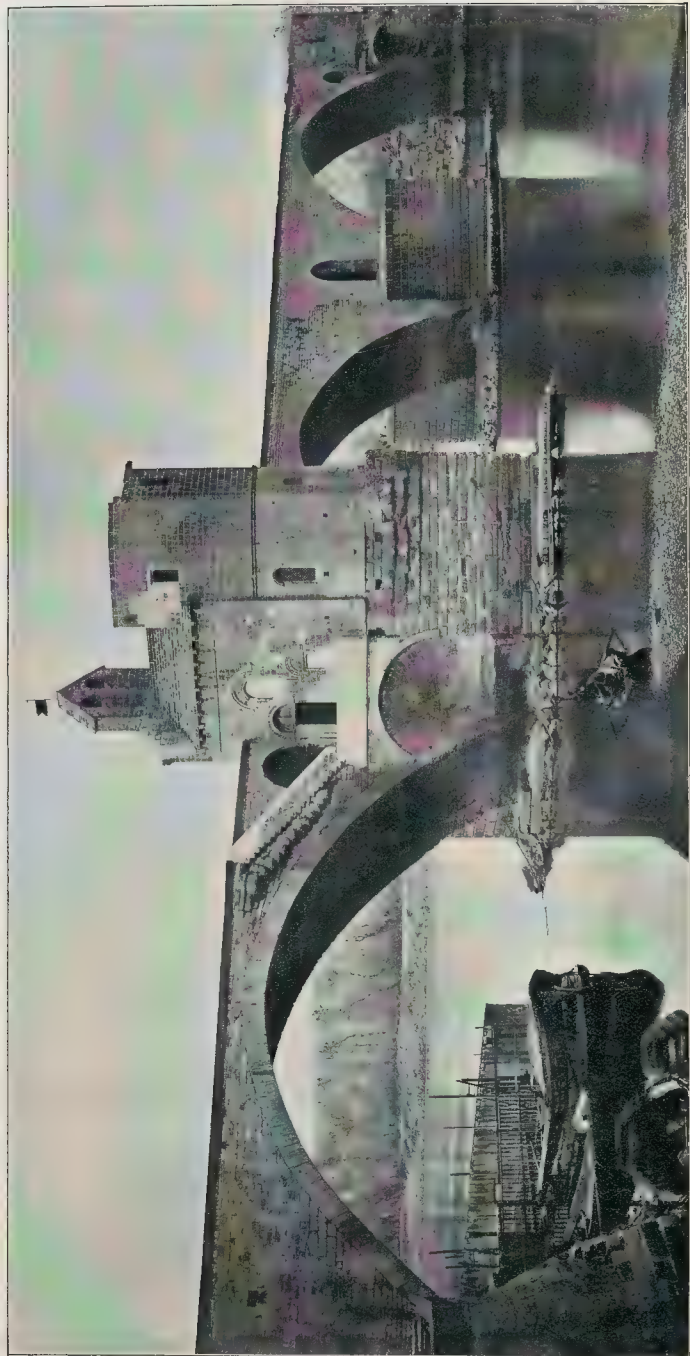


Sprague & Co., Ltd., Printers, 4 & 5 East Ham Lane, E.C.

ADDITIONS TO THE BURLINGTON ARCADE, LONDON.—PROFESSOR BERESFORD PITE, F.R.I.B.A., ARCHITECT.



THE BUILDER, OCTOBER 6, 1911.



PONT ST BÉNÉZET, AVIGNON, XIIth CENTURY.

"THE STORY OF THE BRIDGE."—VIII.

Sprague & Co., Ltd., Printers, 4 & 5 West Harding St., E.C.

THE BUILDING, OCTOBER 6, 1901





VISCOUNT RIDLEY'S STAIRCASE. 10 CARLTON HOUSE TERRACE. MESSRS DETMOL & CO., F.R.I.B.A., AND F. BLISS, ARCHITECTS.



Photo by Anderson.

THE ALCANTARA AND ALCAZAR BRIDGE, TOLEDO.

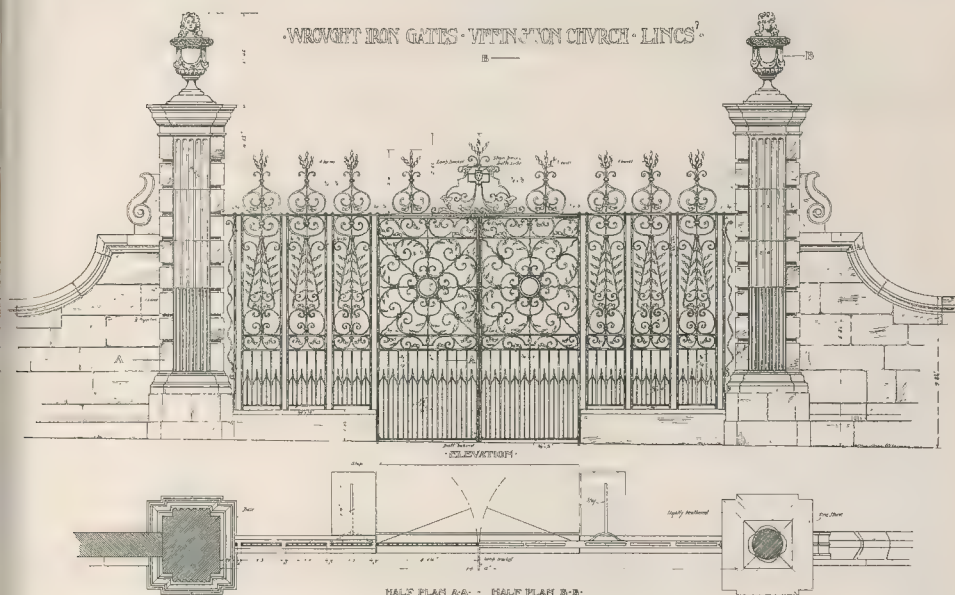
"THE STORY OF THE BRIDGE."—VIII.



Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

55 AND 56 THREADNEEDLE STREET, E.C.—MR. H. CHATFIELD CLARKE, F.R.I.B.A., ARCHITECT.

MONTHLY REVIEW . of . CONSTRUCTION.



Measured Drawing. By Mr. F. J. Lenton. (See page 396.)

TIMBER IN ROOF COVERINGS.

MODERN roofs constructed for industrial purposes frequently consist of a steel frame on which is placed a timber covering carrying the load or other roofing material. Much variety of practice exists in proportioning purlins, common rafters, boarding, etc., and this covering; and, as engineers usually depart from the accepted standards of the older authorities in the management of these parts, the following rules have been compiled with a view to placing this matter on a rational basis, and enabling the designer to readily ascertain suitable scantlings for all ordinary cases.

Timber Beams.

In the majority of cases the timber employed is northern pine from Baltic or its Sea ports, the rules given are applicable to that material or other of similar strength. They may, however, be readily adapted to suit other timber if required. For convenience, loads are taken in pounds, spans in feet, breadth, depth, and

deflection of beams in inches, and stress in pounds per square inch. The following is the notation employed:—

- W = Total load in pounds.
- w = Load per foot run in pounds.
- F = Stress in pounds per square inch.
- E = Modulus in pounds per square inch.
- L = Span in feet.
- l = Span in inches.
- b = Breadth in inches.
- d = Depth in inches.
- Δ = Deflection in inches.

Published rules on which much building work has been based show that timber may be safely subjected to 1,200 lb. per square inch as a maximum stress in beams. Its modulus of elasticity may have any value between 1,000,000 lb. and 2,000,000 lb. per square inch; 1,500,000 lb. has been taken as a mean value.

As the usual bending moment and deflection formulae, such as $M = \frac{WL}{8}$, or

$$\Delta = \frac{5WL^3}{384EI}$$

do not immediately relate either load or deflection to scantling, the following table has been prepared, giving for the

more usual conditions of loading, the stress on the beam, the maximum safe load, and the deflection under a given load or stress, and the deflection with the maximum safe stress. All coefficients are reduced to their lowest terms and decimal coefficients are avoided, so as to make the formulae readily available for cancelling or for solution on the slide rule. Formulae for cantilevers have been included to make the table more useful for general reference.

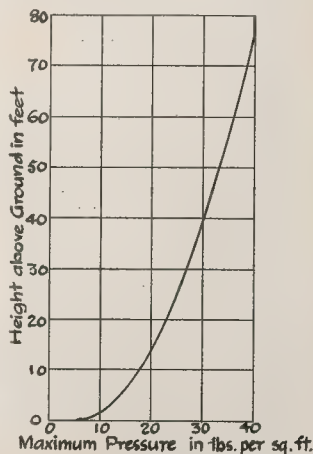


Fig. 1. Variation of Wind Pressure with Height.

TABLE I.—BEAMS OF NORTHERN PINE.
 $E = 1,500,000$ lb. per square inch. $F_{max.} = 1,200$ lb. per square inch.

Ends.	Load.	Stress.	Max. Load.	Deflection		
				with given Load.	with given Stress.	with Max. Stress.
supported	Distributed ...	$F = \frac{9WL}{bd^2}$	$W_{max.} = \frac{400bd^2}{3L}$	$\Delta = \frac{9WL^3}{50,000bd^3}$	$\Delta = \frac{FL^3}{50,000d}$	$\Delta_{max.} = \frac{3L^3}{125d}$
		$F = \frac{18WL}{bd^2}$	$W_{max.} = \frac{200bd^2}{3L}$	$\Delta = \frac{9WL^3}{31,250bd^3}$	$\Delta = \frac{FL^3}{62,500d}$	$\Delta_{max.} = \frac{625d}{36L^2}$
supported	Concentrated.	$F = \frac{36WL}{bd^2}$	$W_{max.} = \frac{100bd^2}{3L}$	$\Delta = \frac{27WL^3}{15,625bd^3}$	$\Delta = \frac{3FL^3}{62,500d}$	$\Delta_{max.} = \frac{36L^2}{625d}$
		$F = \frac{72WL}{bd^2}$	$W_{max.} = \frac{50bd^2}{3L}$	$\Delta = \frac{27WL^3}{15,625bd^3}$	$\Delta = \frac{FL^3}{15,625d}$	$\Delta_{max.} = \frac{48L^2}{625d}$
fixed, one free	Distributed ...	$F = \frac{9WL}{bd^2}$	$W_{max.} = \frac{400bd^2}{3L}$	$\Delta = \frac{9WL^3}{50,000bd^3}$	$\Delta = \frac{FL^3}{50,000d}$	$\Delta_{max.} = \frac{3L^3}{125d}$
		$F = \frac{18WL}{bd^2}$	$W_{max.} = \frac{200bd^2}{3L}$	$\Delta = \frac{9WL^3}{31,250bd^3}$	$\Delta = \frac{FL^3}{62,500d}$	$\Delta_{max.} = \frac{625d}{36L^2}$
fixed, one free	Concentrated.	$F = \frac{36WL}{bd^2}$	$W_{max.} = \frac{100bd^2}{3L}$	$\Delta = \frac{27WL^3}{15,625bd^3}$	$\Delta = \frac{3FL^3}{62,500d}$	$\Delta_{max.} = \frac{36L^2}{625d}$
		$F = \frac{72WL}{bd^2}$	$W_{max.} = \frac{50bd^2}{3L}$	$\Delta = \frac{27WL^3}{15,625bd^3}$	$\Delta = \frac{FL^3}{15,625d}$	$\Delta_{max.} = \frac{48L^2}{625d}$

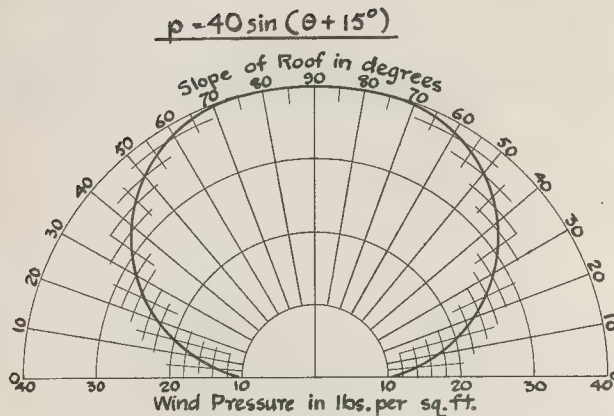


Fig. 2. Wind Pressure Normal to Slope of Roof.

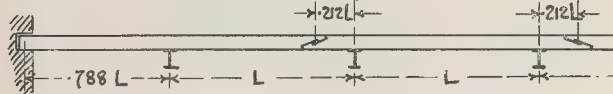


Fig. 3.

Wind Pressures and Snow Loads.

One of the principal loads to which roof timbers are subjected is the pressure due to the wind, and associated with it and closely interdependent on it we should consider snow loads.

Closely compacted snow may be taken as weighing 5 lb. per cubic foot, and the maximum depth to which it is likely to lie on roofs of flat pitch may be taken as 2 ft. in these latitudes. On steep pitches less snow will lodge, and it may be taken for granted that a heavy snow load and a high wind pressure will not occur at the same time, as the high wind would dislodge the snow.

Of the rules for determining the pressure of the wind normal to the slope of a roof, the pressure on a vertical plane being given, the best known are those of Duchemin and Langley, and Unwin (based on Hutton's experiments).

Let P = Pressure in pounds per square foot on a surface normal to a horizontal wind.

p = Pressure in pounds per square foot normal to the roof.

θ = The angle of the roof makes with the horizontal.

Then by Duchemin and Langley's rule—

$$p = P \frac{2 \sin \theta}{1 + \sin^2 \theta} \quad \dots \dots (1)$$

and by Unwin's rule—

$$p = P \sin \theta \frac{1 + 2 \sin \theta}{1 + \sin^2 \theta} \quad \dots \dots (2)$$

These rules, however, are both open to exception in that snow loads, which are variable with different angles, have to be separately computed. As tending to simplicity, the author proposes to use the following rule:—

$$p = P \sin (\theta + 15^\circ), \text{ for values of } \theta \text{ up to } 75^\circ, \text{ and}$$

$$p = P, \text{ for values of } \theta \text{ above } 75^\circ \quad \dots \dots (3)$$

This closely approximates to the pressures given by Rules (1) and (2) at the intermediate and higher angles, while at the lower angles it makes due allowance for snow loads.

Most authorities are agreed that it is unnecessary to allow for more than 40 lb. wind pressure per square foot on the most exposed structures, and that such pressure is only obtained at great height, and decreases in a somewhat indefinite way nearer the ground. As a convenient working rule the author uses the following:—

$$P = 4 \sqrt{H} + 5, \text{ for heights up to } 70\text{--}80 \text{ ft. above the ground, and}$$

$$P = 40 \text{ lb. per square foot above that level} \quad \dots \dots (4)$$

H being the height of the structure in feet. The diagram, Fig. 1, illustrates this variation of pressure, and will be found to agree fairly with the figures given by Goodman for wind velocities at various heights. ("Mechanics Applied to Engineering," Seventh edition. Page 503.)

A useful variation of the usual diagram of wind pressure normal to slope of roof, using the author's rule, is given in Fig. 2, in which the ordinates for a 40-lb. wind are set out radially at the angles corresponding to the roof slopes. If this is copied on tracing cloth it may be applied directly to any roof drawing, and the pressure to be allowed for may be read off without calculation.

Roof Coverings.

Table II. gives approximately the weight in pounds per foot super, and the limits of slope for the more usual roof coverings. Of these weights the component normal to the slope alone causes bending moment on the roof timbers, hence in calculations for scantlings, instead of the weight given in the fourth column, we use:—

Loading normal to slope, } $= w \cos \theta \dots \dots (5)$
excluding wind

Loading normal to slope, } $= w \cos \theta + 40 \sin (\theta + 15^\circ) \dots (6)$
and including wind

The maximum values of (5) and (6) within the limits of slope laid down are included in Table II. to the nearest pound per foot super.

We have also to allow for the occasional presence of workmen on the roof to effect repairs. As an approximation this will be considered equivalent to a concentrated load of 150 lb. applied anywhere, no allowance being made for reduction of bending moment

due to slope of roof. On roof boarding it may be assumed that, owing to the intervening roof covering, e.g., slates and battens, or zinc, or owing to tongues on the board themselves, this load is carried by a width of 18 in. In the case of boarding or common rafters, to prevent damage to the roof covering, the added deflection due to this occasional load should be limited to $\frac{1}{4}$ in.

Spans should always be taken between centres of bearings, no allowance being made for continuity, since joints are usually made over supports, and it is difficult to avoid pieces extending over not more than three supports, in which case the maximum bending moment is the same as in a single free span. The only case where an allowance for continuity is justifiable is where the end bay are made $\frac{7}{8}$ of the general length of bay and the joints are at $\frac{1}{2}$ of the length of the bay from the supports, as in Fig. 3. A this arrangement is unusual and special, no allowance has been made for it in the rule given hereunder.

Unless specifically described as finished sizes, an allowance must be made from the quoted scantlings of timber for sawn shrinkage, etc. The author has taken unwrought timber to be $\frac{1}{8}$ in. less in each direction than its nominal size, boarding wrought on one side, $\frac{1}{4}$ in. less than its nominal thickness, and scantlings wrought all over, $\frac{3}{8}$ in. less than nominal size.

Roof Boarding.

This must be proportioned for the following loads and deflections:—

Condition 1.—A distributed load of 43 lb. per foot super, including wind. (Table II., f.) As this requires a less thickness ($d = \frac{L}{6 \cdot 1}$) than Condition 5, it may be ignored.

Condition 2.—A distributed load of 12 lb. per foot super, excluding wind (Table II., f), and a central load of 150 lb. on 18 in. width. When less than 3·38 ft.

$$d = \frac{\sqrt{L^2 + 167 \cdot L}}{11 \cdot 55} \dots \dots (7)$$

Condition 3.—Deflection $\frac{1}{4}$ in., with central load of 150 lb. on 18 in. width. When L is greater than 3·38 ft.,

$$d = \frac{L}{4 \cdot 7} \dots \dots (8)$$

Table III., giving the thickness of boarding for any span, is based on the above. Where boarding is laid diagonally, the span should be measured along the diagonal.

TABLE III. ROOF BOARDING.

Actual Thickness. Inches.	Nominal Thickness.		Maximum Span.
	Sawn.	Wrought one side.	
$\frac{1}{8}$	—	—	2 ft. 8 in.
$\frac{1}{4}$	—	—	3 ft. 2 in.
$\frac{3}{8}$	—	—	3 ft. 6 in.
$\frac{1}{2}$	—	—	4 ft. 10 in.
$\frac{5}{8}$	—	—	5 ft. 4 in.
$\frac{3}{4}$	—	—	6 ft. 8 in.
$\frac{7}{8}$	—	—	7 ft. 10 in.
1	—	—	8 ft. 10 in.
1 $\frac{1}{8}$	—	—	9 ft. 10 in.
1 $\frac{1}{4}$	—	—	10 ft. 10 in.
1 $\frac{3}{8}$	—	—	11 ft. 10 in.
1 $\frac{1}{2}$	—	—	12 ft. 10 in.
1 $\frac{3}{4}$	—	—	13 ft. 10 in.
1 $\frac{7}{8}$	—	—	14 ft. 10 in.
2	—	—	15 ft. 10 in.
2 $\frac{1}{8}$	—	—	16 ft. 10 in.
2 $\frac{1}{4}$	—	—	17 ft. 10 in.
2 $\frac{3}{8}$	—	—	18 ft. 10 in.
2 $\frac{1}{2}$	—	—	19 ft. 10 in.
2 $\frac{3}{4}$	—	—	20 ft. 10 in.
2 $\frac{7}{8}$	—	—	21 ft. 10 in.
3	—	—	22 ft. 10 in.
3 $\frac{1}{8}$	—	—	23 ft. 10 in.
3 $\frac{1}{4}$	—	—	24 ft. 10 in.
3 $\frac{3}{8}$	—	—	25 ft. 10 in.
3 $\frac{1}{2}$	—	—	26 ft. 10 in.
3 $\frac{3}{4}$	—	—	27 ft. 10 in.
3 $\frac{7}{8}$	—	—	28 ft. 10 in.
4	—	—	29 ft. 10 in.
4 $\frac{1}{8}$	—	—	30 ft. 10 in.
4 $\frac{1}{4}$	—	—	31 ft. 10 in.
4 $\frac{3}{8}$	—	—	32 ft. 10 in.
4 $\frac{1}{2}$	—	—	33 ft. 10 in.
4 $\frac{3}{4}$	—	—	34 ft. 10 in.
4 $\frac{7}{8}$	—	—	35 ft. 10 in.
5	—	—	36 ft. 10 in.
5 $\frac{1}{8}$	—	—	37 ft. 10 in.
5 $\frac{1}{4}$	—	—	38 ft. 10 in.
5 $\frac{3}{8}$	—	—	39 ft. 10 in.
5 $\frac{1}{2}$	—	—	40 ft. 10 in.
5 $\frac{3}{4}$	—	—	41 ft. 10 in.
5 $\frac{7}{8}$	—	—	42 ft. 10 in.
6	—	—	43 ft. 10 in.
6 $\frac{1}{8}$	—	—	44 ft. 10 in.
6 $\frac{1}{4}$	—	—	45 ft. 10 in.
6 $\frac{3}{8}$	—	—	46 ft. 10 in.
6 $\frac{1}{2}$	—	—	47 ft. 10 in.
6 $\frac{3}{4}$	—	—	48 ft. 10 in.
6 $\frac{7}{8}$	—	—	49 ft. 10 in.
7	—	—	50 ft. 10 in.
7 $\frac{1}{8}$	—	—	51 ft. 10 in.
7 $\frac{1}{4}$	—	—	52 ft. 10 in.
7 $\frac{3}{8}$	—	—	53 ft. 10 in.
7 $\frac{1}{2}$	—	—	54 ft. 10 in.
7 $\frac{3}{4}$	—	—	55 ft. 10 in.
7 $\frac{7}{8}$	—	—	56 ft. 10 in.
8	—	—	57 ft. 10 in.
8 $\frac{1}{8}$	—	—	58 ft. 10 in.
8 $\frac{1}{4}$	—	—	59 ft. 10 in.
8 $\frac{3}{8}$	—	—	60 ft. 10 in.
8 $\frac{1}{2}$	—	—	61 ft. 10 in.
8 $\frac{3}{4}$	—	—	62 ft. 10 in.
8 $\frac{7}{8}$	—	—	63 ft. 10 in.
9	—	—	64 ft. 10 in.
9 $\frac{1}{8}$	—	—	65 ft. 10 in.
9 $\frac{1}{4}$	—	—	66 ft. 10 in.
9 $\frac{3}{8}$	—	—	67 ft. 10 in.
9 $\frac{1}{2}$	—	—	68 ft. 10 in.
9 $\frac{3}{4}$	—	—	69 ft. 10 in.
9 $\frac{7}{8}$	—	—	70 ft. 10 in.
10	—	—	71 ft. 10 in.
10 $\frac{1}{8}$	—	—	72 ft. 10 in.
10 $\frac{1}{4}$	—	—	73 ft. 10 in.
10 $\frac{3}{8}$	—	—	74 ft. 10 in.
10 $\frac{1}{2}$	—	—	75 ft. 10 in.
10 $\frac{3}{4}$	—	—	76 ft. 10 in.
10 $\frac{7}{8}$	—	—	77 ft. 10 in.
11	—	—	78 ft. 10 in.
11 $\frac{1}{8}$	—	—	79 ft. 10 in.
11 $\frac{1}{4}$	—	—	80 ft. 10 in.
11 $\frac{3}{8}$	—	—	81 ft. 10 in.
11 $\frac{1}{2}$	—	—	82 ft. 10 in.
11 $\frac{3}{4}$	—	—	83 ft. 10 in.
11 $\frac{7}{8}$	—	—	84 ft. 10 in.
12	—	—	85 ft. 10 in.
12 $\frac{1}{8}$	—	—	86 ft. 10 in.
12 $\frac{1}{4}$	—	—	87 ft. 10 in.
12 $\frac{3}{8}$	—	—	88 ft. 10 in.
12 $\frac{1}{2}$	—	—	89 ft. 10 in.
12 $\frac{3}{4}$	—	—	90 ft. 10 in.
12 $\frac{7}{8}$	—	—	91 ft. 10 in.
13	—	—	92 ft. 10 in.
13 $\frac{1}{8}$	—	—	93 ft. 10 in.
13 $\frac{1}{4}$	—	—	94 ft. 10 in.
13 $\frac{3}{8}$	—	—	95 ft. 10 in.
13 $\frac{1}{2}$	—	—	96 ft. 10 in.
13 $\frac{3}{4}$	—	—	97 ft. 10 in.
13 $\frac{7}{8}$	—	—	98 ft. 10 in.
14	—	—	99 ft. 10 in.
14 $\frac{1}{8}$	—	—	100 ft. 10 in.
14 $\frac{1}{4}$	—	—	101 ft. 10 in.
14 $\frac{3}{8}$	—	—	102 ft. 10 in.
14 $\frac{1}{2}$	—	—	103 ft. 10 in.
14 $\frac{3}{4}$	—	—	104 ft. 10 in.
14 $\frac{7}{8}$	—	—	105 ft. 10 in.
15	—	—	106 ft. 10 in.
15 $\frac{1}{8}$	—	—	107 ft. 10 in.
15 $\frac{1}{4}$	—	—	108 ft. 10 in.
15 $\frac{3}{8}$	—	—	109 ft. 10 in.
15 $\frac{1}{2}$	—	—	110 ft. 10 in.
15 $\frac{3}{4}$	—	—	111 ft. 10 in.
15 $\frac{7}{8}$	—	—	112 ft. 10 in.
16	—	—	113 ft. 10 in.
16 $\frac{1}{8}$	—	—	114 ft. 10 in.
16 $\frac{1}{4}$	—	—	115 ft. 10 in.
16 $\frac{3}{8}$	—	—	116 ft. 10 in.
16 $\frac{1}{2}$	—	—	117 ft. 10 in.
16 $\frac{3}{4}$	—	—	118 ft. 10 in.
16 $\frac{7}{8}$	—	—	119 ft. 10 in.
17	—	—	120 ft. 10 in.

TABLE II.—ROOF COVERINGS.

Materials.	Slope		Weight in pounds per foot super.	Loading Normal to Slope, excluding wind.	Loading Normal to Slope, including wind.
	from	to			
a. Corrugated-iron on purlins	5°	30°	5	5	33
b. Zinc on boarding	0°	30°	5	5	33
c. Zinc and purlins	0°	30°	7 $\frac{1}{2}$	8	35
d. Lead on boarding	0°	30°	10	10	20
e. Lead and purlins	0°	30°	12 $\frac{1}{2}$	13	23
f. Slates on boarding	20°	45°	12	12	43
g. Slates and purlins	20°	45°	15	14	45
h. Tiles on battens and rafters	30°	70°	17 $\frac{1}{2}$	15	46
i. Tiles and purlins	30°	70°	20	17	48

Common Rafters.

nominal width 2 in., spaced 1 ft. apart, 1 ft. 2 in. centres.

tion 1. A distributed load of 46 lb. per foot super, including wind. (Table II, k).
tion 2. A distributed load of 15 lb. per foot super, excluding wind (Table II, h), and a central load of 150 lb. on one rafter.
tion 3. Deflection $\frac{1}{4}$ in., with central load of 150 lb. on one rafter.

The formulae for the nominal depth to st each condition are summarised below:—

CONDITION 1.

Minimum nominal depth of rafter of span L when
had to size. Sawn. Wrought all over.
 L L
 $2 \cdot 23$ $2 \cdot 19 + \frac{L}{2}$ $2 \cdot 12 + \frac{L}{2}$. . . (9)

CONDITION 2.

L L
 $2 \cdot 17 + 14 \cdot L$ $2 \cdot 17 + 14 \cdot L$ $2 \cdot 17 + 14 \cdot L$. . . (10)

CONDITION 3.

L L
 $2 \cdot 26$ $2 \cdot 26 + \frac{L}{2}$ $2 \cdot 19 + \frac{L}{2}$. . .

Table IV. is based on the above. The nominal spans are determined by the condition where marked by an arisk, and in all other cases by the first.

TABLE IV. COMMON RAFTERS.
Spaced at 1-ft. 2-in. centres.

Nominal dimensions.	Maximum Span.			
	Finished to Size.	Sawn.	Wrought all Over.	
2 in. x 4 in.	4 ft. 11 in.	4 ft. 11 in.	4 ft. 11 in.	
3 in. x 4 in.	5 ft. 11 in.	5 ft. 7 in.	5 ft. 11 in.	
3 in. x 5 in.	7 ft. 7 in.	7 ft. 2 in.	7 ft. 7 in.	
4 in. x 4 in.	8 ft. 11 in.	8 ft. 7 in.	8 ft. 11 in.	
4 in. x 5 in.	10 ft. 11 in.	10 ft. 9 in.	10 ft. 11 in.	
4 in. x 6 in.	12 ft. 3 in.	11 ft. 11 in.	11 ft. 3 in.	
6 in. x 4 in.	14 ft. 3 in.	13 ft. 0 in.	12 ft. 4 in.	

Purlins.

t will be seen from Table II. that there three principal cases to be considered:—

- Lead or zinc flats.
- Light roofs of corrugated-iron or zinc.
- Slated or tiled roofs.

The slight differences in weight between coverings classified together are not of sufficient importance to require separate rules. With purlins the deflection canon may be omitted, since, in relation to comparatively large distance between the purlins, the deflection under the maximum es is too small to injuriously affect the covering.

a. Lead or Zinc Flats.

tion 1.—A distributed load of 33 lb. per foot super, including wind or snow. (Table II, c).
 bL^2 R^2 (11)

tion 2.—A distributed load of 13 lb. per foot super, excluding wind or snow (Table II, e), and a central load of 150 lb. on purlin.

$$bL^2 = \frac{R^2 + 2345 L}{10 \cdot 25} \dots (12)$$

hen BL is more than 30 ft. super. use equation (11), when less use equation (12).

b. Corrugated-Iron or Zinc Roofs.

tion 1.—A distributed load of 35 lb. per foot super, including wind. (Table II, c).

$$bL^2 = \frac{R^2}{3 \cdot 81} \dots (13)$$

tion 2.—A distributed load of 17 lb. per foot super, excluding wind (Table II, e), and a central load of 150 lb. on purlin.

$$bL^2 = \frac{R^2 + 375 L}{16 \cdot 67} \dots (14)$$

hen BL is more than 11 ft. super. use equation (13), when less use equation (14).

c. Slated or Tiled-Roofs.

tion 1.—A distributed load of 48 lb. per foot super, including wind. (Table II, c).

$$bL^2 = \frac{R^2}{2 \cdot 78} \dots (15)$$

tion 2.—A distributed load of 17 lb. per foot super, excluding wind (Table II, e), and a central load of 150 lb. on purlin.

$$bL^2 = \frac{R^2 + 17 \cdot 64 L}{7 \cdot 85} \dots (16)$$

hen BL is more than 9 ft. super. use equation but when less use equation (16).

COLOURING OF WOOD TO INCREASE ITS INDUSTRIAL VALUE.

H. WISCONSINUS has investigated the action of gases and vapours in the industrial colouring of various woods with the following interesting results. He finds that such improvement of the colour and of the artistic effects consequent thereupon is entirely distinct from those produced by mere "daubing" of the surface. Organic colouring matters dissolved in alcohol penetrate wood deepest, but are not the best colours; colours dissolved in water only penetrate a fraction of a millimetre below the surface of the wood in the direction of the length of the fibres, while turpentine and wax colours only affect the surface. In order to stain wood throughout its mass, apparatus similar to that used for impregnating wood with tar, etc., must be employed. Although tar gives a not unpleasant brown colour to wood, it is not a true colouring material. On the other hand, gases, and especially ammonia, have the power of rapidly producing the deepest colours in wood. Only small amounts of gases or vapours are required to colour the mass of the wood. The change of colour is really produced by the action of the gases on those unstable and easily decomposable constituents of the sap and woody substance, which are readily separated from the resistant cellulose fibres; tannins, and less resistant carbohydrates, such as sugars, gums, etc., are turned to a dark colour by alkalis, ammonia, and superheated steam, or are decomposed with the formation of brown "humus" bodies. Fibres are easily penetrated by gases and vapours, and the colouring effects are heightened by such factors as high temperature, light, moisture, oxidising agents, etc.

A characteristic of these processes is the throwing into bold relief of dull, mat, tones of colour, which produces the impression of colour from age, and, in fact, the object of these processes is to hasten those natural changes which occur in the ageing of wood. Cut wood turns yellow or brown naturally under the influence of the oxygen in the air, light, warmth, and moisture, and the coloration is also affected by dust (especially particles of iron), fungi, bacteria, and the action of the ultra-violet rays of light and heat. The side exposed to constant rain and snow becomes grey, the side exposed to the sun according to its age becomes more or less brown, and the freely-exposed ends of beams of very old houses become quite charred. The brown colour is a typical superficial colour, which is easily removed by moist ammonia fumes, and the surface then consists of pure white cellulose fibres, which give no lignin reactions. In low-lying country wood never acquires the exquisite brown observed in the Alpine district.

Wood exposed freely to air and protected from moisture acquires a superficial grey colour, probably formed by the action of traces of iron on the sap materials, and entirely distinct from the grey colour due to age which penetrates the interior of the wood. Among artificial processes of colouring wood the comparatively new process of "fuming" with ammonia has only been applied to woods rich in tannin materials in order to produce the greyish brown of old oak. The wooden articles are enclosed in a vessel filled with air and ammonia fumes for two or three days, and are coloured to a depth of from 2 mm. to 3 mm. = 0.78 in. to 1.18 in., which is much deeper than would be effected by liquid colours. In cases where tannin material must be added to the wood, a 5 to 10 per cent. hot solution of pyrogallol is used. Solutions of salts which can be coloured by ammonia or sulphuretted hydrogen are also employed, but only the surface is coloured by them. Even for oak, the "ammonia fuming" process is limited by the varying amounts of tannin substance present, by the fact that only made articles can be fumed if a uniform appearance is to be obtained, and by the want of resistance of the colour to water. The steaming of wood is chiefly used in order to bend the wood, but it also produces a uniform brown colour throughout the mass, and with certain kinds of wood colouring by a gas process can often be combined with drying by means of superheated steam.

Another artificial process of colouring wood

brown and imparting to it the appearance of age consists in embedding planks and blocks in trenches in the ground and covering them with loose earth or coal cinders. The loose soil is wetted with rain or by watering, and the draining off of the water maintains a moist atmosphere in the soil. The colouring is brought about by the soil gases—water vapour, air, ammonia, carbonic acid, and possibly hydrogen peroxide. Soils with a low content of humus are suitable, and the ammonia may be increased by adding ammonia-producing substances to them. The process is essentially different from the colouring of wood by laying it in mud, slime, or soil soaked with manure, as in the case of "sub-fossil" woods found in bogs.

REINFORCED CONCRETE FLOORING BUILT WITHOUT MOULDS.

Ws already have at hand in this country several methods of constructing reinforced concrete floors without the employment of the customary moulds and centring. All of these have been described and illustrated in our columns at different times.

The system to which we now direct attention is one employed at the University of Wisconsin, where it has been found practical, economical, and effective. It embodies an arrangement of narrow beams spaced about 3 ft. apart, centre to centre, and braced by transverse beams of equal dimensions spaced 6 ft. 6 in. apart, with girders of similar construction at intervals (see Fig. 1).

The beams are moulded in the spaces between a temporary staging formed of wooden boxes with sloping sides and ends as shown in Fig. 2, laid upon a system of supporting planks held in place by timber struts.

Concrete and reinforcement are placed in the intervals to form the beams, and the connecting floor slab is spread over the beams and the top of the boxes, this part being reinforced with wire netting and finished by a granolithic surface.

The reinforcement of the beams as represented in Fig. 3 consists of round bars enclosed in stirrups of U-form, several stirrups being bent from one rod to form a connected series. The bars are only used in tension, but are bent up over the supports in the case of joists and bridging joists, while in the girders straight bars are employed with short bars for contraflexure in the upper part near the supports. Calculations for the reinforcement were made by the Dean of the Engineering Department of the University.

Mr. Arthur Peabody, Supervising Architect to the University of Wisconsin, states that during the past two years spans of from 12 ft. to 26 ft. have been successfully moulded, and that some floors of 28 ft. span are being made this year. These necessitate beams measuring 8 in. wide at the bottom, 10 in. wide at the top, and 14 in. deep. The increased width of the beams at the top adds to the crushing resistance of the construction, and the narrower bottom where tension in the concrete is neglected is sufficient and economical.

The calculated strength of the floor is entirely in the beams, no account being taken of the slab, and none of the bridging joists. The value of these two elements is considerable, and we see no reason against taking them into account, as will certainly be done if the system comes to be developed commercially.

By providing enough boxes for one or two floors an entire building, and many other afterwards, can be constructed with a minimum expenditure for plant. If preferred, however, sufficient boxes can be made for all the floors of a given building, and the floor slabs formed after the whole of the beams have been moulded.

The intervals between the boxes can easily be varied to make the beams of any required width, and the depth can be increased by placing troughs on the supporting planks or by increasing the thickness of the floor slab.

As first made at the University, the timber boxes were of pine sheathed with yellow pine floor-boards carefully put together and finished smooth. The cost per box was about 10s. each, and the boxes were used fifteen times without a great percentage of loss. They were then covered with sheet-iron at a cost of about 6s. each, rendering them suitable for use fifteen times more.

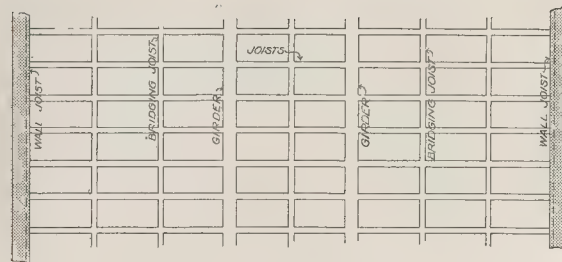


FIG. 1 PLAN

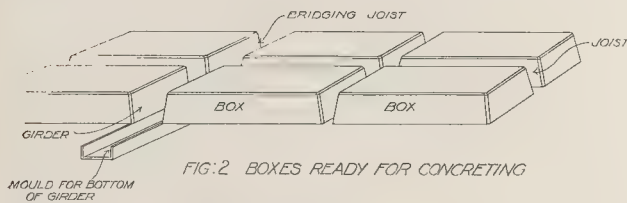


FIG. 2 BOXES READY FOR CONCRETING

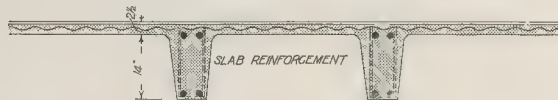


FIG. 3 SECTION OF COMPLETE FLOOR

Reinforced Concrete Flooring built without Moulds.

Experience shows that it is economical to sheath the boxes with sheet-iron in the first instance, thus saving the cost of finishing the wood smoothly, and the metal surface slips away from the concrete more readily than timber. Moreover it is free from the disadvantage of absorbing moisture from the wet concrete, and obviates swelling of the wood.

The life of the boxes depends very much on the treatment they receive. If adequately protected with sheet-iron along the lower edges as well as on top and on the sides and ends, there is no reason why they should not last for a long time.

In the subjoined table we give the cost of floor construction in the Mining Laboratory at the University of Wisconsin. The floors in question covered about 4,500 sq. ft., and the superimposed loading was 200 lb. per square foot.

	Per sq. ft.
Concrete (limestone aggregate)	5.27
Reinforcement	3.93
Timber for supports	3.30
Timber boxes, one-fifteenth original cost	0.36
Erecting supports and boxes	2.77
Placing reinforcement and concreting	2.22
Removing supports and boxes	0.55
Total cost	18.40

WROUGHT-IRON GATES, UFFINGTON CHURCH (p. 893).

THESE old gates form the entrance to the churchyard of Uffington, a picturesque little "stone and thatch" village about 2 miles from Stamford. They are beautifully "set" at the end of a long paved path, which, with its grass border, bushes, and overhanging trees, has the appearance almost of an avenue leading up to and culminated by the church, with its fine spire; the vista so obtained through the wrought ironwork is delightful.

As is often the case, a great deal of the more delicate work—leaves, etc.—has rusted off, but enough remains to restore the whole.

Unfortunately, nothing is known of the history of the gates, but it is possible that the lady and gentleman whose distinctly Georgian features are graven on the torus were the donors.

On the opposite side of the road a fine pair of modern gates and piers, echoing these in many respects, give an equally entrancing view of the beautifully-kept Hall gardens, their blaze of colour contrasting pleasingly with the cool green of the churchyard.

CONSTRUCTION NOTES.

Comparison of Retaining Wall Designs.

The important economy that can be effected by the adoption of reinforced concrete in place of masonry or mass concrete in the construction of retaining walls has been sufficiently illustrated by numerous examples described in our columns on various occasions. In the present note we compare the cost of three types of design, one a plain concrete wall with reinforcement in the footing and at the junction of the footing and wall proper, and the other two representing commonly adopted forms of construction.

All three walls are practically of the same overall dimensions and suitable for equal load conditions. For the purpose of showing the extent by which the sectional area of concrete

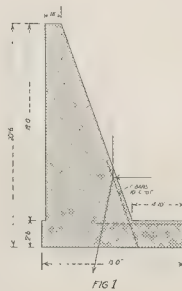


FIG. 1

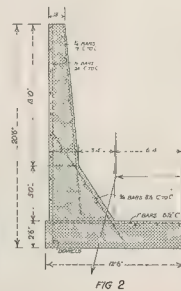


FIG. 2

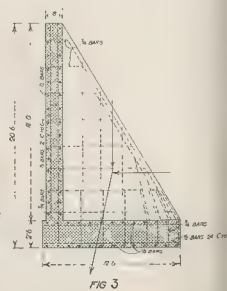


FIG. 3

COMPARISON OF REINFORCED CONCRETE RETAINING WALLS

may be reduced by the aid of efficient reinforcement from a given thickness at the top of the wall, the uniform dimension of 18 in. has been adopted in each case, but it should be pointed out that considerable further saving might easily be effected in the cross-sectional area of concrete.

The subjoined table gives the comparative cost per lineal foot of the three designs as represented in Figs. 1 to 3:—

Materials and Unit Cost (including labour).	Type of Design and Cost per Foot Run.		
	Fig. 1.	Fig. 2.	Fig. 3.
Concrete at 24s. per cu. yd.	£ s. d. 5 4 0	£ s. d. 3 10 9	£ s. d. 3 2 2
Steel bars at 14d. per lb.	0 4 3	0 15 5	0 15 9
Moulds at 5s. per sq. yd.	1 0 7	1 0 7	1 13 0
64 sq. yd.			
Total per foot run	6 8 10	5 6 9	5 9 11

As the quantities of material are given for each type the reader can substitute his own unit prices if desired, but these will not affect the comparison of cost.

Adhesion of Concrete and Steel.

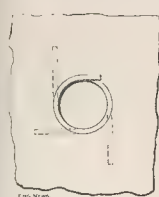
PROFESSOR BACH has recently made public the results of an investigation undertaken by him with the object of determining the resistance to longitudinal pulling-out of steel bars embedded in concrete for varied lengths of the surfaces in contact. Having pulled out bars of 0.79 in. diameter embedded in blocks of concrete for lengths ranging from 1.18 to 15.75 in., the author found that the axial adhesive resistance per square centimetre of surface in contact diminished uniformly as the length increased. For the dimensions of the bars examined Professor Bach found that the relation which exists between the adhesive resistance p per square centimetre, and the dimensions l = length and d = diameter of the bars tested can be thus represented by the exponential function:—

$$p = 160e - (0.2 + 0.4\sqrt{\frac{l}{d}})$$

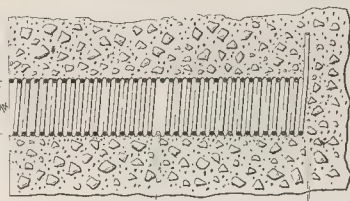
where e = the base of Napierian logarithms. This formula appears to be applicable to bars up to 20 in. long.

New Process for Creosoting Timber.

AT a demonstration of the Rüping system of timber preservation last month various kinds of wood in the form of poles, fencing, battens, boards, sleepers, and paving blocks were treated. After having been weighed and measured, the specimens were placed in a cylinder, subjected to the air-pressure of 50 lb. per square inch, and then the cylinder was filled with creosote, first under the same pressure and next under 80 lb. per square inch. After the timber had been taken out, the quantity of creosote absorbed was ascertained by weighing, and, various specimens having been cut across, it became evident that the oil had penetrated nearly to the centre. The process is said to be very economical, one special advantage being the cleanliness of the treated wood.



End Elevation.



Longitudinal Section

Bolt Socket.

(From Engineering News.)

Simple Bolt Socket for Concrete Work.

FOR securing bolts in concrete buildings and structures the device recently patented by Mr. David Craig, of Boston, U.S.A., is one that should be found very useful. As shown in the accompanying drawing, it consists of a coil of wire, the coils spaced so as to form the thread of an ordinary coach bolt, the ends of the coil turned out tangentially to form an anchorage. To place the socket in position, it is fitted on a screwed bolt, of the size to be used afterwards, passed through the hole of the mould, and embedded when concrete is poured in. The bolt is afterwards withdrawn, leaving a screwed socket. The device is quite suitable for attaching hangers of all sizes to concrete and reinforced concrete structures, and has been successfully employed in construction work on the Boston Elevated Railway.

REFERRING to the beams of 80 ft. span described in our issue of August 11 last, it is interesting to note that the sag of these members under their own dead weight and of the connecting roof slab averages only $\frac{1}{8}$ in., the maximum deflection in one beam being $\frac{3}{8}$ in. As these two measurements respond to $\frac{1}{16}$ and $\frac{3}{16}$ in., the span, respectively, they are clearly indicative of sound and good construction.

Effect of Lightning on Reinforced Concrete.

A WELL-KNOWN civil engineer in America has recently made public his personal experience of the behaviour of concrete under attack by lightning. He states that a reinforced concrete water-tank at his residence was struck a short time ago without causing injury, the only effect having been to vitrify the texture of the concrete in the neighbourhood of the point of impact.

Influence of Transport on Properties of Concrete.

A NOVEL industry lately originated in some German cities is the preparation and supply of ready-mixed mortar and concrete. These materials are prepared in special works transported thence to building works progress. There can be no doubt that the plan of mixing under expert supervision should be beneficial in itself; while, on the other hand, it is to be feared that the delay, inseparable from loading, transport, and unloading, may affect the setting of the mortar and concrete, and that the jolting of concrete on the way from the mixing works may cause segregation of the constituents. In order to obtain reliable data on the two points in question, tests have been conducted on a series of specimens of concrete, taken before and after transport. According to the results published by the tests, it appears that the

transport of concrete actually increased the strength of the material by about 15 per cent., the increase being more noticeable in cases where aggregate with sharp edges had been employed. We are reluctant to accept this conclusion for general guidance, and besides, it is highly probable that in ordinary practice delays would occur in delivery, presenting considerable risk of inferior work.

Cheaper Railways.

MR. C. REGINALD ENOCK, F.R.G.S., in a paper read before the Society of Engineers, argued that the capabilities of the ordinary steam railway do not keep pace with the requirements of the times; that there are too many accidents; that travelling is too slow; the cost of construction too heavy; that freight and passenger rates are too high; labour insufficiently paid, and dividends less than they should be. He pointed out that the mountainous regions of the globe are still undeveloped, due to heavy cost of railway construction. He stated that the heavy cost of English railways is largely due to land purchase. He considered that radical changes in design and construction are now called for, in the interests of safety, rapidity, and economy. He urged that national experiments should be carried out on a specially-equipped site, in order to give greater scope to inventors and to evolve improvements; and suggested that inquiry might be made into the possibility of a combination of railway and aeroplane.

Cost of Industrial Buildings.

A USEFUL comparison given in a paper contributed by Mr. J. P. H. Perry to the National Association of Cement Users (U.S.A.) relates to the cost of reinforced concrete, protected steel-frame, and "mill construction" factory buildings. The figures quoted were furnished by the tenders for buildings erected in various parts of the United States. Neglecting "mill construction," which finds no exact counterpart in this country, Mr. Perry's data show that the cost of reinforced concrete ranges from 2.8 to 13 per cent. less than that of fire-protected steel, the exterior walls being assumed to be of equal value.

The author justly urges, however, that initial outlay is not the only consideration, and that owners should also take into account the fixed annual charges, including interest, insurance, depreciation, the effects of vibration, and sanitation. Some saving in the first two items can probably be effected by reinforced concrete, and as the depreciation of the same material is not more than about 0.5 per cent. per annum, maintenance charges ought to be considerably reduced, while they would be vastly less than in buildings where steelwork is exposed to the air.

Freedom from vibration is one of the chief points of superiority characterising reinforced concrete as compared with steel-frame construction, and on this count Mr. Perry estimates

the saving in machinery repairs to be one well worth attention. Among hygienic advantages he places resistance to the attack of vermin, and increased facilities for the admission of light.

Taking all things into account, the author urges that it would pay owners to adopt reinforced concrete even if the initial cost of the building were higher than that of a protected steel structure, and that the advantages of reinforced concrete construction are still more pronounced when compared with buildings erected in accordance with ordinary methods. The question is one quite deserving inquiry.

Medieval Reinforced Concrete in Paris.

A STRANGE discovery lately made in the walls of the old palace of the Louvre shows that reinforced concrete was by no means unknown in Paris as far back as the XVIIth century, when the rebuilding of the Louvre was undertaken by that industrious builder, Francis I. The *Figaro* states that when executing works in connexion with the application of a modern lift the workmen employed found it necessary to cut through some of the old walls, which were apparently of dressed masonry. But, to the surprise of the contractors, it was found that the stone was nothing but the outer shell of construction largely composed of a kind of reinforced concrete. In view of the generally entertained belief that this is an essentially modern variety of structural material, the proof of its employment between 300 and 400 years ago is distinctly interesting. Our contemporary states that some one with archaeological tastes has taken the trouble to search the archives for records left by the architects of the epoch in question, with the result that no mention was found of anything but dressed stone for use in the walls. It seems, therefore, that the original contractors, with more wisdom than honesty, decided to make sure of reaping the benefit attending the adoption of reinforced concrete as a substitute for stone masonry.

Partition Walls States Consul-General at Berlin in Berlin.

FROM a report by the United States Consul-General at Berlin it appears that most of the inner partition walls used in buildings in that city consist of a heavy iron wire screen, on either side of which are layers of coke-ash mortar. The walls are apt to get out of plumb, and will not hold nails satisfactorily, and, as in making the mortar cattle hair, jute, and hemp refuse are used, it sometimes disintegrates, causing the wall to crumble and sections to fall out. A good metal partition wall should, therefore, says the Consul-General, find a market in Germany, provided that it was not too thick and that the cost was not very much greater than that of the ordinary wall. Economy of space is looked for by the German builder. The authorities require that all outside and supporting walls shall have a thickness of at least 36 cm. (14.173 in.), and hence partition walls are generally limited in thickness to 10 cm. (3.937 in.), as they are not required to support great weights. The coke-ash walls cost about 3.20 marks per square metre (about 2s. 8d. per square yard), but builders would pay more for a wall of satisfactory construction.—*The Engineer*.

Danger of Iron Bolts and Ties in Masonry.

IN most cases where iron has been leaded into stone cracks have sooner or later appeared owing to increased bulk of the metal by oxidation. The only way of obviating such cracks is to make a perfectly tight joint between the two metals. As lead does not in any way adhere to iron tightness can only be secured by efficient caulking. This can only be accomplished where (a) the section of the iron bar is circular, (b) the hole in the stone is of the same form, (c) iron fixing wedges are eliminated, (d) there are no projections on the surface of the bar, and (e) the lead is sufficiently ductile.



THE BUILDING TRADE.

THE APPOINTMENT OF AN ARBITRATOR.

OF the building cases which from time to time come before the courts for decision a considerable number involve the consideration of an arbitration clause. For good or ill, parties to these agreements depend upon arbitration for the settlement of disputes, and while the appointment of an arbitrator is often made in the contract itself, it often becomes necessary for the builder to consider who had best arbitrate for him. It may be, of course, that all questions in dispute are left to the architect, but it is more usual to provide in the agreement that disputes shall be determined by arbitration in accordance with the terms of the Arbitration Act.

While an unprejudiced person should always be chosen, the parties are at liberty to choose whom they will, or to name some indefinite person, such as a gentleman nominated by the President of the Institute of British Architects. The mere fact that the arbitrator had some bias at the time of his election would not, if the fact were known to both parties, be sufficient to avoid his appointment. Where, however, it turns out that, unknown to one or both of the parties, he submit to be bound by his decision, there are some circumstances in the situation of the arbitrator which tend to produce a bias in his mind, he is an improper person to act as an arbitrator. Even in the common case where either party appoints an arbitrator, who are empowered to appoint an umpire in case they cannot agree, the arbitrators so appointed should be without bias. In a case decided in 1845 the appointment of the surveyor of a railway company to act as their arbitrator in a dispute was held to be objectionable, and in a much later case the court threatened to revoke a submission where an insurance company appointed their own manager to act as their arbitrator.

In a Scotch case, a firm of contractors who had undertaken to build a public building agreed with the Town Council that a particular gentleman should act as arbitrator in case of dispute. This gentleman subsequently became elected "Dean of Guild," and thereby *ex officio* a Town Councillor. It was held that this disqualified him from acting as arbitrator (*Edinburgh Magistrates v. Lowrie*, 1903, 5 F. 711).

The case of *Belcher v. Roedean School*, 1901, 85 L. T. 469, shows that the court will be reluctant to revoke a submission to arbitration on the ground of interest. In that case a contract provided that all disputes and differences arising on a building contract were referred to the decision of the architect appointed by the building owners. The builders issued a writ against the architect for damages for fraud and misrepresentation, and took out a summons to revoke the submission to arbitration. The architect declined to admit the charges made against him. It was held that an application to revoke the submission was one to be granted with great caution, and that the submission ought not to be revoked. If the clause providing for arbitration mentions no other mode of reference, it is to a single arbitrator; but the parties can agree that there shall be two arbitrators, and if so the two arbitrators may appoint an umpire within the period during which they have the power to make an award. In the case (c) where the submission provides for a reference to a single arbitrator, and all the parties do not, after differences have arisen, concur in the appointment of an arbitrator; or (b) if an appointed arbitrator refuses to act, or is incapable of acting, or dies, and the submission does not show that it was intended that the vacancy should not be supplied, and the parties do not supply the vacancy, any party may serve the other parties with a written notice to appoint an arbitrator. If the appointment is not made within the proper time, the court may make the appointment. A reference, as we have seen, is frequently made to two arbitrators, one to be appointed by each party. Provision is made by the

Arbitration Act for the failure of one party to make the appointment. If one party to the arbitration were to refuse to make any appointment, the arbitrator selected by the other might sit as sole arbitrator and decide the matters in dispute, subject, however, to a power reserved to the court to set aside any appointment by the other. If the person chosen to decide matters in dispute refuses to act or dies, it is competent for one party to call upon the other to appoint a new arbitrator. If he refuse to do this, the court may then make the appointment.

It is well to make a very distinct arrangement about fees before the arbitrator enters upon his duties. To estimate the exact amount payable is, of course, a difficult task, inasmuch as there is no telling for how long the hearing will last. The "retainer" and a daily "refresher" can, however, be fixed without any difficulty. It is to be borne in mind that an arbitrator is entitled to keep back his award until his fees are paid, and this is a method of compulsion not infrequently resorted to. The usual practice, therefore, is for the arbitrator to notify the parties the amount of his charges, and to refuse to deliver the award or communicate its contents until they are paid. This obviates all disputes, and the practice has received repeated judicial sanction.

Sometimes a taxing officer is called upon to decide under sect. 15 (3) of the Arbitration Act, 1889, as to the fees of an arbitrator. It has been decided that upon such a taxation the taxing officer is not entitled, if the evidence all goes to show that, in the opinion of persons in the same profession the charges made by the arbitrator are for a person in his position fair, to disregard that evidence and to reduce the remuneration to such an amount as is in his opinion fair (*Mason, Ltd., v. Lovatt*, 1907, 23 T. L. R. 486).

In that case a quantity surveyor had acted as arbitrator in a dispute between a firm of plumbers and a builder. The reference lasted for twenty-two days, and the arbitrator was subsequently employed for thirteen days in considering the case. He also took the advice of solicitor and counsel on certain points of law. He charged 527l. 10s., which included 107l. 10s. a day for thirty-five days, and 110l. 6s. for fees paid for legal advice. The District Registrar, disregarding the evidence of surveyors in good position, held that 51. 5s. a day was sufficient, and reduced the above amount by 283l. 0s. 6d. The Court of Appeal set this judgment aside. Dealing with the surveyor's remuneration, Lord Justice Moulton said:—"The evidence is all one way that the price charged by him was fair for a person belonging to his profession and occupying the position which he occupied in that profession. The District Registrar was not entitled to set that evidence aside. The true standard, in my opinion, of what should be paid in such a case is what a fair-minded man in the position of the referee would have required if a bargain had been made freely beforehand. In this case there is no ground for supposing the referee has charged more than would have been required by a fair-minded man in a free bargain."

One word may be added as to the relative merits of legal and lay arbitrators. There is a very natural feeling rooted in the mind of the business community that a technical man should decide a technical case. It may be granted that an architect will require less instruction upon the technical aspect of a building dispute than most lawyers. But as the architect chosen as arbitrator accustomed to hear evidence; is he able to distinguish the true from the false; wholly unbiassed by any pet theory of building? These are matters to be thought of before the lay arbitrator is hastily chosen. There are many gentlemen in both branches of the legal profession who have had considerable experience in building cases, whose claims should not be lightly rejected. Perhaps the most satisfactory, although most costly, of all tribunals hitherto devised is that composed of two laymen sitting as arbitrators representing each party, presided over by a legal umpire selected by the two arbitrators.

EXTRAORDINARY TRAFFIC.

The case of *Billerica Rural District Council v. Poplar Guardians and Keeling* which we noted the *Builder*, April 14, has been carried to the Court of Appeal, which has approved the judgment of the Court below. We referred to the case in our issue of last week, p. 370.

Under the Highways and Locomotives Act, 1878-1893, it is provided that where, by the certificate of their surveyor, it appears "having regard to the average expense of repairing highways in the neighbourhood," extraordinary expenses have been incurred in repairing a highway by reason of extraordinary traffic, the authority may recover "the amount of such expenses as may be proved to the satisfaction of the Court to have been incurred by such authority by reason of the damage arising from such weight of traffic." In the case in question the Court found that there had been some damage necessitating an expense greater than usual but that as the rates had not thereby been increased the action failed. The Court of Appeal have approved this finding, but present the decision is not fully reported. It would seem, however, that the case must have turned upon the absence of any proof that "extraordinary expenses had been incurred," and not, as appeared in the Court below, solely on the fact that the highway rate had not been increased. It is obvious that this fact alone can form no criterion, for the highway authority, by economy in methods of maintenance, or by expenses incurred in previous years, might, in fact, reduce the highway rate whilst yet including an item for extraordinary traffic. We shall await the full report of the decision with interest.

MASTER PAINTERS' CONVENTION: THE EIGHTEENTH ANNUAL DINNER AT DERBY.

The annual dinner in connexion with the Convention of the National Association of Master House Painters and Decorators of England and Wales was held at Derby on September 27. The President, Mr. Fred Grundy, presided, and he was supported by several ex-Presidents, while among the visitors were the Deputy-Mayor, Dr. H. Arnold-Bemrose; the Town Clerk, Mr. G. Trevelyan Lee; the Principal of the Technical College, Mr. F. W. Shurlock, and others.

The Deputy-Mayor, in responding to the toast of "The Town and Trade of Derby," remarked that "they had the primeval man who lived in caverns at a time when there were no houses to decorate. That he was of an artistic temperament was shown by his finding in a cavern at Cresswell of the first art memorial in the shape of the head of a horse engraved on the antlers of a deer. Paint was evidently used at that time—composition of charcoal, oxide, of manganese, and some sort of grease, which showed that the arts of the painter did not begin when man commenced to live in houses."

In submitting the toast of "Technical Education," Mr. G. H. Morton expressed the opinion that, considering the vast amount of money spent on education, the results were nothing like what they should be.

Mr. F. W. Shurlock (Principal of the Technical College), in responding, said it was the first time that the toast had been given in the town, and that the Master Painters had adopted it was very encouraging. The subject was of vital importance, and there was no doubt that it was not receiving the consideration it deserved in this country. There were different conceptions as to the usefulness of the work undertaken. His conception of technical education was, the highest training in the principles of sciences and art given to the ablest and best of the young people in their industries. He congratulated the Association on the interest they had displayed in educational matters. He only wished that

associations of employers would follow as an example, and particularly, trades, for in these days they could not hope to go back to the old arrangements when in guilds masters and apprentices were lated one with another. They had, unfortunately, got beyond the parting of the ways in that particular, and the masters and would probably live to remain separate in the future. Signs were not wanting that Association was filling up the breach. A feature of the Exhibition, which could like to refer to, was the work done by the apprentices, and the work done under Fletcher reflected great credit on the Master Art School. With regard to the Art School, he was pleased to say they had fifteen painter apprentices from the Art Association. They were instructed in principles of drawing, and so far as this it was healthy and useful. There was a reason why they should not have decorated the College; if a reasonable number of pupils came forward, such a class, no doubt, could be started immediately. The chief toast of the evening, "The Royal Association of Master Painters of England and Wales," was proposed by Mr. Torpe, who said he had watched the movement of the English Association for a considerable time, and he could say they had avowed to lift the craft to a genuine standard and had tried to make it, not merely a craft, but that it should deserve first and last afterwards the respect of the public whom they catered. It had been a growing conviction with him that of all the associations of England was the most business-like. It set itself out to do great things, and variously succeeded, and those things were very pertinent to its functions in life. On the question of technical education one great lack had been made. While every attention had been given to the class generally, bright boy who showed every promise had not received the particular encouragement merited. If more attention had been paid to particularly bright boys they might become leaders of a great movement in the future. Responding, the Chairman said that the exhibition, starting in a small way, had in it something to be proud of. It was good wine, it needed no bush, and both a social and business point of view was worthy of its position in the painting.

GENERAL BUILDING NEWS.

NEW CHURCH AT GRANGETOWN.
The Lord Bishop of Durham has consecrated the new church of St. John, Grangetown, Sunderland. The church is built of Lincolnshire bricks, with walls of Dumfriesshire stone. The late Mr. C. G. Fowler, F.S.A., was the architect, Mr. W. H. Wood, F.R.I.B.A., has supervised the work. Messrs. J. & T. Parker, Sunderland, are the builders.

CHURCH HALL, WATERLOO.
The church hall is being erected in connexion with the Church of St. John, Waterloo, Liverpool, from designs by Messrs. F. B. Hobbs & O. D. Black, F.F.R.I.B.A. The cost will be about 3,600.

NEW SCHOOL FOR NORWICH.
The Corporation has been decided to build a new elementary school in the suburb of Lakenham, Norwich. Such an institution has been needed some time, and a good opportunity is offered to obtain an important building.

SCHOOLS AT WOOD GREEN.
The Corporation has proposed to build new elementary schools at Lordship-lane, Wood Green. The plans have been approved by the Board of Education.

SECONDARY SCHOOLS, HARROGATE.
These schools were opened by the Bishop of York on September 28. The original building has been remodelled and an extension costing 8,500, has been made. The buildings consist of four floors, and are to be used as a secondary school during the day, and a musical and art school in the evenings. In the basement are placed the following rooms: laundry, manual room, boys' and girls' dressing-rooms with kitchen, scullery, and stores. The ground floor are an assembly-room, a library, 34 ft., six classrooms, masters' and resses' rooms, headmaster's room, and a boys' and girls' cloakroom and lavatory. On the first floor are four classrooms, physics

laboratory, chemical laboratory with balance-room and stores and lecture-room, large commercial classroom, room for needlework and dressmaking, large cookery room and masters' room. On the second floor is arranged the art department, consisting of antique-room, modelling-room, elementary art-room, painting-room, painters' and decorators' room, room for wood carving, besides masters' room and boys' and girls' cloakroom and lavatories. In an adjoining building, connected by covered corridors, is a gymnasium, 50 ft. by 36 ft., with changing-rooms for each sex. The whole of the rooms are well lighted, and the heating and ventilation is of the best type. Playgrounds for each sex are provided with covered sheds and bicycle rooms. The total cost of the complete block has been about 13,000. The architects for the extension are Messrs. W. J. Morley & Son, of Bradford, who were also responsible for the original building.

BRADWELL, BUCKS.

At a meeting of school managers and County Council representatives, held at Bradwell, it was decided to petition the Aylesbury Education Committee to provide a new boys' school at a cost of 6,000.

ROMFORD BOYS' SCHOOL.

A secondary school for boys is to be built at Romford. Building is going on rapidly in the district, and the need for special accommodation is felt.

BRISTOL BAPTIST COLLEGE.

It is expected that tenders will be invited shortly for the construction in Tyndall's Park of the Bristol Baptist College, the cost of which is estimated to be about 16,000. Messrs. Oatley & Lawrence are the architects.

SCIENCE DEPARTMENT, SHEFFIELD UNIVERSITY.

The Drapers' Company have given 15,000, towards the cost of an Applied Science Department in connexion with the Sheffield University. The architects of the new building are Messrs. Gibbs, Flockton, & Teather, Sheffield.

NEW INSTITUTE AT HAROLD, BEDFORDSHIRE.

The new institute has been erected on a site adjoining the present institute, and comprises a large hall, committee-room, kitchen, etc. The architect for the work was Mr. M. Clayton, and the contract was carried out by Messrs. Clayton & Sons.

CHURCH INSTITUTE, SOUTH SHIELDS.

This building, which has been formally opened in Hardwick-street, South Shields, is part of a scheme to provide for the religious, educational, and social needs of the parish. Mr. J. H. Morton, F.R.I.B.A., was the architect, and Messrs. Sheriff & Sons, South Shields, were the contractors.

WESTON-SUPER-MARE.

Mr. E. K. North, M.Inst.C.E., an Inspector of the Local Government Board, has held an inquiry in connexion with the proposed purchase by the Urban Council of land at Weston-super-Mare, the object being the provision of public abattoirs, cattle market, depot, refuse destructor, and workmen's dwellings.

OUTFALL SEWERAGE SCHEME.

The Rhymney Valley authorities have decided to seek Parliamentary powers to construct a sea outfall sewerage scheme to cost something over 200,000. The 50,000, allowed for the construction of a trunk sewer from the north of the valley down the Tyn-y-coed is included in the estimate.

HULL TOWN HALL.

The second portion of the new Town Hall at Hull having been completed, and the Council having decided to take down the front portion to rebuild it in a style more in keeping with the remainder, tenders have been considered by the Property Committee of the Corporation. The architects (Messrs. Russell & Co.) estimated the cost of the work at 25,000, and the tender by Messrs. Quibell, Son, & Greenwood, which was accepted, was for 25,378.

PUMPING STATION, MEOPHAM.

The tender of Messrs. W. H. Archer & Son, of Gravesend, has been accepted by the Gravesend and Milton Waterworks Company for the erection of a new pumping station at Walnut's Wood, Meopham. The cost of the work will be about 6,000.

POST OFFICE, LLANELLY.

A new post office has been erected at Llanelli by H.M. Office of Works. It is a three-story building, with a frontage of 113 ft.

SANATORIUM EXTENSION, EXETER.

The Exeter City Council propose to spend 15,500, in extensions to the Sanatorium. If possible, the work will be done during the winter, so that employment may be given to mechanics and artisans.

PARISH HALLS, PORT-GLASGOW.

Mr. Allan F. Duncan, of Glasgow, is the architect of the new parish church halls to be built in the Port-Glasgow Bay Area, and Messrs. Peter McBride & Co., Port-Glasgow, are the contractors.

BURSLER TOWN HALL.

At the formal opening of the new Town Hall at Burslem, designed by Mr. S. B. Russell, F.R.I.B.A., the Mayor (Major Cecil Wedgwood, D.S.O.) had something to say on the subject of present-day decorations. He thought his audience would agree with him when he said that the new Town Hall was a very handsome building. The taste which had been displayed was excellent, for the decoration was of a reticent character. In present-day decoration they were apt to run very much to detail of ornament, and were too apt to forget the value of good proportion and simplicity. He was always laughed at by his friends because he admired the entrance to Euston Station. What appealed to him about the entrance was the simplicity of that enormous arch. He thought that in carrying out the decoration of their own building the idea had been to avoid plastering it all over with ornament. It was very often the case that over-ornamentation was used to hide faults, and also to smother bad proportions. It was the most difficult thing in the world to obtain simplicity and good proportion, but he did think that in that building they had a stately structure. Mr. R. O. B. North, clerk of works, in the absence of the architect, described the building.

TRADE NEWS.

The use of the "Ceresit" waterproofing medium for concrete, stone, and brick buildings was successfully demonstrated last year at the Brussels Exhibition, where the highest award was secured. The "Grand Prix" of the Turin Exhibition has been awarded to "Ceresit."

The Yale & Towne Company, 6, City-road, E.C., have a "Window Display" advertisement leaflet, which may be had on application by ironmongers.

The Union Infirmary, Sevenoaks, is being supplied with Shorland's warm-air ventilating patent Manchester grates by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

THE BUILDING TRADE IN MANCHESTER.

It is expected that a favourable reply will be sent by the Manchester, Salford, and District Building Trades Employers' Association to the Labourers' Union on the question of increased wages and revised working hours for labourers.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Church hall (1,800l.); Mr. George Kenshole, architect, Hongoed; Mr. D. Tysul Davies, builder, Treconan.

Aberdeen.—Extensions to premises of Northern Co-operative Society (4,000l.). Messrs. Wilsons & Walker, architects, 1 and 1A, Union-street, Aberdeen.

Adwick-le-Street.—Police station; Messrs. Denholm & Co., builders, Black-lane, Westgate, Wakefield.

Annfield Plain (Durham).—Proposed sixty houses; Mr. T. J. Trowsdale, Surveyor, Annfield Plain Urban District Council.

Backbarrow.—Cottages for the Leven Valley Co-operative Society.

Barnsley.—Enlargement of Holyrood Roman Catholic School (400 extra places); the Trustees.

Blaimachfoldbach (near Fort William).—School and teachers' room (3,000l.); Mr. James G. Falconer, architect, 4, Cameron-place, Fort William.

Bodmin.—Children's home; Mr. J. Pethybridge, Clerk, Board of Guardians, Bodmin, Cornwall.

Bradley.—Fifty-two houses, Bradley Lodge, for the Bradley Lodge Estate, Ltd.

Bridlington.—Workhouse laundry (500l.); Mr. T. Martindale, builder, St. George's-avenue, Bridlington.

Brighouse.—Police station and court (3,000l.); Mr. T. G. Carpenter, County Hall, Wakefield.

Bromley.—Various buildings (9,000l.); Mr. E. Haselhurst, Clerk, Board of Guardians, Bromley.

Brunsford.—Thirty-six houses, Lodge Farm (11,135l.); Mr. G. H. Pickles, Surveyor, Burnley Town Council.

Burton-on-Trent.—Receiving home; architect, care of Mr. G. F. Chamberlain, Clerk, Board of Guardians, Burton-on-Trent.

* See also our list of Competitions, Contracts, etc., on another page.

Butterknowle.—School; Mr. W. Rushworth, architect, Shire Hall, Durham; Mr. T. Manners, builder, Peel-street, Bishop Auckland.

Capelulo.—School (3,000l.); Mr. R. L. Jones, architect, Market Place, Carnarvon. Castle Combe.—Additions to school (2,000l.); Mr. J. G. Powell, County Surveyor, Trowbridge.

Catchgate (Durham).—Houses; Mr. T. J. Trowsdale, Surveyor, Annfield Plain Urban District Council. Christchurch (Hants).—Laundry at work house (1,800l.); architect, care of Mr. Alan Druitt, Clerk, Board of Guardians, Christchurch.

Claydon.—Laying-out of Alderdale Hall Estate (about 2,000 houses); Alderdale Estate Company, Ltd.

Conisborough.—Swimming baths; Surveyor, Conisborough Parish Council.

Coventry.—Motor works for Triumph Cycle Company, Priory-street; Mr. F. R. I. Meakin, Warwick-row, Coventry.

Crocket Ford.—School (3,000l.); Messrs. Barber & Bowie, architects, 53, Buccleugh-street, Dumfries.

Dalmarnock.—Congregational church (2,000l.); Mr. J. C. McKeller, Davidson, & Gunn, 45, West Nile-street, Glasgow.

Darlington.—School (3,000l.); Mr. G. Winter, Borough Surveyor, Town Hall, Darlington.

Darnley (Renfrewshire).—Additions to hospital (2,000l.); Messrs. McWhannel, Rogerson, & Reid, architects, 55, West Regent-street, Glasgow.

Devizes.—Cottage hospital; Mr. A. J. Randall, architect, Vine-street, Devizes.

Doncaster.—Sixty houses, Warnworth, and fifty houses, Carr House and Enfield (about 40,000l.); Mr. F. O. Kirkby, Surveyor, Doncaster Town Council.

Douglas (Isle of Man).—Villa Marina (15,025l.); Mr. D. Rhodes, builder, Skinnerlane, Leeds.

Droylsden.—Development of Alderdale Estate (about 1,000 houses); Mr. G. W. Laughton, Alderdale Hall, Droylsden.

Dumbarton.—Lodging house, Rink-street (3,000l.); Mr. James Bell, architect, 8, Merry-street, Motherwell.

Dundrum.—Schools (2,000l.); Mr. R. Wallace, St. Mary's-street, Kirkcudbright.

Eccles.—The following plans have been passed:—Office building at Barton Hall Engine Works, Gorton-street, Peel Green, for Messrs. L. Gardner & Sons, Ltd. Alterations to Nos. 294 and 296, Liverpool-road, Patricroft, for Messrs. W. H. Robinson & Sons.

Edinburgh.—Four houses, Mayfield-road (4,000l.); Messrs. Menzies & Cockburn, architects, 33, York-place, Edinburgh.

Ellensmere Port.—School (5,925l.); Messrs. Dryland & Preston, builders, Littleborough.

Elworth (near Sandbach).—Wesleyan church (4,600l.); Messrs. A. Price & Sons, Sandbach.

Erith.—Club and institute, Valley-road. Trustees, Erith Men's Club and Institute.

Erith. Extension at works for the Callander Cable and Construction Company, Ltd.

Exeter.—Laundry at workhouse; Mr. R. M. Challice, architect, Bedford-circus, Exeter.

Falkirk.—Conversion of Olympia Skating Rink into electric theatre; The Theatre and Entertainment Development Syndicate, Kingway, W.C.

Frome (Somersetshire).—Children's home, Whitewell-road; Mr. W. R. Kent, Clerk, Board of Guardians, Frome.

Glasgow. Extension to Calton Public School (2,500l.); Mr. David Maben, M.W. School Board Offices, 16, Royal Exchange-square, Glasgow. Extensions to Victoria Bakery (2,100l.) for Messrs. McFarlane, Lang, & Co.; Messrs. James Monro & Son, architects, 28, Bath street, Glasgow. Foundry, Finnieston-street (5,550l.); Mr. Charles Henry, 35, Minerva-street, Glasgow. Additions to buildings, Kinning Park (2,200l.), also shops and houses (4,000l.); Messrs. Bruce & Hay, architects, 261, West George-street, Glasgow.

Grangemouth.—Proposed creosote works (4,000l.) for Messrs. W. Christie & Co., The Docks, Grangemouth.

Greenside.—Additions to school (1,850l.); Mr. Gavin Paterson, architect, 6, Cadzow-street, Hamilton.

Hampreston.—School (3,000l.); Mr. J. Fletcher, Shire Hall, Dorchester.

Hanley.—Sunday school, Trinity-street (1,350l.); Mr. H. W. Shaw, architect, Hanley; Messrs. George Ellis & Sons, builders, High-street, Hanley.

Harrow.—Pavilion; Mr. J. P. Bennetts, Surveyor, Harrow Urban District Council.

Haslemere.—Fifty houses; Mr. A. M. Brownrigg, Haslemere, and Mr. Raymond Unwin, Vetchwood, joint architects.

Houghton-le-Spring.—Drill hall (3,000l.); Mr. H. Chapman, 38, Grainger-street, Newcastle.

Howdon House (Lincs).—Garage, etc. (1,250l.); Mr. J. Dixon-Spinn, architect, 19, Hanover-square, W.

Hursley (near Winchester).—Eight cottages, Hursley Estate, near Winchester (2,250l.); Messrs. J. Nicholl & Co., builders, Southampton.

Hurst.—Sunday school, Ormonde-street; Architect, care of the Primitive Methodist Trustees.

Hyde.—Alterations and extensions to St. George's Church Endowed School; the Managers.

Kilmarnock.—Additions to infirmary (10,000l.); Messrs. John Burnett & Son, architects, 234, St. Vincent-street, Glasgow.

King's Lynn.—Works (20,000l.) for Messrs. Orton & Spooner, Engineers, Burton-on-Trent.

Kirkintilloch.—Church (14,000l.); Mr. George Bell, 212, St. Vincent-street, Glasgow.

Leicester.—School (6,000l.); Mr. T. Groves, Secretary, Education Committee, Leicester Town Council.

Lickey (Worcestershire).—Sanatorium (7,000l.); Messrs. Martin & Martin, architects, Colmore-row, Birmingham; Messrs. T. Lowe & Son, builders, Cambridge-street, Birmingham.

Limbury (Bedfordshire).—School (4,000l.); Messrs. Gotch & Saunders, architects, Market-street, Kettering.

Little Bytham (Lincs).—Workmen's houses; Mr. T. Lake, Surveyor, Bourne Rural District Council.

Little Mill.—School (2,000l.); Mr. W. Bowie, architect, 239, High street, Ayr.

Liverpool.—Artisans' dwellings, Frank-street and Northumberland-street; Messrs. Brown & Packhouse, builders, 54-62, Chatham-street, Liverpool.

Llandudno.—School (6,000l.); Mr. R. L. Jones, Market-place, Carnarvon.

Longside.—Schools (4,000l.); Mr. G. T. Anderson, 1, Crown-terrace, Aberdeen.

Lurgan.—Seventy houses (24,100l.); Surveyor, Lurgan Rural District Council.

Melincroft.—Siloh Mission Hall; Mr. J. Cook Rees, architect, Church-place, Neath; Messrs. Waring, Cole, & Waring, builders, Charles-street, Neath.

Merthyr.—Administrative block, etc. (600l.); Mr. J. C. Rees, architect, St. Mary's-chambers, Neath.

Mitchelstown.—Twelve houses (1,584l.); Mr. J. O'Mahoney, builder, care of the Surveyor, Mitchelstown Rural District Council.

New Luckenham (Norwich).—School (1,200l.); Mr. C. Brown, architect, Cathedral Precincts, Norwich.

Newcastle-on-Tyne. Buildings, corner of Heaton Park-road and Shields-road, for Messrs. F. Bevan & Co. Warehouse and offices (5,000l.); Messrs. Watson & Scott, architects, 48, Dean street, Newcastle.

Newcastle-on-Tyne. Block of offices, Northumberland-street; Mr. H. Gibson, architect, Camden-street, North Shields. Additions to workhouse (18,000l.); Mr. E. Bowman, architect, Westgate-road, Newcastle.

Newton Abbott.—Public swimming baths; Messrs. Rowell, Son, & Locke, architects, Newton Abbott.

Northampton.—Proposed improvements to school, Campbell-square; the Managers. The following plans have been passed:—Six houses, Sandingham-road and Thrusley-road, for Mr. W. C. Throssell; additions to No. 114, Oxford-street, for Mr. J. Holland; additions to factory, Free-school street, for Messrs. J. & G. Rae; eleven houses, Newington-road, and thirty-five houses, Kingsthorpe-grove and St. David's-road, for Mr. A. J. Chown; ten houses, Raymond-road, for Mr. J. W. Gossage; six houses, Southampton-road, and two shops, Wellingborough-road, for Messrs. A. R. & W. School, St. Giles School, and Stimpson-avenue School, for Mr. S. Beattie, Secretary, Education Committee, Northampton Town Council.

Northampton. Additions to premises, Vernon terrace, ten houses, Alton-street, for Mr. J. D. Pullen & Sons; steam bakery, Barry road, for the Northampton Co-operative Society, Ltd.

North Croft.—Church and suite of halls on site of Old Abercrombie Foundry; Mr. T. G. Abercrombie, architect, 1, County-place, Paisley.

Norwich.—Gallery at Museum (1,464l.); Messrs. Gill & Son, builders, Norwich.

Oundle.—Extensions to isolation hospital; Mr. R. E. Wilson, Surveyor, Oundle Rural District Council.

Paisley.—Additions to works, Violet-street, for Messrs. Edie Bros. & Co., Ltd.

Penwortham.—Institute (1,000l.); Vicar, St. Leonard's Church, Institute (700l.); Vicar, St. Mary's Church.

Perry Barr (near Birmingham).—School (6,000l.); Mr. Hutchings, Education Offices, Stafford.

Plymouth.—Additions to Throat and Ear Hospital (2,000l.); Messrs. Thornley & Rooks, architects, The Crescent, Plymouth. Proposed conversion of Beaumont House into swimming baths; Mr. J. Paton, Borough Surveyor, Plymouth Town Council.

Pontefract.—Block of dwellings (5,000l.); Mr. W. J. Tennant, architect, Ropergate-chambers, Pontefract.

Port Glasgow.—Parish church halls, Port Glasgow Bay Area (2,000l.); Mr. A. F. Duncan, architect, Glasgow; Messrs. Peter McBride & Co., builders, Chapel-lane, Port Glasgow.

Portobello.—Five houses, Brunstone-road (4,000l.); Mr. E. Colvert, 16, North-street, Dund-street, Edinburgh.

Preston.—Grammar school (16,500l.); Messrs. Woolfall & Eccles, architects, Liverpool; Messrs. Thomas Croft & Sons, builders, Green Bank Stone Yard, Victoria-street, Preston.

Reading.—Catholic school, Abbey Ruins, Rev. Canon Scoles, The Presbytery, Basingstoke.

Ribchester.—Alterations to workhouse (5,100l.); Mr. J. Clarke, Clerk, Board of Guardians, Preston.

Rosemount.—Construction of swimming bath at school (3,900l.); Aberdeen School Board.

Scunthorpe (Lincs).—Mission hall (3,000l.); Messrs. George Baines & Co., architects, 5, Clement's Inn, Strand, W.C.

Shankhill (Co. Dublin).—Carnegie Library (356l.); Mr. George Bower, builder, Ballybrack.

Southampton.—Proposed school, Shirley (1,200 places); Mr. J. Cruickshank, Secretary, Education Committee, Southampton Town Council. The following plans have been passed:—Mission hall, King-street, for Messrs. Mitchell, Son, & Gutteridge, warehouse, Brinton's-terrace, for Mr. W. A. Kneller; five houses, Empress, Oumdruman, and Handel-roads, for Mr. F. W. Young; four houses, Nile-road, for Messrs. Lemon & Bizard; six houses, Amphill-road, for Mackintosh Bros.; additions, Normanhurst, Hulse-road, for Mr. W. B. Hill; office, stores, etc., Belvedere-road, for Messrs. Weston & Burnett. The following plans have been lodged:—Ten houses, Westbourne-crescent, for Mr. J. Smith; alterations to building adjoining the Bristol Hotel, Terminus-terrace, for Messrs. Emanuel & Emanuel; four houses, St. James'-road, for Mr. J. V. Blake; alterations to Philharmonie Hall, Above Bar-street, for Messrs. Goodwyn & Sons.

Southend.—Parish hall; Trustees, Roman Catholic Church, Southchurch-road, Southend.

South Moor.—Parochial hall and church in situate (1,800l.); Mr. E. Dyson, builder, Pelton.

South Shields.—Schools, Stanhope-road (3,500l.); Mr. Page, architect, King-street, South Shields; Mr. J. L. Miller, builder, North Shields.

St. Andrews (Fifehire).—Drill hall for Burgh School (2,000l.); Mr. David Henry, architect, Church-square, St. Andrews.

Stanley.—Club; Architect, care of the Secretary, Excelsior Club, Greenland.

St. Mary Gray.—Extensions at mills for Messrs. Joyson.

Taunton.—Additions to school (5,800l.); Mr. W. Roberts, Hammett street, Taunton.

Messrs. W. Potter & Sons, builders, Row Barton, Taunton.

Ton Law.—Alterations to foundry for Messrs. Bond.

Tranent.—School, Ormiston-road (5,000l.); Mr. Peter Whitecross, architect, Wine-street, Devizes.

Troon.—Villa, Bentinok Drive (1,700l.) for Dr. Sican, Troon.

Twickenham.—A plan has been passed for a picture theatre, Richmond-road, for The Estate Land and Houses, Ltd., 83, Westcott Park, Hornsey, N.

Weymouth. School (3,000l.); Mr. J. A. McGregor, architect, King-street, Castle Douglas.

Uddington.—Laundry, manual workshop etc. (2,250l.), for the Bothwell School Board.

Wallsend.—Two cemetery churches (5,000l.); Mr. E. Cratney, architect, Station-road, Wallsend. Institute (2,000l.); Messrs. White & Stephenson, architects, 69, Grey-street, Newcastle.

Wareham.—Drill hall and offices; Messrs. Fletcher, Son, & Brett, The Chantry, Wimborne.

Warrington.—A plan has been passed for Messrs. Rylands Bros., Ltd., for new building, Algernon street.

Waterfoot (Rawtenstall).—Extensions to Glove Works for the Newchurch Boot Company.

Wem.—Alterations and extensions to the Conservative Club; architect, care of the Secretary.

Wyke Colliery (Warwick).—School (5,600l.); Mr. J. Willmott, 6, Waterloo-road, Birmingham.

Wylan.—Miners' hall and institute; Messrs. W. Dixon & Son, Biggmarket, Newcastle.

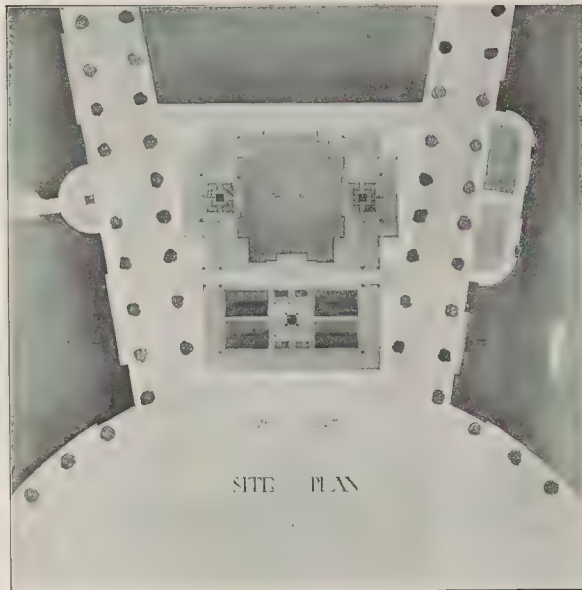
Yaxley.—Parish hall; Surveyor, Yaxley Parish Council.

York. Children's home at workhouse (1,500l.); Mr. J. H. Morton, architect, North Eastern Bank-chambers, South Shields.

ARCHITECTS AND GARDENS.

We quote the following from an article in *Field*:—"When the architect is asked to limit an architectural enormity—to compare, say, the tower of a Highland granite castle with the timbers of Shropshire or olean brick—then he is plainly right in saying to build what he is asked to build. And so in lesser difficulties; he may very easily bring his client to reason by pointing out that his proposition is comparable with others more easily understood by the layman with wearing a straw hat with a frock coat, perhaps. And his client, if he would think matter out, might remember that the architect's reputation has to stand or fall in connection with the house, as his fellow-architects will see it when it is built. He ought, when he has selected his architect, to give him as free a hand as he would give the artist whom he commissioned to paint a portrait or the sculptor who has undertaken a statue. The architect who means to devote the remainder of a lifetime to thinking out the design of a house it is just as important to know that he can work free and unfettered as it would be to a poet or essayist engaged in composition. The architect can no more readily embody the conception of another brain than his own design than the poet or prose writer can undertake to employ a particular metaphor about a particular thing in a particular context."

So much for the building of the house. But the planning of the garden is a little different. The man who has set out on the client business of watching an architect build a house may possibly one fine day find himself in an unexpected and rather awkward position. He may have delivered the whole of the building of the house into the architect's hands, and may have consoled himself with the reflection that his own turn will come with the planning of the garden (matter to which, perhaps, he has given some study), and he may then possibly discover that the architect has taken it for granted that the designing of the garden will go with the designing of the house. He may find this as disquieting as it is at first surprising; but if once more he thinks the matter out he will see that—up to a point—the architect is right on his side. A house of a certain design clearly ought to be set in certain surroundings. In most cases it would be difficult to imagine that the setting of the house could not be bettered by the experience of an architect, while in some cases his help may be even imperative. In the designing of flights of steps, for instance, or the arrangement of terraces demanding stonework or brick building, the amateur can only trust to his architect to save him from incongruity or worse. But the question then arises. Is there not a point to which the architect may fairly be confined? Apart from any question of expense, which in the designing of elaborate terraces, paving, or flights of steps may be very considerable, may not the client justly decide that there is a point at which the garden ceases to be the architect's property, so to speak, and becomes the property of its owner? If there is not, he may well ask. Will the architect pay the bills for the planting of the house and the wages of the staff needed to keep up the garden?



A.A. Silver Medal: Design for a Concert Hall. Site Plan.

Somewhere in that question, in reality, lies the answer to the problem. Apart from any considerations of etiquette, or of a desire on the part of the client to give the artistic expression of his architect free play, the first point to be settled is how much the client is prepared to pay to get the kind of setting which the architect desires. That is a simple matter which can be decided at once by the length of purse-strings, and need not wait any more arguing. But the next point is equally important, and it is one which the architect for his part will do well to realise. It is that, whatever be the initial design of the garden, it will eventually be the expression of the taste of its owner, and not of the architect. If, for instance, the owner of the garden is interested in rock plants, or in flowering shrubs, or in growing delicate and difficult plants rather than in obtaining masses of colour, it is no good to give him some other kind of gardening to do, because he will not do it. If he dislikes to have a wide expanse of lawn, with the perpetual necessity of mowing, it is no use designing him hundreds of square yards of grass. If he thinks bedding out the worst possible use to which to put flowers and gardeners, it is no use for the architect to surround the house with formal beds. They will revert; everything will revert to the type of mind of the owner. So that the architect, if he will realise it, should compose his setting, keeping always in mind

the temperament of the gardener with whom he has to deal. As regards expense, it is his business, and a business which he well understands, to see what can best be done with the amount of money at his disposal; he sets the house, then, as simply or as elaborately as he chooses or is able to set it. But outside the immediate setting he will realise that he cannot go. He may think, and he may be right in thinking, that he knows better than the owner of the garden what the garden should be; but since the garden will become in any case what its owner wishes, he will do well not to attempt to touch what he knows he cannot be sure of holding. E. P."

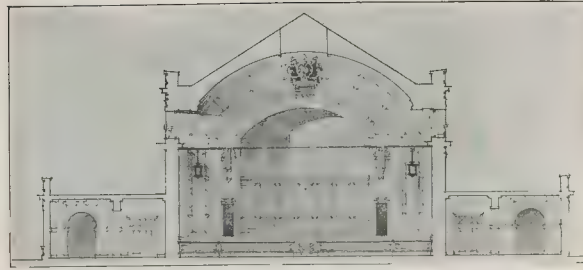
A.A. SILVER MEDAL.

REFERENCE has been made already to the competitive designs for the Silver Medal of the Architectural Association (see issue June 23, p. 778). We now supplement our criticism with illustrations of the drawings by Mr. Wyville Home, which obtained the award. In carrying out the design for the concert hall the author has availed himself of the large site at his disposal, and has assumed that the whole work would be erected to the memory of a national hero. The treatment accordingly is large in scale, the whole site being raised on terraces carried out in a broad and severe manner. The memorial

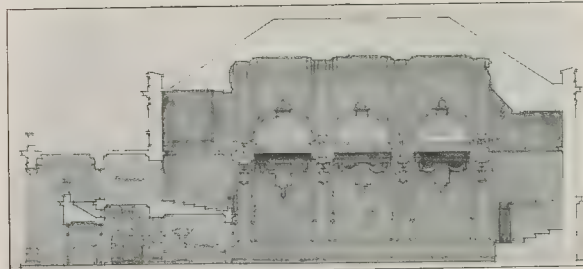


A.A. Silver Medal: "Design for a Concert Hall in a County Town." Elevation to Place.

By Mr. G. Wyville Home.



Concert Hall: Cross Section.



Concert Hall: Longitudinal Section.

stands axially in front of the hall, while fountains flank it on either side, and a note of colour is introduced by the grass lawns expanded round these features. The hall itself has been treated in a severe academic manner, dignity being striven after by the long, low lines of the building and by the restraint and concentration of ornament and shadow.

LONDON COUNCILS.

Bermondsey.—The tender of Tarmac, Ltd., Wolverhampton, has been accepted at 842l. 10s. for the laying of a 4 ft. macadam roadway in Galleywall-road.

Bethnal Green.—A plan submitted by Messrs. Andrew & Peasgood, on behalf of Messrs. S. Clarke & Co., Ltd., for the creation of an addition to the latter's factory on the north side of Chisenhale-road, has been approved, as has also an application from Mr. L. T. Dunn for consent to the drainage of the proposed vestry at St. Peter's Church, St. Peter-street.

Edmonton.—At the last meeting of the Board of Guardians the committee appointed to report on the question of a female relieving officer was instructed also to report as to the advisability of providing a home in the country for the Board's patients who needed convalescent treatment.

Fulham.—A communication is to be sent to the London County Council drawing attention to the projected sale of the Sullivan Estate, and asking them to consider the desirability of forming a town planning scheme in connexion with the development of the estate. The Council have decided to raise no objection to the line of frontage of three one-story shops proposed to be erected on a portion of the forecourt of 624, Fulham-road, by Mr. J. Codrington, of 17, Doneraile-street, Fulham.

Greenwich.—Instructions have been given to the Borough Engineer to proceed with the work of relaying the woodpaving from the eastern corner of King William-street along the northern side of Nelson-street at an estimated cost of 147l.

Hanwell.—At the last meeting the Urban District Council the Chairman moved "that application be made to the Local Government Board for authority to prepare a town-planning scheme in respect of certain land within the Urban District." This was seconded by Councillor Poole, and approved of. Application is to be made to the Local Government Board for a loan of 600l. for carrying out the work of extending Springfield-road northwards and then westwards to opposite the centre of Conolly-road.

Hendon.—The Surveyor of the Rural District Council has been instructed to put in

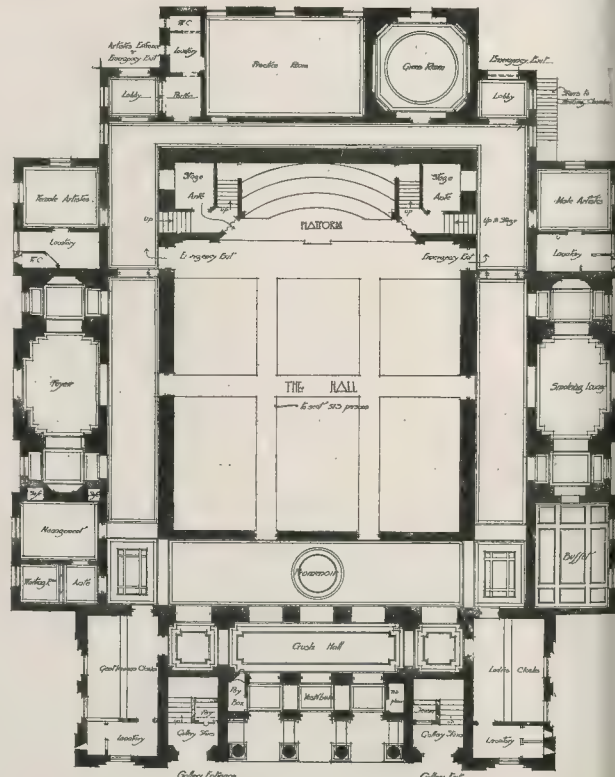
hand the work of piping the ditch and forming a footpath in the portion of Marsh-lane Stanmore. Mr. A. W. Elkington, on behalf of Mr. T. Elkington, has lodged plans for eight houses in Canons-lane, Pinner.

Hendon and Uxworth.—The tender of Mr. T. Chapman, at 862l., has been accepted in lieu of that of Messrs. Packer & Co., at 424l., to construct a sewer in Jersey-road. The following plans have been passed:—Messrs. Hamilton, twenty-one houses and shops, Thornbury-road, and six houses, Jersey-road, Osterley; Mr. B. Potter, alterations to the Eagle Whitton-road, Hounslow; George the Fourth, Staines-road, Hounslow; Traveller's Friend Bath-road, Hounslow; and the Queen's Head, Heston. Messrs. Wainey, Coombe, Road, 1 Co., Ltd., alterations to the County Arms Hounslow, and the Duke of York, Hounslow Messrs. Nowell Parr & Kates, public house Kingsley-road, Hounslow; also offices, Northumberland Wharf, Brentford End. Mr. G. S. Valentin, alterations to Electric Empire, High street, Hounslow. Mr. Frank J. Fisher, alterations at the Rose and Crown, Heston North Star, North Hyde; and Hope and Anchor, Sutton. The following plans have been lodged: Messrs. Smees & Houchin, chapel, Staines-road, Hounslow. Messrs. Ashby's Brewery, Ltd., alterations to Jolly Waggoners, Dockwell: North Star, Whitton-road, Hounslow; and Royal Albion, Hibernia-road, Hounslow. Mr. H. R. Peake, Hounslow Hospital, Staines-road, Hounslow.

Hornsey.—The following plans have been passed:—Mr. W. T. Walker, Finsbury square alterations and additions to "Kildermoria", Bishopswood-road, Highgate; Mr. Alex. Perie, six houses, Springcroft-avenue, Muswell Hill; Mr. Henry East, Hornsey, nine houses, Redston-road; Hornsey. Plans for twelve houses in St. James's-lane, Muswell Hill, have been lodged by Messrs. Herbert & Co.

Ilford.—A plan has been passed for Messrs. Higgins & Thomerson, for Mr. W. H. Knox for fourteen houses, Betchworth-road.

Lambeth.—The Public Health Committee, in December, 1905, approved plans for the con-



GROUND PLAN

A.A. Silver Medal: "Design for a Concert Hall in a County Town."

Awarded to Mr. G. Wyville House.

tion of an underground convenience at Winton-gate, and accepted the tender of Mrs. Spencer, Santo, & Co., to carry out work at a cost of 2,595l. After this had been done it was found necessary to obtain formal approval of the London County Council to the construction of this convenience, the site formed part of Kennington Park, as the London County Council refused to do so, as they insisted on two free water-closets each sex being provided instead of one, the latter supplied by the Council. As no agreement could be come to it was decided to construct the convenience under a site opposite "The Horns" Tavern. The Committee now met that, owing to the strong representations which had been made to them as to the necessity for an underground convenience at Winton-gate, they had instructed the Engineer to interview the officers of the London County Council and explain fully to them the reasons for the Borough Council's inability to agree with the County Council's plan of providing two free water-closets each sex. As a result the Parks and Open Spaces Committee of the County Council stated that they would depart from their usual practice and would be prepared to recommend the Borough Council to grant permission to the Borough Council to construct the proposed convenience subject to protective conditions. Under these circumstances the Borough Council agreed to proceed with the work and to the fresh tenders.

The Council have decided to grant use of the Town Hall at a charge of 1s. 6d. to Mr. D. Freeman, 438, Lea Bridge-road, Leyton, for the purpose of holding a concert in aid of the funds for building the Welsh Institute in connexion with the Town Parish Church. The following plans have been passed:—Mr. H. G. Needham, seven seats, Drayton-road; Mr. E. F. Selby, five houses, Hainault-road; Mr. A. E. Elger, three houses, Colchester-road; Mr. C. E. Read, addition to nurses' home, Chertsey-road; Mr. A. Radcliffe, five houses, Bald-road. A plan has been lodged by Mrs. J. Greenwood, Ltd., for additions and alterations to the "Hare and Hounds" public-house, Lea Bridge-road.

London.—The Finance Committee of the City of London Guardians report having considered plans and specifications of the Architect A. E. Pridmore and the Consulting Engineer (Mr. E. R. Dolly) for adapting the old Bow premises as a Metropolitan Poor Relief Hospital, at an estimated cost of 11,150l. 10s. for the Architect's scheme, and 3,000l. (the Engineer's scheme), and had come to a conclusion that application should be made to the Local Government Board for consent to the scheme, inviting tenders from selected firms instead of advertising for sealed tenders. It was also decided to enter into contracts (1) Mr. E. R. Dolly, to supervise the engineering scheme at a fee of 250 guineas, extras of any kind to be paid, and (2) with A. E. Pridmore, to supervise the building work at a fee of five per cent. on the certified amount of work done on completion of the scheme, and to pay him the sum of guineas for plans and schemes submitted not carried out.

London.—It is proposed to carry out repairs to the works in the borough during the latter ending December 31 next, at an approximate cost of 3,525l. A plan has been lodged for Messrs. Humphreys, Ltd., for a hall 6, East India Dock-road.

Walthamstow.—The tender of Messrs. Galbraith & Co., Ltd., Camberwell Green, S.E., has been accepted at 310l. for providing and laying a pottery floor over the pond of the first-class swimming-bath at the Hoxton Baths.

Southwark.—The tender of Messrs. Jennings & Co., Ltd., at 2,240l. has been accepted for carrying out the second section of Avenue-road, the carrying out of improvement works in Avenue-lane the tender of Messrs. W. & C. Nichol, at 2,350l., has been accepted. Plans submitted by the Surveyor have been approved making up the following private streets:—Avenue-lane, Bowes Park; Burford-gardens, Messrs Green; and Elm Park-road, Winch Hill; as have also plans for making up the unmade and unopened section of Elm-gardens. The following plans have been passed:—Messrs. Edmonsons, Ltd., eight seats, Arundel and Hoppers roads, Winch Hill; Messrs. W. A. Goring, twenty-two houses, Fox-lane, and Bourne-hill, Messrs Green; Mr. W. C. Jones, alterations to the lodge of the Skippers' houses, Green-lane, Palmers Green; Mr. C. Hill, nine houses, Oakthorpe-road, Messrs Green; Mr. W. J. Ward, five houses, Green-lane, Palmers Green.

Walthamstow.—The Hospital Committee have accepted the tender of Messrs. C. Mott on, Ltd., Staines, at 368l., for roadmaking. *Electricity*—Electricity mains are to be added in Buckle-street, Artichoke-hill, Under-street, and Sly-street.

Walthamstow.—Plans, specifications, etc., have been approved for making up part of Evesham-avenue, and notices are to be served upon the owners of premises in such streets to carry out the work. The Engineer submitted a plan for making up a portion of Brestenham-road at an approximate cost of 600l., and it has been decided to instruct the Surveyor to carry out the work, upon the Law Land Building Department, Ltd., depositing with the Council the estimated cost of the work, any difference between the estimated and the actual cost to be paid by, or refunded to, the owners. The Surveyor has further been instructed to lay Trinidad asphalt macadam in parts of High-street and Wood-street. Plans submitted by the Engineer have been approved for the laying out of the Salisbury Hall Estate. The following plans have been passed:—Mr. J. Dunn, 112 houses, Elphinstone-road; Mr. A. G. Barton, warehouse and workshop, Hale End-road; Mr. T. H. Gaskin, thirty-five houses, Oak Hill-gardens; Messrs. Carter, Paterson, & Co., Ltd., alterations to premises, Wood-street; Mr. J. E. Ashby, laboratory, Blackhorse-lane; Messrs. F. Boreham, Son, & Gladding, theatre, St. James-street; Messrs. Hoare & Wheeler, church, Selwyn-avenue; The Stratford Co-operative Society, branch, dairy and depot, Hoe-street. Plans have been lodged as follows:—Mr. W. T. Streather, twelve houses, Chingford-road; Mr. T. Baker, six shops, The Broadway, Winchester-road; Messrs. E. Hawkins & Co., Ltd., theatre, Wood-street.

Wandsworth.—The following plans have been passed:—Mr. J. J. Taylor, garage and offices at Streatham-hill; Mr. H. S. Lee, additions to bottled beer stores, Ram Brewery, High-street; Messrs. Rowley Bros., erection of tramway sheds, Streatham-hill; Messrs. W. H. Lordon & Son, re-erection of Railway Bell-beehouse, Mitcham-road, Tooting.

Watford.—At the last meeting of the Rural District Council, plans submitted by the Surveyor were approved for an extension of the sewer at Nash Mills for some 800 ft. at an estimated cost of 157l. Plans have been lodged by Mrs. Ackerman for three houses at Chorleywood.

OBITUARY.

Mr. W. W. Wroth.

The death, on September 26, is announced of Mr. Warwick William Wroth, F.S.A., Senior Assistant Keeper in the Department of Coins and Medals, British Museum. Mr. Wroth was a son of the late Rev. W. R. Wroth, Vicar of St. Philip's, Clerkenwell. In 1903-6 he brought out catalogues of the Greek coins and of the Imperial Byzantine coins in the national collection. He contributed a large number of articles to the "Dictionary of National Biography," including the two supplements, from the commencement of that undertaking more than twenty-five years ago, and with the assistance of his brother, Mr. E. A. Wroth, he published in 1896 a valuable work, entitled "London Pleasure Grounds," that embodies the results of painstaking research in many neglected or forgotten sources of information.

Mr. R. Morton, M.Inst.C.E.

The late Mr. Robert Morton, a native of Fife, was educated in Scotland as an engineer, and became manager of the London Gas Company's works at Nine Elms; he held that post until the amalgamation in 1883 with the Gas Light and Coke Company. He was a director of the South Suburban Gas and other companies, and for a long period of the South Metropolitan Gas Company, of which he was afterwards Chairman, succeeding Sir George Livesey, with whose schemes for the men's co-partnership and the abolition of Sunday labour in gasworks he was closely associated.

FOREIGN AND COLONIAL.

Rand Art Gallery.

So far as can be gathered, the trouble over the building of Johannesburg's Art Gallery is by no means ended. The matter will come before the Johannesburg Town Council again at no distant date, and the debate it is said will be extremely interesting. Some months ago a big controversy waged around the question whether Mr. Lutyens, the eminent English architect, should design the building, or whether there should be open competition among the architects of South Africa. The Council decided to entrust the work to Mr. Lutyens. Prior to this the sum of 20,000l. had been voted for the erection of the gallery, and a site in Joubert Park was agreed upon. The design of Mr. Lutyens has now been submitted to the Council, and it has been stated that if adopted, and the buildings carried out in stone, the cost will be considerably in excess of the sum sanctioned by the Council, and will, it is estimated, be at least 75,000l.

Fireproof Building, Russia (Poland).

The following information is from the report by H.M. Consul at Warsaw (Mr. C. Clive Bayley) on the trade of Poland and Grodno in 1910, which will shortly be issued:—

The houses built for the occupation of the richer classes are all on the flat system, while those for the poorer classes are similar to the British model dwellings, only perhaps a little more ornate. All buildings are supervised by a large committee of engineers and architects appointed by the municipality, and generally the construction is strong and good. Fireproof buildings are the fashion, and all fireproof materials are in demand. Reinforced concrete floors, staircases, and partitions are being slowly adopted, but at present hollow bricks are principally used for floors and partitions. The external finish of the houses is much less ornate than formerly, but the internal fittings—door handles, hinges, locks, window fittings, etc.—are much superior to those previously used, and consequently should attract the attention of the British manufacturer.

Emigration to Canada.

It is getting too late in the season for emigrants to start now, and those who go should be prepared to keep themselves during the winter if necessary. The building strike at Vancouver, British Columbia, is settled.

Emigration to Australia.

In Sydney and suburbs the building and iron trades have been fairly well employed, brick-makers being especially busy. The ironworkers at Lithgow have been on strike. In Victoria there has been plenty of work for mechanics, such as builders, carpenters, bricklayers, ironworkers, and boiler-makers. Work of nearly all kinds is plentiful in South Australia, and there is a good demand for bricklayers, masons, cabinet makers, carpenters, plasterers, plumbers, and ironworkers. In Queensland there is plenty of employment for most classes of labour, such as men in the building trades, plumbers, fitters, etc. But the same time there have been some labour troubles, the gasworkers at Brisbane and some railway navvies in the north having struck work. In Western Australia there is a good opening for carpenters and plumbers. Tasmania shows little demand for more mechanics or labourers.

PATENTS.

APPLICATIONS PUBLISHED.*

- 21,855 of 1910.—John Barron: Traps for sinks, lavatory basins, baths, and the like.
- 26,407 of 1910.—William Ernest Wyatt Millington: Traps for discharging liquids.
- 26,763 of 1910.—Cornelius George Nobbs and George Nobbs, Junr.: Apparatus for humidifying, purifying, or disinfecting the atmosphere of rooms and other enclosed spaces.
- 27,045 of 1910.—John Eyre Russell: Cooking ranges.
- 27,130 of 1910.—John Marion Rauhoff: Manufacture of cement and concrete products.
- 4,151 of 1911.—George Gallop: Closet seats and pans.
- 5,608 of 1911.—Henri Gobert and Paul Meyer: Method of heating rooms, and apparatus therefor.
- 6,055 of 1911.—Wilhelm Becker, Jean Rosenberg, and Heinrich Rosenberg: Siphon traps for waste pipes.
- 6,379 of 1911.—John Baptist Murphy: Apparatus for supporting window sashes and the like, specially suitable for windows in doors of railway carriages.
- 10,450 of 1911.—Louis Lege: Sea-action flushing apparatus for water-closets.
- 10,610 of 1911.—Martin Sachs, Hans Pohlmann, and Paul Frank: Method of treating the surface of plaster or of a mass made from a mixture of granular material and a binding medium.
- 13,107 of 1911.—Horace Christman: Water-supply systems.
- 13,674 of 1911.—Karl Fuss: Stench traps for sinks, wall-troughs, and the like.
- 17,401 of 1911.—Friedrich George Wangelin: Urinals.

SELECTED PATENTS.

10,256 of 1910.—Edwin Dransfield and William Rigby, of the firm of Rigby & Mellor: Shaft tops and ventilators.

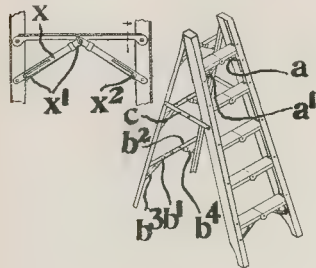
This relates to shaft-tops and ventilators, which are constructed so that the foul air is conducted into an upper chamber and is induced out to the atmosphere in a downward direction. In the shaft-top shown, foul air passes from the chamber *a* to the upper chamber *b* by way of short vertical tubes *c*, and is induced out of the aperture *d* on to the flat roof of the lower chamber by the wind blowing in the space between the chamber.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

A similar construction is adopted in the ridge-roof ventilator shown, the draught in ducts *a* arranged on the roof induces the foul air out of the upper chamber *b* through apertures *d*.

10,778 of 1910.—Flora Williams Smith: Ladders.

This relates to folding ladders having the steps in two sections pivoted together and to channel-section ladder sides, and consists in providing struts pivoted to the ladder sides and to the steps. The struts *a*, *a'*, for the top and bottom steps each consist of two parts *x*, *x'*, pivoted respectively to the step and ladder side, one part being slotted, and the other being provided with a stud *x''*, which slides in and engages a notch at the end of the slot. The ladder may be provided with back legs of angle section to form a step-ladder, the back legs being connected together by pivoted divided straps *b*, *b'*, secured against collapse by pivoted struts *b''*, *b'''*, constructed similarly to the struts *a*, *a'*. The spread of the step-ladder is limited by stays *C*, which may be

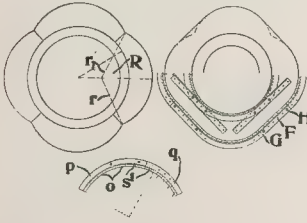


10,778 of 1910.

extensible or consist of two parts hinged together and pivoted to the ladder and back legs.

11,167 of 1910.—Nicolai Frederik Mohl: Moulding concrete chimneys, etc.

This relates to reinforced concrete chimneys, columns, towers, or masts, which are formed tapering and with a non-circular section, by moulds consisting of four segments, which are either cylindrical or cylindrical sections, combined with straight portions, the radius *r* of the cylindrical portions being in all cases less than the radius *R* of a circumscribing cylinder. Each segment of the mould consists of ring portions *p*, *q*, of angle-iron slidably adjustable on each other, and carrying boards *o* and *s'* respectively. The boards *s'* are removed one at a time as the mould is raised, the mould



11,167 of 1910.

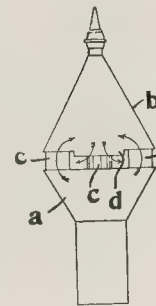
becoming circular at the top of the chimney. In the other mould the removable boards are carried by the straight portions *G*, *H*, which are allowed to project as the mould is diminished in size. Internal moulds, when such are used, may be made similarly to the external moulds, or constructed of wood, the mould being diminished in size by sawing off the straight portions. The mould segments are secured together by binding-wires or hinges.

11,228 of 1910.—William Herbst: Floors.

This relates to floors of the type described in Specification No. 10,215/09, wherein the ceiling slabs *c* are supported by the joists instead of by the intermediate cross-pieces *b*,



11,228 of 1910.



10,256 of 1910.

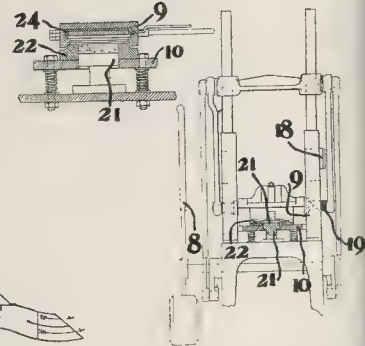
and the joists between the ceiling slabs are situated under the cross-pieces. The slabs *c* rest on the flanges of the joists, or are suspended therefrom by metal bars, and secured by a layer of concrete.

11,237 of 1910.—André Weill: Moulding tiles.

This relates to means for inverting the mould as it is moved towards or from the moulding-table in apparatus for moulding vitreous ceramic facing-tiles, in which the upper surface of the fluid mass forms the face of the tile. This is effected by means of a rack 18 on the machine frame, and a toothed section 19 on the hinged mould 9. The fluid mass is placed on a die 21 surrounded by a frame 22, carried by a spring-supported moulding-table 10, and on operating a lever 8, the hinged mould 9, carrying a plate 24 for forming the face of the tile, is turned over by the engagement of the section 19 and rack 18, and is forced down into contact with the frame 22. The frame 22 is thereby depressed, and the die 21 remaining stationary, the fluid mass is forced into the mould 9 when the moulding is effected. The mould 9 is raised, and on reaching the end of its stroke is again inverted by the engagement of the section 19 and rack 18.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.	
September 16.—By HANCOCK & SONS. Dulce, Cornwall. The Manor of Lanwornick Estate, 654 a. 0 r. 34 p., f.	£12,730
By ELWORTHY & SON. Elm, Cambs.—White House Farm, 217 a. 3 r. 5 p., f.	9,400
Manor lands, 39 a. 2 r. 23 p., f.	1,415
September 19.—By MORRIS, MARSHALL, & POOLE. Westbury, Salop. Meadow land, 56 acres, f.	2,860
September 20. By FRANK LYD & SONS. Poynton, Cheshire.—Poynton Towers and 200 acres, f.	14,439
September 21. By HANCOCK & SONS. Tywardreath, Cornwall.—Mount Bennett Farm, 34 a. 3 r. 23 p., f.	1,650
Meadow land, 7 acres, f.	750
Counters Field, 2 a. 1 r. 23 p., f.	180
By MILLAR, SON, & CO. Cold Aston, Glos.—Three farms, 1,061 acres, f.	14,500
Hawling, Glos.—Slade Barn Farm, 138 acres, f.	1,350
Compton Abade, Glos.—Hill Farm, 169 a. 2 r. 38 p., f.	1,500
September 22.—By HARRY BALL. Bedford.—15, Park-rd., f.	165
37 and 39, Howard-av., f.	800
62, The Grove, f.	700
34, Shakespear-rd., f.	790
39, London-rd., f.	290
September 25. By EBBERT OWERS. Hampstead, 48, Belsize-pk., ut. 40 yrs., r. r. 23.	800
By FRED VAILLEY & SON. Wood Green. 15 and 17, Nightingale-rd., ut. 70 yrs., r. r. 9, w. r. 65. 16s.	180
By WOOD & CO. Wootton, Northants.—Eight houses and two plots, f.	1,105
September 26.—By H. & E. L. COPE. Chatham, Kent.—Snodhurst and New Forested Farms, 510 a. 1 r. 34 p., f.	6,500
18, Manor-rd., f., r. r. 50.	750
Manor-rd., Elm Cottage, f.	3,375
Cooling, Kent. Childs Farm, 85 a. 0 r. 28 p., f.	7,460
By W. M. STICKNEY & SONS. Dunswell, Yorks.—Two farms, 152 acres, f.	7,460
September 27.—By GILLIAT & SONS. Llanwrin, Montgry.—Freehold farms, 545 acres	3,440



11,237 of 1910.

By N. EASTON & SON. Goxhill, Lincs.—Freehold farm, 37 acres,	23,675
By CRANSWICK & CRANSWICK. Bridlington, Yorks.—Grange Farm, 159 acres, f. Grass and arable, 112 a. 2 r. 14 p., f.	7,300
By KNIGHT, FRANK, & BUTLEY. South Hindley, Yorks.—Hodroyd Estate, 880 acres, f.	19,000
By BAXTER, PATER, & LEPPER. Beckenham, Kent.—10, Westfield rd., ut. 91 yrs., g. r. 91, p.	31
By DONALDSON & SONS. Enfield. 167, Chase-side (off-license), ut. 28½ yrs., g. r. 101, y. r. 501	4
Dalston.—35, Broke-rd., ut. 33 yrs., g. r. 41, e. r. 321.	1
By DYER, SON, & HILTON. Blackheath.—32, Kidbrook Park-rd., ut. 53 yrs., g. r. 71, p.	18,000
Brookley.—52, Manor-rd., l.g. r. 71. 10s., ut. 49 yrs., g. r. 11.	1
September 28.—By SHAW & J. BARRETT. Battersea.—165, Battersea Park-rd. (s.), ut. 51 yrs., g. r. 81, y. r. 451.	4
3, Devereux-rd., ut. 79 yrs., g. r. 101, e. r. 451.	1
By JOHN H. BUTLER. Rotherhithe.—161, Abbeyfield-rd., ut. 43 yrs., g. r. 11, y. r. 351.	2
35, Plough-rd., l.g. r. 61, ut. 40 yrs., g. r. nil.	1
Woking.—Pool-rd., Weymouth Cottages, f., ut. 911.	1
Melrose Cottages and Poultry Farm, 1½ acres, f.	1
By FISHER, STANHOPE, & CO. Totterham.—39 and 61, Ferndale-rd., ut. 56 yrs., g. r. 101, w. r. 67. 12s.	1
By NEWBORN & SHEPHERDS. Islington.—St. Peter-st., fig. rents 241, reversion in 34 years.	1
By SRIMMON & SONS. Beckenham.—217, 219, and 221, Rye-rd., f., w. r. 841. 10s.	1
Fulham. 70, Oxley-av., ut. 74 yrs., g. r. 61. 10s., w. r. 411. 12s.	1
Bermundsey.—Six English grounds, f., w. r. 291. 38, Tanner-st., ut. 16 yrs., g. r. nil, w. r. 261.	1
Camberwell.—24, Graces-rd., ut. 47 yrs., g. r. 51. 10s., r. r. 321.	1
Norwood.—22 and 24, Auckland Hill, ut. 51 yrs., g. r. 201, y. and w. r. 901. 12s.	1
Penge. 4, Avington-gr., ut. 51 yrs., g. r. 81, e. r. 321.	1
Darenth. 2 to 28 (even), New rd., ut. 67 yrs., g. r. 671. 1 s., w. r. 201.	1
September 29.—By VENTIM, BULL, & COOPER. Eastbourne.—Cavendish Hotel, f. (as a going concern)	1

Contributions used in these lists.—F. r. for freehold ground-rent; l.g. r. for leasehold ground-rent; i.g. r. for improved ground-rent; g. r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e. r. for estimated rental; w. r. for weekly rental; q. r. for quarterly rental; y. r. for yearly rental; u. r. for unexpired term; p. a. for per annum; y. f. years; la. for lease; st. for street; rd. for road; sq. square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gds. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. f. office; s. for shops; ch. for court.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the special rate of 10s. per annum, with delivery by 7.30 A.M. every Post in London and its suburbs. To Canada, post-free, 12s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 20s. per annum. Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointment, xvii; Auction Sales, xxiv.

Conditions beyond those given in the following information are imposed in some cases, such as: the advertiser does not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

OCTOBER 7. — Barnsley. — EXTENSION OF THE Barnsley T.C. invite drawings for extension of Public Baths. Three plans are offered—50l., 30l., 20l. See advertisement in issue of August 11 for further particulars.

OCTOBER 7. — Bresham U.D.C. — Designs for out site and erecting thereon thirty particulars from the Clerk to the

OCTOBER 12. — Armadale. — Public hall and to cost 2,500l. Premiums of 15l. and 10l. each who intend to compete meet Town Clerk on site at 10 o'clock on Tuesday, 12th.

OCTOBER 12. — Coseley. — Plans are invited for a to accommodate about 200 children. Plans from the Education Officer, Coseley, near

OCTOBER 23. — Salford. — Extension of office on warehouse site at Eccles New-Premiums 20l. and 10l. Particulars from ward of Guardians, Salford. Limited to each practicing in Salford and district only.

OCTOBER 30. — Holland. — STAINED GLASS WIND-DESIGNS are invited for a stained glass to be erected in the University at

OCTOBER 31. — Bristol. — ALTERATIONS IN THE HOTEL. — Particulars from Mr. F. A. 44, Corn-street, Bristol.

OCTOBER 31. — Marylebone. — NEW MUNICIPAL WORKS.—Premiums of 100l., 75l., 50l. The is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

OCTOBER 31. — City of St. Petersburg. — TENDERS TO ALEXANDER II.—Particulars in our of August 13, 1910.

OCTOBER 30. — Cardiff. — TECHNICAL INSTITUTE. Cardiff Education Committee invite tenders and estimates for a technical institute. Advertisement in issue of August 18 for particulars. Successful architect to carry out. Premiums of 120l., 75l., and 50l. to competitors. Mr. J. S. Gibson, assessor.

OCTOBER 30. — Hastings. — EAST SUSSEX ALMS.—The Joint Committee of the 200 Hospital and King Edward VII. Alms Funds invite designs for new hospital. Advertisement in issue of August 25 for particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

OCTOBER 29. — Glasgow. — DESIGN FOR A new almshouse, for the (Alexander Thompson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

OCTOBER 1, 1912. — Rochdale Infirmary. — EX-TERIOR—Limited to Rochdale architects. Mr. Alex. Graham, F.R.I.B.A.

OCTOBER 29, 1912. — Montevideo. — GOVERNMENT (premiums 2,125l. and 850l.) and town improvement scheme (premiums 1,060l., 640l., and 400l.) may be seen at the Board of 73, Basinhall-street, E.C.

OCTOBER 31, 1912. — Australia. — DESIGNS FOR a new almshouse, for the (Alexander Thompson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

OCTOBER 1, 1912. — Dusseldorf. — A plan for the of the City of Dusseldorf. Premiums of 100l., 75l., and 50l. See advertisement in issue of September 1 for particulars.

OCTOBER 1, 1912. — Dusseldorf. — A plan for the of the City of Dusseldorf. Premiums of 100l., 75l., and 50l. See advertisement in issue of September 1 for particulars.

OCTOBER 1, 1912. — Dusseldorf. — A plan for the of the City of Dusseldorf. Premiums of 100l., 75l., and 50l. See advertisement in issue of September 1 for particulars.

OCTOBER 7. — St. Levan. — SCHOOL. — For alterations and improvements to St. Levan Council School. Mr. Sampson Hill, Architect to the Committee, Green-lane, Redruth.

OCTOBER 7. — Sumpin and Butterlaw. — COTTAGES.—Erection of five cottages at Sumpin, and alterations and alterations to cottages at Butterlaw. Plans at the Farm Houses at Sumpin and Butterlaw. Messrs. Melrose & Porter, solicitors, Coldstream.

OCTOBER 9. — Arklow. — HOUSES.—Erection of twelve dwelling-houses. Plans by Mr. G. T. Moore, C.E., architect, 1 and 2, Foster-place, Dublin. Deposit of 1l. 1s.

OCTOBER 9. — Barrow-in-Furness. — SHED, ETC.—Erection of a cart-shed, store, office. Quantities from the Borough Engineer.

OCTOBER 9. — Broadstairs. — CONVENIENCES.—Construction of public conveniences. Plans and specifications seen and forms of tender from the Town Surveyor, Mr. H. Hurd, C.E., Council Offices, Broadstairs.

OCTOBER 9. — Bpton. — ADDITIONS, ETC.—Additions to the killing shop and new stairs to hall. Drawings and specifications seen, and forms of tender from Mr. C. Thos. Wilson, L.R.I.B.A., architect, 22, Durham-road, Blackhill.

OCTOBER 9. — Edinburgh. — CONVENIENCE.—Erection of a public convenience at Sciennes-road. Plans and specifications from the Borough Engineer, 1, Parliament-square, Edinburgh.

OCTOBER 9. — Nottingham. — ALTERATIONS.—For alterations to property in various streets. Plans seen, and specifications and quantities, on deposit of 1l. 1s. from Mr. E. B. Lewis, City Architect, Guildhall, Nottingham.

OCTOBER 9. — St. Helens. — CONVERSION.—For conversion of sanitary conveniences to the water-carriage system. Specifications from the Chief Inspector of Nuisances, Town Hall, St. Helens.

OCTOBER 10. — Barrow-in-Furness. — PARTITIONS.—Erection of two partitions at Thwaite-street Boys' School. Plan seen, and quantities from the Borough Engineer, Town Hall.

OCTOBER 10. — Grays. — INFANTS' SCHOOL.—The Essex Education Committee (Orsett District) invite tenders for infants' school. See advertisement in this issue for further particulars.

OCTOBER 10. — Newcastle-on-Tyne. — INN.—Re-building of the Fox and Hounds Inn, West Tyne. Plans seen, and quantities from Messrs. Wm. & T. R. Milburn, F.R.I.B.A., architects, 4, Mosley-street, Newcastle-on-Tyne.

OCTOBER 11. — Blackburn. — URINAL, ETC.—Erection of four water-closets and urinal at the Workhouse. Specifications and forms of tender from Mr. S. J. Lancaster, architect, 4, King-street, Blackburn.

OCTOBER 11. — Coventry. — WARD BLOCK, ETC.—The Coventry and Warwickshire Hospital Committee invite tenders for proposed ward block, operating theatre, etc. See advertisement in this issue for further particulars.

OCTOBER 11. — Hammersmith. — COLD FRAMES.—The Hammersmith B.C. invite tenders for erection at Borough cemetery of a range of cold frames for the propagation of plants. See advertisement in this issue for further particulars.

OCTOBER 11. — London. — FRAMES.—Erection of a country house, etc. Plans and specifications and quantities from Mr. Stephen Shaw, F.R.I.B.A., architect, Kendal.

OCTOBER 11. — London. — FRAMES.—Erection at the Borough Cemetery of a range of cold frames for the propagation of plants. Plans seen, and form of tender and specification from Mr. H. Mair, Borough Surveyor, Town Hall, Hammersmith, W.

OCTOBER 11. — Wevbridge. — TECHNICAL INSTITUTE.—The Surrey Education Committee invite tenders for new technical institute. See advertisement in this issue for further particulars.

OCTOBER 12. — Dobwalls. — COTTAGES.—Erection of a cottage. Plans and specification at the Dobwalls Farm. Mr. J. R. Toms, Secretary, Liskeard.

OCTOBER 13. — Grimsby. — SCHOOL.—For alteration to the Swallow School. Plans and specifications from Mr. G. Allison, architect, Regent House, West Street, Grimsby.

OCTOBER 13. — Rochford. — NURSES' AND BARNES' HOMES.—The Rochford Guardians invite tenders for nurses' home and babies' home at Workhouse. See advertisement in this issue for further particulars.

OCTOBER 14. — Milton. — COTTAGES.—Erection of twelve cottages. Plans and specifications with Messrs. C. Johnson & Son, architects and surveyors, Cockton-hill, Bishop Auckland.

OCTOBER 14. — Quaker. — ALLEGATIONS.—For alterations to new schools. Plans and specification with Mr. R. E. Jackson, architect, 6, The Arcade, Lancaster.

OCTOBER 16. — Edinburgh. — FOUNDATIONS, ETC.—For foundations to barrack and band blocks to Redford, Infantry Barracks, Colinton. Plans,

specification, and conditions of contract at the office of the Director of Barrack Construction, 80, Pall-mall, London, S.W., or at the Barrack Construction Office, Colinton, Edinburgh. Quantities, on deposit of 10s., from the Director of Barrack Construction.

OCTOBER 16. — Felixstowe. — SCHOOL.—Erection of elementary school. Quantities from the Committee's Surveyor, County Hall, Ipswich. Deposit of 2l. 3s. Plans at the Surveyor's Office, County Hall, Ipswich.

OCTOBER 16. — Harrogate. — ROOMS, ETC.—The Harrogate Gas Company invite tenders for the erection of new bathrooms, water-closets, and mess-room at the Gasworks, Ripon-road. Specification and quantities from Mr. H. Wilkinson, Secretary to the General Manager, Gas Offices, James-street, Harrogate.

OCTOBER 16. — Saltwood. — OFFICES.—Erection of new offices. Mr. A. C. Eddis, Correspondent, Saltwood, Hythe.

OCTOBER 17. — Darras Hall. — STATION, ETC.—The North-Eastern Railway invite tenders for the erection of a new station, stationmaster's house, and cottages. Plans and specification seen, and quantities from Mr. William Bell, the company's architect, Central Station, Newcastle-on-Tyne.

OCTOBER 17. — East Ham. — SCHOOL.—The East Ham Education Committee invite tenders for Brampton-road School. See advertisement in this issue for further particulars.

OCTOBER 17. — Edinburgh. — EXTENSION.—For the extension (second portion) of the laboratory building at the Edinburgh Royal Botanic Gardens. Drawings, specification, and conditions seen, and quantities, on deposit of 1l. 1s. from H.M. Office of Works, 3, Parliament-square, Edinburgh.

OCTOBER 17. — Newport, Mon. — PREMISES.—Erection of new pigsties and repairs at Elm Farm. Plans and specifications at the office of Mr. C. R. Harding, County Land Agent, County Council Offices, Newport, Mon.

OCTOBER 17. — York. — STORES.—The North-Eastern Railway invite tenders for the erection of central stores, etc., for hotels department, at York. Plans and specification seen, and quantities from Mr. William Bell, the company's architect, at York.

OCTOBER 18. — Radry. — RESIDENCE.—Erection of a detached villa residence. Plans and specification seen, and quantities, on deposit of 1l. 1s. from Mr. W. H. D. Caple, F.R.I.B.A., 2, Church-street, Cardiff.

OCTOBER 19. — Cullingworth. — ADDITIONS.—Alterations and additions to the Council school. Plans seen, and specifications and quantities from the Education Architect, County Hall, Wakefield. Deposit of 1l.

OCTOBER 19. — Letchworth. — SCHOOL.—The Hertfordshire Education Committee invite tenders for erection and completion of a new school. See advertisement in this issue for further particulars.

OCTOBER 19. — London, S.E. — REBUILDING PARAPET AND WALLS.—The Southwark Guardians invite tenders for rebuilding certain parapet and other walls at Christchurch Workhouse, Gray-street, Waterloo-road, S.E. See advertisement in this issue for further particulars.

OCTOBER 21. — Brigg. — EXTENSIONS.—Extensions to the school-house at Brigg Grammar School. Plans and specifications with Mr. George H. Allison, architect, 11, Bighy-street, Brigg. Deposit of 1l. 1s.

OCTOBER 21. — Manchester. — SCHOOL.—Erection of the George Leigh-street Municipal School, Aston. Plans seen, and quantities at the Education Offices, Deansgate, Manchester, on deposit of 2l. 2s.

OCTOBER 23. — Luton. — BUILDINGS.—Erection of a block of buildings for women's infirmary and nurses' home at the Workhouse. Plans and specifications by Messrs. Gotch & Saunders, architects, Kettering. Quantities on deposit of 1l. 1s.

OCTOBER 24. — Winchester. — SCHOOL.—The Winchester Corporation invite tenders for new elementary school on the Danemark Estate. See advertisement in this issue for further particulars.

OCTOBER 26. — London. — ADDITIONS.—Erection of additions to the nurses' home at Infirmary, Whipp's Cross-road, Leytonstone, N.E. Mr. F. J. Sturdy, F.R.I.B.A., 45, Finsbury-pavement, E.C. Deposit of 5s.

OCTOBER 31. — Erith. — ENGINE-HOUSE, ETC.—The London C.C. invite tenders for additional engine-house etc. at Southern Outfall Works, Crossness. See advertisement in this issue for further particulars.

OCTOBER 31. — Leigh-on-Sea. — SCHOOL.—Erection of a school. Quantities, on deposit of 2l. 2s., from the architect, Mr. P. Brockbank, 14 and 15, County-chambers, Southend-on-Sea.

Contracts.

BUILDING.

Date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 7. — Ferryhill. — HOUSES.—Erection of new almshouses, for the Cornforth and Co-operative Society, Ltd. Plans, specifications, at Ferryhill Branch Stores. Mr. Archibald, Secretary, Cooxhoe.

OCTOBER 7. — Kelshley. — MILL.—Erection of a new mill. Names to Messrs. J. B. Bailey & Co., architects, 3, Scott-street, Kelshley.

OCTOBER 7. — Loughborough. — ERECTIONS.—On the playing field, specifications from A. R. R. Franks, Public Library,

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* **NOVEMBER 6.—Tunbridge Wells.—SCHOOL.**—The Kent Education Committee invite tenders for new county school for girls. See advertisement in this issue for further particulars.

No DATE.—**Corby.**—WORKS.—For the work at Hill House, Corby. Plans, specifications, and quantities from Mr. T. Taylor Scott, F.R.I.B.A., architect and surveyor, 88, Lowther-street, Carlisle.

No DATE.—**Exmouth.**—ALTERATIONS.—For alterations and new shop front in Exeter-road. Names to Mr. E. E. Ellis, architect, Exmouth.

No DATE.—**Newport, Mon.**—STORES, etc.—Erection of extensions to bottling stores and stables at the Anchor Brewery. Quantities on deposit of 21. 2s., from Messrs. Swatwell & Hayward, architects and surveyors, 202, Dock-street, Newport, Mon.

No DATE.—**Rochdale.**—ROOMS, etc.—Erection of porches, bedrooms, and alterations at the Workhouse. Mr. R. A. Leach, Union Clerk, Union Offices, Townhead, Rochdale.

No DATE.—**Weybridge.**—INSTITUTE.—Erection of a technical institute. Drawings and conditions of contract with the architects, Messrs. Jarvis & Richards, 10, Queen Anne's-gate, Westminster, S.W. Quantities on deposit of 21. 2s.

ENGINEERING, IRON, AND STEEL.

OCTOBER 11.—**Camelford.**—WATERWORKS.—For various works in connexion with the Waterworks. Plans with Mr. T. T. Gilbert, Forester, Camelford. Specifications from Mr. G. H. Harris, Engineer, Wadebridge. Deposit of 21. 2s.

* OCTOBER 11.—**Hammersmith.**—FENCING AND GATES.—The Hammersmith E.C. invite tenders for wrought-iron boundary fencing and gates for children's playing ground at Wormholt Park. See advertisement in this issue for further particulars.

OCTOBER 11.—**Stoke-upon-Trent.**—HEATING.—For installation of hot-water service and heating apparatus for the operating theatre at the Union Workhouse. Consulting engineers, Messrs. Edwards & Shaw, Colmore-row, Birmingham.

OCTOBER 13.—**Bradinch.**—BRIDGEWORK.—For building a new concrete sill, new concrete floor, and other general repairs at the Hele Bridge. Specification at the office of the Council, at the Castle, Exeter. Mr. H. Michelmore, Clerk of the Council, Castle, Exeter.

OCTOBER 14.—**Milford.**—WATERWORKS.—Repairing the Rahmullen Waterworks. Plans and specifications by Mr. J. J. S. Barnhill, A.M.Inst.C.E., Baltic-buildings, Foyle-street, Londonderry.

No DATE.—**Wilbury.**—HEATING.—For heating the "Passmore Edwards" District Cottage Hospital. Plans with the architect, Mr. C. M. Shiner, A.R.I.B.A., 10, Duke-street, Adelphi, W.C.

FURNITURE, PAINTING, MATERIALS, etc.

OCTOBER 6.—**Pentre.**—PAINTING.—For painting and decorating English Wesleyan Chapel. Specification with Mr. W. D. Morgan, M.S.A., architect, 134, Ystrad-road, Pentre.

OCTOBER 7.—**Sunderland.**—PAINTING.—For repairs and painting of Nos. 41 and 42, Low-street, and exterior painting of No. 39, Low-street. Specification seen, and form of tender from the Borough Surveyor, Town Hall.

OCTOBER 9.—**Belfast.**—FURNITURE.—For the plumbing work in the administration block at the new abattoir, Stewart-street. Plans seen, and specification from the City Surveyor on deposit of 11. 1s.

OCTOBER 9.—**Halifax.**—PAINTING.—For painting and colouring at Belle Vue Library. Specifications seen, and forms of tender from Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax. Deposit of 11.

OCTOBER 9.—**Halifax.**—PAINTING.—For the outside painting of shops in Market-street, Russell-street, and Old Market also, for lime-washing the slaughter-houses, market hall, etc. Specifications and forms of tender from Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax. Deposit of 11.

OCTOBER 9.—**New Tredegar.**—PAINTING.—For renovating and painting Queen's Hotel. Mr. G. Kenahole, M.S.A. Bargoed.

OCTOBER 10.—**Exeter.**—PAINTING.—For painting at the Workhouse and Higher and Lower Summerlands. Specifications from the architect, Mr. R. M. Challice, 14, Bedford-circus, Exeter.

OCTOBER 10.—**Hastings.**—PAINTING.—For painting four cottages. Specification and form of tender from the Borough Engineer, Mr. P. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

OCTOBER 10.—**Plymouth.**—FITTINGS, etc.—Alteration and refitting old fittings, etc., and fixing new fittings, tables, etc., in the laundry at the Workhouse. Architects, Messrs. Thornely, Rooke, & Barron, 11, The Crescent, Plymouth.

OCTOBER 11.—**London.**—FENCING.—Supplying and fixing wrought-iron boundary fencing and gates for Children's Playing Ground at Wormholt Park, Hammersmith. Plans seen, and form of tender and specification from Mr. H. Mair, Borough Surveyor, Town Hall, Hammersmith, W.

OCTOBER 12.—**Devonport.**—RENOVATING.—For renovating the Board-room at the Workhouse. Specifications at the Workhouse.

OCTOBER 14.—**Glaston.**—PAINTING, etc.—Repairs, painting, distemping, etc., of interior and exterior of the Public Hall. Specifications from Mr. Charles Angier, Secretary, Glaston, Linc.

OCTOBER 18.—**Sturley.**—PAINTING.—For painting exterior of the Union Offices. Mr. J. S. Horn, Clerk.

OCTOBER 18.—**Stockton-on-Tees.**—PAINTING.—For painting at the elementary schools. Specification at the Borough Engineer's Office. Mr. M. H. Sykes, Borough Engineer, Town Hall, Stockton-on-Tees.

* OCTOBER 19.—**Stepney.**—PAINTING AND REPAIRING.—The Stepney Guardians invite tenders for exterior painting and repairing works at the Workhouse. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATERWORKS.

OCTOBER 9.—**Ilford.**—ROAD.—For making Station-road. Plans and specification see quantities issued by Mr. H. Shaw, M.Inst. Engineer and Surveyor to the Council, on 6 of 21. 2s., Town Hall, Ilford.

OCTOBER 9.—**Shrewsbury.**—STREET PAVING AND FLAGGING private streets. Drawings at the City Engineer's Office, Municipal Engineer. Forms of tender and quantities on deposit of 10s. 6d., Highways Office, 155, Kirkstall-road, Leeds.

OCTOBER 10.—**Preston.**—MATERIALS.—Supply of materials. Forms of tender from W. H. Schofield, County Surveyor, 4, Offices, Preston.

OCTOBER 11.—**Birkenhead.**—STREETS various street works. Plans and specifications seen, and quantities from Mr. C. Brown M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Birkenhead. Deposit of 10s.

OCTOBER 11.—**Wembley.**—ROAD.—For making up of Dagmar-avenue and Linden-avenue. Drawings and specifications with Mr. Cecil Chapman, the Surveyor to the Council, 1, Offices, Wembley.

OCTOBER 12.—**Torridon.**—ROAD.—Construction of a road through the township of Diabeg, and specification with Mr. John Macdonald, County Councillor, Diabeg. Mr. John Macdonald, Road Surveyor, Strath, Gairloch.

OCTOBER 13.—**Alton.**—MATERIALS.—For the construction of a road through the township of Diabeg, and specification with Mr. John Macdonald, County Councillor, Diabeg. Mr. John Macdonald, Road Surveyor, Strath, Gairloch.

OCTOBER 14.—**Preston.**—ROAD.—For making up of Dagmar-avenue and Linden-avenue. Drawings and specifications with Mr. Cecil Chapman, the Surveyor to the Council, 1, Offices, Wembley.

OCTOBER 17.—**Hoddesdon.**—DRAINAGE construction of 9-in. stoneware pipes for water drain. Plans and specifications seen, and quantities from Mr. W. H. Flood, the Surveyor to the Council, High-street, Hoddesdon.

OCTOBER 19.—**Mitcham.**—ROAD.—For making up of Oakwood-avenue. Plans and specifications seen, and quantities from Mr. R. M. Charlton, Katharine-street, Croydon. Deposit of 11.

OCTOBER 27.—**Lichfield.**—SEWERS.—Construction of sewers, with disposal works. Plans and specifications, quantities, and form of tender, on deposit of 31. 3s., from Mr. J. H. Chancellors, City Engineer, City Engineer's Office, Lichfield.

NOVEMBER 1.—**Ebbw Vale.**—SEWERAGE laying stoneware, cast-iron, and steel pipes. Plans and drawings seen, and specification from Mr. J. Thomas, Town Engineer and Surveyor. Deposit of 51.

NOVEMBER 6.—**Barnet.**—SEWERAGE, etc. construction of sewers, engine-house, etc., and drawings with Mr. W. F. M.Inst.C.E., Parliament-mansions, V. street, Westminster. Quantities on deposit of 31. 3s.

No DATE.—**Birdhope Crags.**—STONE.—Of broken stone, etc., for road-making. Plans and drawings at Birdhope Crags. For tender and specification from Comm. Royal Engineer, 13, Belle Grove-terrace, castle-on-Tyne.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Applicable to
* LECTURER ON LAW OF DILAPIDATIONS, EASEMENTS, ETC.	London C.C.	See advertisement in this issue	Oct

Auction Sales.

Nature and Place of Sale.	By whom Offered.	of
* ARTIFICIAL MARBLE—On the Premises	J. Odell & Co.	Oct
* BUILDING MATERIALS, SOUTH NORWOOD—On the Premises	Hooker & Webb	Oct
* DEALS, BATTENS, BOARDS, TIMBER, ETC. Great Hall, Winchester House, E.C.	Churchill & Sim	Oct
* KURSAL SITE (FREEHOLD), MARGATE—White Hart Hotel, Margate	J. Reeve & Son	Oct
* NURSERY STOCK, SOUTH WOODFORD—On the Premises	Protheroe & Morris	Oct
* FREEHOLD BUILDING SITE, GT. ST. HELEN'S, E.C. At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct
* FREEHOLD PROPERTY, HARROW WEALD—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct
* FREEHOLD FACTORY PREMISES, LEYTON—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Oct
* FREEHOLD BUILDING LAND, FULHAM—Estate Room, 20, Hanover-square, W.	Knight, Frank, & Rutley	Oct

PRICES CURRENT OF MATERIALS.

* Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.	
Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 13 0
Picked Stocks for Facing	2 7 0
Per 1000, Delivered at Railway Depot.	£ s. d.
Flemons	1 9 0
Best Firebricks	3 14 0
Best Red Faced	3 13 0
Best Blue Faced	5 0 0
Best Blue Faced	5 0 0
Staffordshire	3 15 0
Do, London	4 0 0
Best Stourbridge	3 14 0
Best Firebricks	3 14 0
Best Red Faced	3 13 0
Best Blue Faced	5 0 0
Best Blue Faced	5 0 0
Staffordshire	3 15 0
Do, London	4 0 0

BRICKS, &c. (Continued).	
Per 1000, Delivered at Railway Depot.	£ s. d.
D'ble Stretchers	15 7 6
Double Headers	13 7 6
One Side and two Ends	17 7 6
Two Sides and one End	18 7 6
Splays & Squints	15 17 6
Best Dipped Salt	10 17 6
Glaz. Str'ch'rs	10 17 6
Headers	10 7 6
Second Quality White and Dipped Salt Glazed, 21. 5s. per 1000 less than best.	£ s. d.
Thames and Pitt Sand	8 9 per yard, delivered.
Thames and Pitt Sand	8 9 per yard, delivered.
Best Portland Cement	29 0 per ton, "
Best Good Blue Lias Lime	10 0 " "
NOTE—The cement or lime is exclusive of the ordinary charges for sacks.	
Grey Stone Limes	13s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.	

STONE.	
Per Ft. Cube.	
BATH STONE—delivered on road waggon	
Paddington Depot	
Do, delivered on road waggon, Nine Elms Depot	
PORTLAND STONE (20 ft. average)—	
Brown Whitbed, delivered on road waggon	
Paddington Depot, Nine Elms Depot	
Pinnico Wharf	
White Basebed, delivered on road waggon	
Paddington Depot, Nine Elms Depot	
Pinnico Wharf	
Per Ft. Cube, delivered at Railway Depot	
Ancestor in blocks	1 10
Beast in blocks	1 6
Greenish in blocks	1 10
White in blocks	1 10
Do, in blocks	2 4
Red Cornish in blocks	3

STONE (Continued).

For Ft. Cube, Delivered at Railway Depot, s. d.	
random blocks	2 10
For Ft. Super., Delivered at Railway Depot.	
random blocks	2 3
bed two sides ditto, ditto	2 6
bed two sides ditto (random sizes)	0 7
bed two sides ditto (random sizes)	0 6
For Ft. Cube, Delivered at Railway Depot.	
random blocks	3 0
For Ft. Super., Delivered at Railway Depot.	
random blocks	2 8
bed two sides ditto	3 0
bed two sides ditto (random sizes)	1 2
bed two sides ditto (random sizes)	0 5

SLATES.

Per 1000 of 1200 at Railway Depot.	
best blue	12 6
unfading green	15 7 6
12x12 ditto	18 7 6
12x10 ditto	13 5 0
18x8 ditto	10 5 0
12x10 permanent	11 12 6
12x10 ditto	9 12 6
12x10 ditto	6 12 6

TILES.

At Railway Depot.	
best "Hartshill"	50 0
Do. pressed (per 1000)	47 6
Do. pressed (per 1000)	50 0
Hip (per doz.)	4 6
Valley (per doz.)	3 6
Staircase (per doz.)	4 0
Bed or Brindled	42 6
Bed or Brindled	45 0
Bed or Brindled	45 0
Bed or Brindled	45 0
Bed or Brindled	45 0

WOOD.

At per standard.	
best 3 in. by 11 in. and 4 in.	14 0 0
best 3 in. by 9 in.	13 0 0
best 2 1/2 in. by 7 in. and 3 in.	11 0 0
best 2 1/2 in. by 6 in. and 3 in.	10 0 0
best 2 1/2 in. by 5 in. and 3 in.	9 0 0
best 2 1/2 in. by 4 in. and 3 in.	8 0 0
best 2 1/2 in. by 3 in. and 3 in.	7 0 0
best 2 1/2 in. by 2 in. and 3 in.	6 0 0
best 2 1/2 in. by 1 in. and 3 in.	5 0 0
best 2 1/2 in. by 1 in. and 2 in.	4 0 0
best 2 1/2 in. by 1 in. and 1 in.	3 0 0
best 2 1/2 in. by 1 in. and 1 in.	2 0 0
best 2 1/2 in. by 1 in. and 1 in.	1 0 0
best 2 1/2 in. by 1 in. and 1 in.	0 0 0

WOOD (Continued).

JOHNSON'S WOOD (Continued).	
Dry Walnut, American, per ft. s. d.	
super, as inch	0 10 0
Teak, per load	18 0 0
American Whitewood planks,	
per ft. cube	0 4 0
Prepared Flooring, etc.	
1 in. by 7 in. yellow, planed and	0 13 6
shot	0 17 0
1 in. by 7 in. yellow, planed and	0 14 0
matched	0 18 0
1 in. by 7 in. white, planed and	0 16 0
matched	0 10 0
1 in. by 7 in. white, planed and	0 12 0
matched	0 14 6
1 in. by 7 in. white, planed and	0 12 6
matched	0 15 0
1 in. by 7 in. white, planed and	0 15 0
matched	0 16 6
3 in. by 7 in. yellow, matched	0 11 0
and beaded or V-jointed brds.	0 13 6
1 in. by 7 in. " "	0 14 0
3 in. by 7 in. white " "	0 10 0
1 in. by 7 in. " "	0 12 9
6 in. at 6d. to 9d. per square less than 7 in.	0 11 0

JOISTS, GIRDERS, &c.

In London, or delivered	
Railway Yarn, per ton	
Bolled Steel Joists, ordinary	7 10 0
sections	8 0 0
Compound Girders, ordinary	9 10 0
sections	10 0 0
Steel Compound Stanchions	11 0 0
sections	12 0 0
Angles, Tees, and Channels, ordinary	9 10 0
sections	10 0 0
Fitch Plates	9 10 0
Cast Iron Columns & Stanchions,	
including ordinary patterns	7 10 0

METALS.

Per ton, in London.	
Iron—	
Common Bars	8 10 0
Staffordshire Crown Bars, good	9 10 0
merchant quality	9 5 0
Staffordshire "Marked Bars"	10 10 0
Mild Steel Bars	8 15 0
Hoop Iron, best price	9 5 0
Galvanized	9 10 0
Sheet Iron Black—	
Ordinary sizes to 30 g.	9 15 0
" "	10 15 0
" "	12 5 0
Sheet Iron, Galvanized, flat, ordinary quality—	
Ordinary sizes, 6 ft. by 2 ft. to	15 0 0
8 ft. to 30 g.	15 0 0
Ordinary sizes to 22 g. and 24 g.	15 10 0
" "	16 10 0
Sheet Iron, Galvanized, flat, best quality—	
Ordinary sizes to 30 g.	18 0 0
" "	22 g. and 24 g. 18 10 0
" "	26 g. 20 0 0
Galvanized Corrugated Sheets—	
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0
" "	22 g. and 24 g. 14 10 0
" "	26 g. 16 5 0
Best Soft Steel Sheets, 6 ft. by 2 ft.	13 0 0
to 3 ft. to 30 g. and thicker	13 0 0
Best Soft Steel Sheets, 3 ft. & 24 g.	13 0 0
" "	15 0 0
Cut Nails, 3 in. to 6 in.	10 10 0
(Under 3 in., usual trade extras.)	11 0 0

LEAD, &c.

Per lb. s. d.	
Lead—Sheet, English, 4 lb. and up	18 15 0
Pipe in coils	19 5 0
Soil pipe	22 5 0
Compo pipe	23 5 0
Zinc—Sheet	
Vielle Montagne	34 10 0
Silesia	35 10 0
Sheet in bundles, per sq. ft. extra.	
COPPER—	
Strong Sheet	per lb. 0 1 0
Thin	0 1 1
Copper nails	0 0 10
Copper wire	0 0 10
Brass—	
Strong Sheet	0 0 11
Thin	0 1 0
Tin—English Ingots	0 0 10
Solder—Plumbers	0 0 8
Timmen's	0 0 11
Blowpipe	0 1 2

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*	
Per Ft. Delivered.	
15 oz. thirds	24d.
" fourths	14d.
21 oz. thirds	3d.
" fourths	24d.
26 oz. thirds	4d.
" fourths	21 oz. 4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*	
Per Ft. Delivered.	
Figured Rolled, Oxford Rolled, Oceanic, Acreto, Muffled, and Boiled Oxide, white	24d.
Ditto, tinted	3d.
Not less than three crates.	

OILS, &c.

per gallon	
Raw Linseed Oil in pipes	0 3 8
" " in barrels	0 3 9
" " in drums	0 3 11
Boiled " " in barrels	0 3 11
" " in drums	0 3 11
Turpentine in barrels	0 3 8
" " in drums	0 3 5
Genuine Ground English White Lead, per ton	24 10 0
Red Lead, Dry	22 10 0
Best Linseed Oil Putty	per owt. 0 11 0
Stockholm Tar	per barrel 1 12 0

VARNISHES, &c.

Per gallon.	
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superior Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superior Hard-drying Oak, for sea	
Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superior Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 12 6
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flaking Varnish	1 4 0
White Pale Sannet	0 15 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knottin	0 10 9
French and Brush Polish	0 10 6

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Promoted Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday, [N.B.—We cannot publish tenders unless authenticated either by the architect or the building owner, and we cannot publish announcements of tenders accepted unless the amount of the tender is stated, and the lowest tender is under 1000, unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

AYLESBURY.—For erection of a domestic science building.	
Mr. F. Taylor, architect, Dourton-street, Aylesbury	
Mayne & Son	£286
Webster & Cannon	238
J. H. Holland	238

AYLESBURY.—For decorating, sanitary, and other work to "The Grove," Grandon Underwood, Bucks, for the Aylesbury Guardians.	
Mr. F. Taylor, architect, 7, Dourton-street, Aylesbury	
Mayne & Son	£225
Cripps & Sons	215
J. H. Holland	201
T. Ward	200

BADBY.—For erection of a public elementary school.	
Mr. J. T. Blackwell, architect, 35, High-street, Kettering	
Lewin & Son	£1,441
T. Adams & Son	1,375
T. Higgs	1,287
E. Green	1,287
R. Love & Co.	1,234
W. Higgins	1,217
T. Hickman & Sons	1,210

BARNES.—For wood-paving Church-road and Rock-lane, for the Urban District Council.	
Church-road.	
T. Cook, Starkey, & Co.	£1,582
W. Griffiths & Co.	1,382
J. Mowlem & Co.	1,368
G. Wimpey & Co.	1,332
T. Wood & Sons	1,334
Acme Flooring and Paving Co., Ltd.	1,273
Improved Wood Pavement Co., Ltd., 46, Queen Victoria-street, E.C.4	1,166

Rock-lane.	
T. Cook, Starkey, & Co.	£2,583
T. Wood & Sons	2,346
G. Wimpey & Co.	2,186
J. Mowlem & Co.	2,060
W. Griffiths & Co.	2,040
Acme Flooring and Paving Co., Ltd.	2,023
Improved Wood Pavement Co., Ltd., 46, Queen Victoria-street, E.C.4	1,990

BIRMINGHAM.—For erection of two homes for infants at the Cottage Homes, Marston Green, for the Birmingham Board of Guardians. Messrs. C. Whitwell & Son, architects, Birmingham:—
 W. Bishop £3,284 0 J. Holyoak & Son £2,992 0
 T. Elvins & Sons 3,365 0 P. H. Smith 2,956 0
 J. Barnsley & Sons 3,238 0 H. Taylor 2,926 12
 H. Morgan 3,211 0 J. A. Turlton 2,926 0
 A. C. Hughes 3,207 0 E. Crowder 2,877 0
 T. Johnson 3,117 0 S. P. Swift 2,851 12
 B. Whitehouse & P. W. Cox, Hands
 S. S. 3,023 0 worth* 2,840 0
 S. E. Cox & Co. 3,000 0

CHIPSTEAD.—For alterations and additions to Rock House, Chipstead, for the Sevenoaks Board of Guardians:—
 R. A. Lowe £969 0 0 Bailey, Parkins,
 Crossley & Son 808 0 0 & Gootes £688 0 0
 Myall Bros. 765 0 0 J. Heath 687 5 10
 R. Tong 750 0 0 North Downs
 G. Basset 745 0 0 Building Co. 680 15 0
 P. Banks 697 0 0 W. J. Zealey,
 C. Bentley 684 0 0 Sevenoaks* 630 0 0
 A. Tye 692 0 0

CREWEKERNE.—For alterations and additions at "Racedown," Dorset, for Colonel R. J. Pinney. Mr. A. Blomfield Jackson, F.R.I.B.A., architect, 3, New-square, Lincoln's Inn, W.C.:—
 W. Cadby & Sons, Leyne Regis* £2,367 16 2

FARNHAM.—For additions to the maternity ward, and construction of an iron emergency staircase, for the Guardians:—
 Mardon & Mills £1,338 10 W. J. Snuggs £1,124 0
 Martin & Wells 1,275 0 Adams, Alton* 1,081 15
 Crosby & Co. 1,230 0

FERRYHILL (Durham).—For erection of an Independent Methodist Church at Dean Bank, Ferryhill. Mr. J. E. Crossart, architect, Durham-road, Finden Hill, Sacristian:—
 Salkeld £745 10 0 Thompson & Den-
 L. Rowe 896 5 0 nison, Bland-
 T. Hilton 880 12 6 ford - street,
 Sutherland* £380 10 0

GUILDFORD.—For the erection of motor factory No. 3 at Woodbridge, Guildford, for Messrs. Dennis Bros., Ltd., Messrs. Clemence & Moon, architects, Bank House, Guildford:—
 W. Harbrow, South Bermondsey Station, S.E.* £9,984
 [Twelve tenders received.]

HAROLD WOOD.—For erection of new dormitory buildings at the Grange, for the West Ham Town Council:—
 Clemens Bros. £3,270 18 7 J. W. Jerram £1,840 0 0
 Brown Bros. 2,207 0 0 F. Willmott 1,787 10 0
 S. E. Moss 2,000 0 0 A. J. Symes 1,777 0 0
 Myall & Upson 1,960 0 0 J. S. Ham-
 J. W. Maddi- mond & Son 1,708 0 0
 son 1,874 0 0 A. H. Fryd,
 Davey & Armi- Southend-
 tage 1,857 0 0 on-Sen* 1,685 0 0
 H. J. Carter, Ltd. 1,840 0 0

HENDON, N.W.—For an extension of factory at Leatherville, Colindale-avenue, Hendon, N.W., for Messrs. A. Garstin & Co., Ltd., Messrs. Coleman & Holmes, architects, 5, Rosemont-terrace, High-road, North Finchley, N.:—
 C. R. Price £1,837 Bate Bros. £1,741
 C. P. Roberts & Co. 1,796 W. H. T. Kelland* 1,733
 McCormick & Sons, E. J. Smerdon 1,725
 Ltd. 1,771

KINCRAIG.—For erection of a manse at Alvie, for the U.F. Church of Scotland. Mr. A. Cattannach, architect, Kincraig, Scotland:—
 Mason: J. S. MacPherson, Kingussie,
 N.B. £308 2
 Joiner: D. Grant, Kingussie, N.B. 348 11
 Plumber: W. Drouthart, Kingussie, N.B. 93 5
 Slater: J. Reid, Kingussie, N.B. 34 15
 Plasterers: J. & W. Stuart, Grantown-
 on-Spy 55 19
 Painter: K. Chisholm, Inverness 18 10

LONDON.—For the erection of two sanitary conveniences at Barnes, for the Urban District Council. Mr. G. B. James, A.M.C.E., surveyor, High-street, Mortlake:—
 H. King & Sons £646 F. W. Hampton £570
 Jarman & Co. 595 W. Lowe 536
 Stourbridge Glazed R. T. Hughes & Co.,
 Brick and Fireclay Ltd., Mortlake,
 Co. 570 S.W.* 495

LONDON.—For rebuilding premises, No. 24, Conduit-street, W., for Emile et Cie. Mr. A. Blomfield Jackson, F.R.I.B.A., architect, 3, New-square, Lincoln's Inn, W.C.:—
 J. W. Falkner & Sons £5,223
 Patman & Fotheringham, Ltd. 5,183
 H. & E. Lea* 5,099

LONDON, S.E.—For repairs, redecoration, and improvement of the sanitary arrangements at the Town Hall, for the Greenwich Borough Council:—
 G. Usher £230 0 0 F. J. Gorman £19 15 0
 J. Rooking & Co. 207 0 0 G. Radgrove 155 18 6
 E. Mills 189 0 0 H. Groves,
 W. Mills & Sons 181 0 0 Stockwell-st.* 153 0 0

NEWPORT (Mon.).—For erection of business premises, for Thomas Cordery, Esq., J.P., Messrs. E. Page & Lister, architects, Newport (Mon.):—
 W. Collard & Son £1,246 R. W. Moon £1,119
 F. H. Saunders 1,223 T. Jerratt 1,100
 Phillips, Clarke, & J. B. Jenkins 1,100
 Co. 1,210 Kirby & Westacott, 1,100
 Leadbetter & Co. 1,200 H. Thomas & Son 1,063
 Shopland 1,107 H. J. Herbert & Co. 1,060
 E. Dean 1,177 F. Leadbetter 1,078
 Browncomb & Son 1,150 C. H. Read, New-
 J. H. Williams 1,139 port (Mon)* 1,043

ORSETT.—For the erection of concrete walling, etc., enclosing grounds at Orsett Union Workhouse, for the Orsett Board of Guardians. Christopher M. Shiner, A.R.I.B.A., architect and surveyor, 10, Duke-street, Adelphi, W.C.:—
 J. Pike & Co. £514 J. J. Lawrence £382
 H. J. Carter, Ltd. 406 Brown Bros. 365
 H. H. Carter 385 G. Brown, Grays* 355

PORTISHEAD.—For partially pulling down buildings at Portishead Dock and erecting a maize silaging mill and store, for Messrs. E. Bailey & Son, Ltd., Mr. P. B. Riggs, architect, Frome:—
 Hatherly & Co. £4,757 Lovell & Sons £3,887
 Hayward & Wootter 4,450 R. Wilkins & Sons 3,864
 Broad & Sons 4,400 Walters & Son 3,837
 P. Chowra 4,380 G. Downs & Son 3,650
 E. Love 4,072 A. B. Heurl 3,583
 Marsh & Stone 4,080 Pittard & Son 3,490
 G. A. Hayes & Sons. 3,999 T. Weeks, Bedmin-
 A. J. Colborne 3,989 ste* 3,430
 Peerless Dennis & Bray & Slaughter 3,418
 Co. 3,984 T. C. Glynas 3,276

J. J. ETRIDGE, JR.
 SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write.

SHARNFORD.—For erecting a brick and concrete bridge, for the Leicestershire County Council. M. Perkins Pick, engineer, 6, Millstone-lane, Leicester:—
 T. Hickman £996 6 9 P. Bourke £333
 C. Chamberlain. 980 8 0 A. E. Palmer,
 W. Moss & Sons 966 0 0 Clenshaw & Sons,
 Stimpson & cester* 930
 Ltd. 946 0 0

SHERINGHAM.—For erection of cloakroom at Beer Approach, for the Sheringham Urban District Council. Mr. T. Hall Smith, Council Surveyor, Sheringham. Quantities by Surveyor:—
 A. Chapman £385 0 0 I. W. Neale £321
 H. Bollen 385 10 0 Birch & Sons,
 W. G. Porter 376 16 8 Sheringham* 320
 C. A. Sadler 364 6 9

[Surveyor's estimate, £350.]

STOKE-ON-TRENT.—For the remodelling of Linton Town Hall. J. H. Beckett, A.R.I.B.A., architect, Longton:—
 H. Willcock & Co. £8,550 Tompkinson &
 Grants 8,000 Bettelley, Longton* 7,879
 T. Godwin 7,879

WAREHAM.—For erection of boundary walls, Mr. W. W. Fookes, surveyor, Wareham:—
 G. Pond £275 0 0 Horwood Bros. £218
 J. Lairford 250 0 0 Parsons & Hay
 A. R. Marsh 235 10 0 ter, Wareham* 198
 [Surveyor's estimate, £200.]

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
 (Incorporating the Ham Hill Stone Co. and C. Trank & Co.
 The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
 London Agent:—Mr. E. A. Williams
 16, Craven-street, Strand.

Asphalte.—The Sossel and Metallic L. Asphalt Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and farm rooms, granaries, tum-rooms, and terraces. Asphalte Contractors to the Forth Bridge.

SPRAGUE & CO.'S, Ltd.,
 "INK-PHOTO" PROCESS,
 4 & 5, East Harding-street,
 Fetter-lane, E.C.

PILKINGTON & CO.

(ESTABLISHED 1838),
 DEPTFORD WHARF,
 190 & 192, CREEK ROAD, DEPTFORD, S.E.
 Telephone No.: New Cross 1102 (two lines).

Polonceau Asphalte
 Registered Trade Mark.

PATENT ASPHALTE AND FELT ROOFING
 ACID-RESISTING ASPHALTE.
 WHITE SILICA PAVEMENT
 SEYSSSEL ASPHALTE (Direct from the Mines)

"Drop Tray" Glazing

ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.

Copper & Zinc Roofing

The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address:
 "COURTEOUS, LONDON."

F. BRABY & CO., LTD.

Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.

Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Telephone:
 North 3032 (4 lines).

THE BUILDER

VOL. CL.—No. 3584.

OCTOBER 13, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
DECORATIVE MATERIALS	409	MONTHLY HISTORICAL REVIEW:—		LAW REPORTS	432
CHEOLOGY IN INDIA.....	410	THE COPTIC MONASTERIES OF THE		OBITUARY	432
THE STORY OF THE BRIDGE. IX. IN CONCLUSION	411	WADY-EL-NATRON, LOWER EGYPT (WITH		PATENTS	432
WITH ILLUSTRATIONS).....	412	ILLUSTRATIONS)	421	SOME RECENT SALES	432
WORK PLANNING AT BIRMINGHAM UNIVERSITY		THE MUTTRA MUSEUM, INDIA (WITH ILLUSTRATIONS)	424	PRICES CURRENT.....	434
WITH ILLUSTRATIONS).....	414	NOTES	426	TENDERS	434
GENERAL NEWS	417	THE BUILDING TRADE:—			
CORRESPONDENCE.....	417	PARTY WALLS SOME LEGAL POINTS.....	427		
TELECOMMUNICATION COLUMN.....	418	THE TRADE UNIONS AND STRIKE PAY	427		
EDUCATIONAL COUNCILS.....	418	PROPOSED INDUSTRIAL COUNCIL	428		
MEMORIAL SUMMARY.....	419	BUILDING TRADES' DISPUTE	428		
SETTINGS	419	LIVERPOOL MASTER BUILDERS	428		
COMPETITION NEWS	419	NORTHERN COUNTIES FEDERATION	428		
WORKS	419	GENERAL BUILDING NEWS.....	428		
FIFTY YEARS AGO.....	419	PROTECTED NEW BUILDINGS IN THE PROVINCES	429		
QUESTIONS TO ILLUSTRATIONS	420	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	430		

Illustrations.

- ST. PAUL'S CATHEDRAL, UGANDA. PROFESSOR BERESFORD PITE, F.R.I.B.A., ARCHITECT.
- "SARACENS," MAYFORD, SURREY. MR. W. F. UNSWORTH, F.R.I.B.A., ARCHITECT.
- THE MUTTRA MUSEUM: PROPOSED EXTENSION. MR. GORDON SANDERSON, ARCHITECT.
- "THE STORY OF THE BRIDGE"—IX.—THE PO BRIDGE AT TURIN.
- THE STONE BRIDGE OVER THE LOIRE AT ORLÉANS.



Photo by Alinari.

Ponte Rotto, Rome.

"The Story of the Bridge." (See page 412.)

DECORATIVE MATERIALS.

TRADITION rightly assigns to the various recognised types of architecture certain qualities of surface tone and texture. These originally developed in conjunction with the forms defining the characteristics of style. Thus a material capable of being treated with delicacy and intricate detail induced the worker to adopt these qualities in his work, while if it was not he sought his effects in another way.

Nowadays the process is in a great measure reversed; the architect determines his form of treatment first, and afterwards selects the most suitable material. The wide freedom of choice

now open to the designer has its dangers; we see too often the ill result of injudicious selection—a fault that could hardly arise when architecture owed its form of expression to the more limited range of materials available. Another mistake, less common than the use of inappropriate form, but still to be observed in modern work, is the adoption of a surface finish that either detracts from the proportionate value to be given to pure form, or may not display the essential quality of the material used. For example, a marble statue if given the maximum possible polish will show sharp lights and a lack of gradation rendering it impossible

to appreciate the delicate subtleties of form it should exhibit, while a slab of marble selected for its beauty of figure may demand a high degree of polish to secure its due effect. This problem occurs throughout the range of materials used for architectural purposes, and it will generally be found that if the finish bringing out to the utmost the beauties of the material is such as will detract from those of the design, then the material is not the one that should be employed.

Though, of course, all materials can be counted as having decorative value in their proper place, in our climate the interior is usually regarded as offering

opportunities for the employment of those more specifically decorative in their colours and texture. With us it is rare to find a complex scheme of varied materials used externally, and rarer still to find such a scheme successfully carried out.

Most of our finest buildings depend for their effect far more on form and proportion than on the materials used, and the selection of the latter, though, of course, requiring careful consideration, does not entail the series of infinite niceties of perception that may be demanded in the internal treatment of a building of any but the simplest character. It appears, therefore, preferable to devote our attention to those materials that are primarily used for decoration and not for construction, and to their use in internal work.

While it would be going too far to maintain that in constructive features one should not employ highly-decorative material, it may be taken as a general rule that the more emphatic the decorative quality the less suited is the material for work having a structural function. We get a well-recognised example of this in wood panelling, where the framing is of straight grained wood and the panels may be strongly figured.

If we bear this general principle in mind it will help us in deciding where and with what kind of material we shall attempt to enhance our architectural effects. To begin with, if we are aiming at expression by means of pure form, we shall avoid the use of anything distracting the attention from this. Our colouring and texture will be uniform throughout, whether wood, stone, or plaster. Pure form is, however, a severe taskmaster, and can only be acceptable to few minds highly trained in the perception of its subtleties. It is, in its demand on the intellect, almost too exalted for the companionship of everyday life, and therefore for the sake of easy and pleasant variety we bring in wood, metal, marble, glass, wallpaper, and the numerous materials that attract the eye by their qualities of colour and texture.

Taking first materials that are more or less uniform in colour, we see a very wide range in effect due to their characteristics of surface—the differences due to varying degrees of polish are too obvious to demand attention—but even with matt surfaces it is too frequently assumed that the colour appears uniform. Now, this is never the case. Take, for example, a room distempered or painted a perfectly uniform tint and examine it carefully; you will find that the room is a rough sort of camera-obscura, and that the objects outside influence the colour of the various portions of the wall. Thus a grass lawn will tint all the upper part of the walls green, while the lower portion may reflect the colour of a bluish sky; let a mass of white cloud pass across, and the wall opposite will whiten at once; while a fall of snow on the lawn will alter the colour scheme almost beyond recognition. So much for the uniform tint, which but for such influences as these would be almost unbearable.

Take your flatted wall and finish it with enamel, the response to the external influences quoted above is entirely changed; face with marble having but a trifling measure of translucency, and it

will be changed again; thus we have one set of variations to which we can now proceed to add those of colour—colour, either uniform, which will enter into combination with the influences previously enumerated, or colour in such materials as wood and marble, which is never uniform, and thus superimposes yet another set of effects.

Through these stages we pass to the adoption of figured materials, which can be employed either to produce a sort of informal pattern or to concentrate the interest at certain points much in the same way as one would use enrichment or sculpture. As a type of the former we may call to mind the marble wall linings of St. Mark's, opened out like a veneer to give wavy chevrons or vase-shaped outlines. The other alternative may be seen in the bosses or roundels frequently employed by the artists of the Cinquecento, while it forms the logical reason for the employment of richly-figured marbles in columns and pilasters, which one might have assumed should conform to the rule as regards the simplicity of structural forms. Indeed they do conform up to a certain point, for it will be recognised that, if the stability of a considerable mass depends on the column, too variegated a material gives an impression of weakness; it is only where the apparent need for support is comparatively slight that the column becomes an appropriate feature to attract the eye by the emphasis of colour patterns and contrasts. The wall of the basilica church rising sheer above its range of columns demands strength and simplicity in them, while the gilded scrolls and airy flowing lines of the baroque seem poised so lightly that the most variegated marble will carry them.

In quoting such examples as these let it not be imagined that we deem it feasible to lay down a series of rules by the application of which it is possible to decide the conditions appropriate for the use of this or that material; such decisions can only be safely formed after long cultivation of the artistic faculty. In this, as in most other artistic problems, a rule is only safe in the hands of one who is past needing it.

Notwithstanding this, we are entitled to add a few warnings on some of the pitfalls before the decorator in the handling of varied materials. It is safer to keep to as few kinds of material as possible, and to combine only those that suggest a certain harmony in their qualities. For instance, marble and smooth plaster can be combined by the skilled designer, or marble and glass mosaic, but marble and wood or mosaic and wood need most careful differentiation of function if they must be used together—any suggestion of wood supporting marble or mosaic is fatal. The wall linings and stalls of the great Gothic cathedrals show how wood-work can stand inside the actual structure; the wood panelling to a modern bank with marble ashlar above it gives quite a different impression. Still more objectionable is the combination of marble or other enduring material with such obviously ephemeral surface coverings as embossed papers or decorated linens.

It is not necessary that decoration should express the quality of permanence,

but its expression should be consistent throughout, and may range from the dignity of the purely structural, through all the grades of protective coverings, to such temporary forms as tapestry hangings and textile draperies.

ARCHÆOLOGY IN INDIA

AT a time when the protection of our ancient monuments at home has become a national question, and when we might have pointed out the procedure of the Government of India as a shining example to us in this respect, Lord Curzon informs us in a letter of protest to the *Times* that the excellent system instituted under his viceroyalty is proposed to be abandoned by the Indian Government for no other apparent reason than that of securing a trifling reduction in expenditure. In Lord Curzon's own words:—

"In 1901 the Secretary of State accepted the proposals which we had submitted to him in 1900. We did not seek to abolish the responsibility of the Local Governments for the execution of the local work of conservation and repair, because they were the legitimate and inevitable agents through whom this must be done. But we sought to encourage and assist them in the proper discharge of this duty by grants in aid, amounting to one lakh (6,666) a year, and by the appointment of a highly trained and competent archaeologist to exercise a general supervision over the archaeological work of the entire country, to keep in touch with the Provincial Governments, to give advice to their officers, and to secure the prosecution of a sound and consistent policy. We were most fortunate in procuring the services of Mr. J. H. Marshall, who had served a valuable apprenticeship in Greece and Crete and who brought to the discharge of his duties a scholarship and enthusiasm which have reanimated the entire sphere of Indian archaeology and a tact which has kept his relations with the Local Government free from the smallest symptom of friction.

Let me describe in a few sentences what he has assisted the Government of India to do. During the past ten years there is not a group of famous buildings or remains in India—I may almost say not a single structure—which has not been examined and taken in hand. Surveys, drawings, illustrations, and photographs have been made or remade of the monuments in all parts of India. Lists of remains have been collated, corrected, and published, and local museums have been started in every important centre of archaeological discovery of architecture.

And now it is proposed, not, of course, to bring all this beneficent work to a close—for no sane person could dream of such an outrage—but to deprive it of the trained supervision of the officer and the Department to whom it is mainly indebted for its success. It is proposed once more to revert to the Provincial system which has been tried and found wanting.

In case it should be argued that so excellent has been the work of Mr. Marshall and his staff that India can now afford to dispense with their services, and that the Local Governments, redeemed from their former apathy, can safely be left to act alone, I answer that with every allowance for the changed spirit that prevails, and for the zeal of individual Governors, this cannot be attempted without certain disaster. In the first place, not one quarter of the work is yet done. Secondly, Local Governments have not got the men upon their establishment (it is not their fault) even if they have the zeal and the funds. The archaeologist is not born, but made; and he can only be made in India, not by the experience of building hospitals or bridges, or even by studying Sanscrit and deciphering inscriptions, but by careful education in the principles of conservation and research."

As an example of the type of museum referred to by Lord Curzon, we give this week an illustration of an article on the Museum at Muttra in the N.W. Provinces.

of greater importance than collections, as these is the proper supervision of great architectural remains representing so many epochs and so many civilisations. It is almost impossible adequately to realise the enormous number of important and representative buildings that are scattered throughout India and their exceptional value to the artist and the student. Surely it would be an eternal disgrace to us if having once made an effort to put these under intelligent supervision, we should take the retrograde step now contemplated.

Every architect must have realised the extraordinary impression that the architecture of India has made on all who have studied it. Apart from more recent researches, many of which have been summarised in our columns, we have only to run through the pages of Ruskin to grasp the importance of these works in the history of the world's architecture; how one influence has succeeded another from the days of the Pagan incursion onwards, its story being itself a microcosm of the influence of racial interactions on the arts. Now that we are beginning to realise the value of such studies, no less for the architect than for the general student, to find such an authoritative body as the Indian Government displaying a disregard of the necessity for maintaining an adequate system of preservation and record comes as a severe shock, and we can only hope that the protests of the various artistic and archaeological societies now being sympathetically voiced will cause them to reconsider such an ill-advised decision.

NOTES.

The British School at Rome. An architectural journal must not omit to congratulate the British School at Rome—our widely appreciated Consulate of the Arts and classic culture—which commences its second decade this month. Architects especially are aware of the value of the institution, and are likely to increase their regard when those who are members of the recent Congress of Architects, having countered the learning of Dr. Ashby, the director and admittedly the first of living Roman topographers, and the charm of Mrs. Arthur Strong, return and disseminate their reports. The School has been carried on with pitifully inadequate financial support and official encouragement, as regards the home Government, at any rate; for successive Ambassadors and influential people have by their interest shown an attitude of helpfulness in marked contrast to the ineffective outcome of Whitehall. Many architectural students have made it their centre while in Rome and Italy. We know of two who are working there this year, one on the restoration of the Temple of Fortuna at Aletrina, and the other, with the kind assistance of Commendatore Boni, on the Arch of Titus, besides the desultory men who stay for a short time only. One of the great advantages of becoming a student proper of the School is that one may obtain the so difficult *permesso* for the museums and galleries, a freedom which makes a distinctly appreciable difference. The problem of

the interminable and increasing demand for *lira* at the door of every place of interest to students of art is becoming acute. Our Education Office is at work upon it, and we hope the outcome will be satisfactory and soon. The School is not yet residential. But the matter is being taken up, and we shall be surprised if the deliberations of the Royal Academy and the Royal Institute bear no fruit.

Lake Dwellings.

PROFESSOR BOYD DAWKINS in a letter to the *Times* reminds us of the excellent opportunity that the recent dry summer affords us for the discovery and investigation of our lake villages. The water in many of the lakes is now considerably below the normal level, and a careful survey might be productive of valuable results. Professor Dawkins mentions that Munro records 113 lake settlements in Scotland and more than 200 in Ireland, some of the latter having been occupied as late as the XVIIIth century. Only eight, however, have been located in England and Wales, possibly because they have not been looked for. We might suggest that the conditions make research much more difficult in this case, as most of our lake dwellings were probably in flooded marshland which has since been drained and cultivated. Instead, therefore, of merely tracking along the borders of still existing lakes it means probing and excavating in likely positions. Probably there are many sites that will never be discovered, but where a clue is found and excavations are undertaken the results are likely to afford an ample reward to the investigators. The finds at Glastonbury and Mere show that the industrial arts of spinning, weaving, pottery, and glass-making, as well as metal-working in bronze and iron, were well known, while many other details of the life of this period can be realised.

Variations in Quantities.

THE Portsmouth Board of Guardians are evidently perturbed in their minds with reference to the quantities for an extension to the local infirmary. So far as we are able to judge from a report of a recent meeting to consider the question, they appear to have discovered certain minor discrepancies between the contract drawings and those submitted to the Local Government Board, copies of which are held by the Guardians. For some reason which is not explained, this fact seems to have raised doubts as to the quantities. No one appears to know from which set of plans they were taken, though no one brought forward any facts and made any definite suggestion to explain why it was thought that the ordinary procedure had been departed from. The mere fact that discrepancies existed seems to have aroused suspicion. We are not acquainted with the facts or with the exact procedure adopted in this case with regard to the plans for the Local Government Board, but every architect who is worth his salt endeavours to perfect his design in the interests of his clients up to the last moment, with the result that such discrepancies are not unusual, and where the Board is not supplied with facsimile copies of the

contract drawings they are inevitable. Unless the Guardians have more definite information than appears in the report of their meeting it may not be found necessary to call in another quantity surveyor just to convince them that it is a case of much ado about nothing.

The Irish Railway Strike.

THE Amalgamated Society of Railway Servants concluded their Conference by passing a resolution, which, although drawn in somewhat ambiguous terms, appears to countenance the action of the strikers on the Irish railways, in that it "expresses regret that the railwaymen on the Great North of Ireland and the Midland Great Western failed to respond to the call of the executive committee, which was given after many urgent requests on the part of those already on strike, and desires to point out that such inaction on their part was not only responsible for the failure of the men to obtain just terms of settlement, but has resulted in numbers of loyal members being victimised." In view of the claims of this Society to be recognised as an official medium between the railway companies and their servants, it may be well to recall what were the demands put forward by the "loyal members." Their demands were that they should not be called upon to handle goods legally offered to the railway companies, and which the companies were under legal compulsion to forward, and those demands were based upon the fact that some trade dispute was in existence with the firms which offered the goods. The "just terms of settlement" apparently were that all the strikers should be reinstated over the heads of men who had remained faithful to the companies. Further comment on this matter appears superfluous.

Metropolitan Water Supply.

AFTER a time of almost unprecedented drought it is certainly satisfactory to find that the Metropolitan Water Board can report favourably at any rate on the quantity of water available, especially when not only have the sources of supply been necessarily restricted, but the consumption has also increased. At the recent meeting of the Board it was stated that in 1910, during the week of maximum demand, the average daily supply was 261,333,000 gallons, or 37 gallons per head. This year the week of maximum supply averaged daily 300,094,857 gallons, or 42.1 per head. The quality is not so satisfactory, and shows the necessity of the policy of supplying increased storage facilities, which has been adopted by the Board, and which certainly must be pursued until the quality can be maintained, even under such exceptional circumstances as have prevailed this year.

The Infirmary Site, Manchester.

THE battle of the Infirmary site is not yet decided. Since the renewed attack of the advocates for a new exchange in this position the matter has been hotly debated by the Manchester City Council



[Photo, by Alinari.]

Bridge at Gubbio, Umbria.

at three successive meetings, and on Wednesday, by sixty-three votes to fifty-five, the question was referred to a special committee. Possibly the alleged unsatisfactory result of the Library and Art Gallery competition may have affected the voting. While the last thing we should desire would be to attempt to prejudge the assessor's award, it seems clear, from a letter which will be found in our Correspondence column, that some dissatisfaction is felt in regard to the interpretation of an important and binding condition. We are not prepared to endorse our correspondent's views at the present moment, as in fairness to the assessor and competitors our expression of opinion should be reserved till the award is made public, but the question is of so much importance that we feel bound to recognise the desirability of a free discussion of the subject.

THE STORY OF THE BRIDGE.

BY WALTER SHAW SPARROW.

IX.—IN CONCLUSION.

In this set of brief articles on a very big subject my aim has been a simple one, namely, to seek out a few of the most general principles and most useful historic facts which ought to regulate the study of bridges, and to keep away from the routine information given in technical manuals and in encyclopædias. My second purpose was to try to attract the newspaper critics, for it is with their help alone that great questions of art can be brought prominently to the notice of the British public.

When we remember that laymen in this country are the chief patrons of art in all its phases we must own at once that building and architecture belong to the public education of the people, and ought to be so considered by all who write about them; particularly in view of the fact that architecture and buildings are slighted and neglected by all popular newspapers. Sports and games, books, plays, music-halls, even the hobby of "taking" amateur photographs, are all dealt with by the Press in a systematic and thorough manner week by week all the year round; while new houses and new bridges, and the vital national interests represented in buildings of every kind, are passed by in silence, if not with contempt. The reason is one of base trade. Newspapers earn more from the advertisements of King Jerry than they could ever hope to earn by respecting design as an art. While jerry-syndicates are willing to pay 300*l.* for a full-page advertisement in a popular newspaper, no architect and no real craftsman can expect the daily Press to notice good work.

We must teach the public to defend its own interests. That is the only cure. Not one layman in twenty knows that all advertisements of jerryed craftsmanship belong to the cost of production, and not one layman in twenty can read a book on architecture, because very few writers on that subject take pains to be interesting. They appeal to architects, forgetting the great patron of architecture—the British public. I could name many a book on buildings that requires from its readers as much patience and as much pluck as climbers need on a cold and misty day in the Swiss mountains.

When I began to collect photographs of bridges I received volunteer advice from a good many friends, and all of it ran on the same note:—"Don't forget to be very technical in your research. Keep always in mind the practising engineer and the office architect." Such was the burden of the

warnings that came to me unsolicited. As any man with common sense would study the history of bridges from any standpoint except that of social utility. The technique of bridges are to be found in a thousand books and more; you can pick and choose; you can become a mental carpenter in bridge-building, or a mason learned in historical methods, or a theorist on the modern science of engineering. The grammar of construction has a great many teachers old and new. But if you set your heart on the humanity of bridges, their association with the life of succeeding generations, your guide must be your own research, and it will lead you to larger questions of technique than those which are dealt with in the grammar of bridge-building.

It is pretty plain that an inquiry of this kind needs to be fixed by reference to given sets of social circumstances in their relation to given principles that the evolution of society keeps in vogue. There are some common rules as to what is right and best in bridge-building, and their application is not a matter of difficulty if we find their bearing on actual conditions in a definite kind of emergency. For example, it is accepted universally as a fact that ways of communication in a country, whether railways or high roads, are to our industrial civilisation what arteries and veins have been to the human body, the conduits of strength, energy, life; they make development a natural process, half-automatic in action; and when they decay and perish a nation suffers paralysis, locally or entirely. But, as human nature renews herself in her offspring, so in the arterial system of a country, roads and bridges and railways can be made permanent by constant restoration. Only, of course, much forethought must be shown, because we know that the dire crises of war come to all nations, and it is during those crises that bridges and roads are most urgently essential. It is a commanding law

Therefore, that roads and bridges, like the navy and its battleships, must be as fit to counter war as science and art can make them. This principle, rightly understood, is not many thousands of facts in technique, it is the essence of technical method in our practical attitude to bridge-building. If a bridge is more vulnerable than it ought to be, and if it could not easily be mended for traffic after being hit by a shell or badly injured by explosives during a strike; if, in short, it is just a trade experiment in scientific engineering, we need not concern ourselves with its mechanical genius, for such bridges are like the brilliant theories that flare around false premises. The true test of a bridge is the confidence that we can have in it when the country stands most in need of its services. No bridge can be made vulnerable; it is on land what a battleship on the sea, essential alike to peace and war; and it should give the maximum amount of safety that sciences can devise at any period in their co-ordinated evolution. That one principle is a practical guide and an interpreter of what is best to study in the history of bridges. It helps us not only to put order into our criticisms, but to catalogue the accumulations of knowledge, and to see how the techniques of each new type of bridge were influenced by ruling methods of attack and of defence. Nor is it a slight benefit to know what facts in history are worth examination and remembering. The great deal in modern bridges is theoretical, and the interesting and useful thing is, as an engineer said, to know what is needed for the proof of a point, what is wanting in a theory; how a theory hangs together, and what will follow if it be admitted.

Who knows what bridges in reinforced cement may be worth? What answer will we give to that question even from the standpoint of peace and trade? Austria has invested great confidence in cement bridges, and France has made, and is making, many experiments along the same uncertain lines. You will find much to interest you in the *Manuel Théorique et Pratique du Constructeur en Ciment Armé*, by MM. N. D. de Bédesco and V. Forestier.

For the rest, I hope that the illustrations in this set of articles will be useful to many students. They have been chosen with

great care from my collection, and each represents a type. To collect such photographs from all parts of the world is not an easy task; it means much research and it takes a long time. British bridges are not difficult to get at, because we know where they are, but the foreign examples are troublesome. Students will do well to fix their attention on two countries in particular, Spain and France, for the following good reasons:—Spain is very rich in bridges, primitive, Roman, mediæval, and modern; and from the earliest times to the present, moreover, bridge-builders have had the same difficult problems to solve there. Rivers that run dry in summer become raging torrents in winter after storms; the country itself, geographically, presents many and varied problems, from deep and wide valleys to narrow mountain gorges; and we must remember also that social life and trade life have changed less in Spain than elsewhere in Europe, so that there has been as a rule less interference with the historic character of old bridges. Then, as to the best means of getting photographs, Lacoste, of Madrid, has many, and Mansell, of Oxford-street, will obtain from him a general selection from which you can make your choice.

France, too, is very fortunate in having out of doors—and very often in daily use—many bridges dating from remote times. She has been lucky also in having a long record in the administration of her *Ponts et Chaussées*. A great many mistakes have been made since and during the times of Perronet, but these mistakes have some French wit and some French vivacity. Indeed, a book on bridges in France would give, in a simple and direct way, such a history of their evolution as would be most convenient for experts to verify during a long summer's holiday.

I have illustrated and mentioned some of the most typical French bridges, but no harm will be done if I give other very important examples. Here is a list:—

Roman Period.—(1) Pont de Sommières, over the Vidourle, Gard; this will be studied by M. de Dartein in his *Ponts Français Antérieurs au Dix-huitième Siècle*. (2) Ruins of a Roman bridge at Alzet over the Aude. (3) Remains of a Roman aqueduct at Fréjus, Var. (4) Remains of a Roman aqueduct at Luynes, Indre-et-Loire.

(5) Other remains over the Rhône at Lyon. (6) I do not know whether the noble little fortified bridge at St. Chamas still exists; it was there about thirty years ago, and it is a monument to be studied with care. Illustrations do exist and historical documents also.

Gothic Period.—(1) Pont d'Orthez, on the Gave de Pau; fortified. (2) Pont d'Espalion, on the Lot. (3) Bridge over the Orb at Béziers (*Hérault*). (4) Pont St. Martial at Limoges across the Vienne; repaired and remodelled. (5) At Nérac, Lot-et-Garonne, over the Baise. (6) Bridge at Saint-Germain across the Vienne; XIVth century. (7) Another bridge over the Vienne at Saint-Junien, dating from the XIIIth and XIVth centuries. (8) Bridge over the Salat et Saint-Lizier (*Ariège*); restored and remodelled. (9) Fortified bridge at Sanverre, Basses-Pyrénées, on the Gave d'Oloron; XIIIth century. (10) Bridge at Thouars, on the Thouet. (11) On the Rhône at Viviers (*Ardèche*). (12) On the Allier at Voût-Chilac.

Renaissance.—(1) Pont Henri IV, on the Vienne at Châtellerauld. (2) Pont Neuf, on the Seine at Paris; much altered. (3) Stone bridge at Toulouse across the Garonne. (4) Pont Marie, Paris. (5) Pont Saint-Michel, Paris.

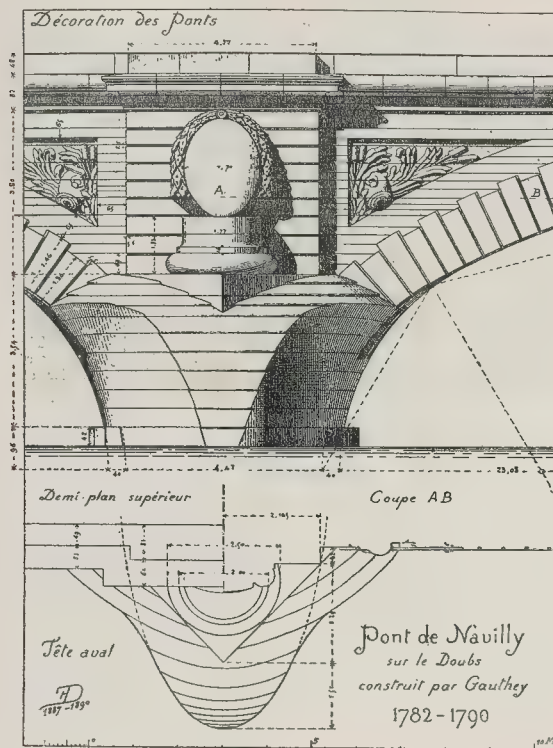
XVIIIth Century.—(1) Pont Royal, Paris. (2) Pont de l'Isle, near Bonneval. (3) Pont de Blois. (4) Pont des Belles Fontaines, near Juvisy. (5) Pont de Tours. (6) Pont de Dizy, near Epernay. (7) Pont de Neuilly. (8) Pont Fouchard, near Saumur. (9) Pont de Pont-Sainte-Maxence. (10) Pont de Brunoy, on the Yères. (11) Pont de la Concorde, Paris. (12) Pont de Nemours, on the Laing, and Pont de Saint-Dié, on the Meurthe.

Turning now from Central France to Languedoc, we get many bridges from the XVIIIth century:—(1) Pont d'Ornaisons. (2) Aqueduc de Montpellier. (3) Pont des Minimes, Toulouse. (4) Pont de Carbonne. (5) Pont de Mazères. (6) Pont de Rieucros. (7) Pont d'Homs, on the Aude. (8) Pont du Somail. (9) Pont de Villeneuve-lez-Magnelonne. (10) Pont de Lavaur; very interesting to students. (11) Pont de Mirepoix. (12) Pont de Gignac; to be studied side by side with the bridges of Lavaur and Vizille. (13) Pont de Montferrier.



Belle Alliance Bridge, Berlin.

[Photo. by Frith.]



Bridge at Navilly on the Doubs. From a Drawing by M. F. de Darstein.

(From *l'Architecture*.)

Bourgogne, XVIIIth Century.—(1) Pont de Cousin, near Avallon. (2) Pont de la Barque, near Louhans. (3) Pont des Echavannes at Cha'lon. (4) Pont de Neuville-sur-Ain. (5) Stone bridge, near Auxerre. (6) Pont de Guernon. (7) Pont de Navilly. (8) Pont de Chalon.

The work done during the XIXth century cannot be summed up in a short list; it is too various in types. But attention should be given to the viaduct of Chaumont and the great viaduct of Roquetavou, which dates from 1845. The design of Belgrand can be studied in the bridge aqueduct of Montevau, while the viaduct of the Pont-du-Jour, at Auteuil, brings us in touch with the collaboration of Bassompierre and Villiers du Terrage. Useful hints can be got from Larousse, and M. Béranger, the Paris publisher, is a sure guide through the maze of metal bridges.

The number of important bridges in France was 1,982 in 1873. Of these 861 were built before the XIXth century, sixty-four during the First Empire, 180 during the Restoration, 580 during the reign of Louis Philippe, and 297 since 1848. Nine of the 1,982 bridges were of iron; fourteen of wood; twenty in mixed materials, stone, iron, and wood; sixty-seven in masonry and wood; and 854 in stone. No fewer than 1,067 were on national roads, and 831 on departmental highways; only eighteen belonged to the strategical lines of communication. The total length of all these bridges was estimated at 106 kilometres, and their total cost at 286,507,761 francs. Last of all, here is the cost of eleven very notable French bridges:—

1. Bordeaux, 501 metres; 6,850,000 francs.
2. Dordogne, at Cubzac, 545 metres; 2,200,000 francs.
3. Saint-Esprit, on the Rhône, 738 metres; 4,500,000 francs.

4. Toulouse, on the Garonne; 2,700,000 francs.
5. Libourne, on the Dordogne; 4,236,248 francs.
6. Tours, on the Loire, 434 metres; 4,224,639 francs.
7. Pont de la Guillotière, Lyon, 263 metres; 2,500,000 francs.
8. Pont de Brest; 2,800,000 francs.
9. Pont Neuf, Paris, 231 metres; 4,000,000 francs.
10. Pont d'Iéna, Paris; 6,135,105 francs.
11. Pont de Roanne, 232 metres; 6,438,561 francs.

If we knew what the bridges of Europe now represent in their total money value we should be astonished beyond measure that an age of trade that hovers continually on the brink of war has not had enough common sense to make them as secure as possible from the perils of strikes and artillery. I am the first to draw public attention to this fact since Perronet gave his warning at the end of the XVIIIth century.

TOWN PLANNING AT BIRMINGHAM UNIVERSITY.*

"In taking up this subject it seems appropriate to tell you shortly what the scope and character of town planning appear to me to be, and the kind of qualification desirable for those seeking to practise the art, to explain the method of teaching which it is proposed to adopt, and finally to show you something of the results of town planning as practised in other countries and at various periods, and so try to give you a bird's-eye view, at it were, of that region which it will be our purpose to explore during the coming sessions.

During the last century the town has become a unit of increasing importance in the national life; and one of the greatest tasks which faces us to-day is to transform the amorphous aggregations of population, which by courtesy we call towns, into genuine communities, the expression of whose highly organised social life shall be worthy of the honourable title of city. We need to bring into our city life the same guiding oversight and direction in developing the opportunities which its position affords, the same correlation of all the different parts, which are found so essential for a great modern industrial concern. Town planning is simply the medium through which this organising movement finds its practical expression; the means which will enable each community to foster the growth and efficiency of those industries upon which its prosperity depends, by providing for their expansion in those districts where they will have the greatest convenience of rail and water carriage, power, heat, and light, in close touch with the many subsidiary requirements which facilitate their work. Through town planning the community can provide for the most convenient communication by rail, road, or car between the industrial regions, the great centres of wholesale and retail exchange and the various residential districts. Through its means the most healthy and attractive areas can be reserved for residential purposes, and their proper development, having regard to health, convenience, and amenity, can be secured; through its agency also provision for recreation can be made by the proper distribution of playgrounds, parks, and open spaces.

* From the inaugural lecture on "Civic Design," by Mr. Raymond Unwin, given on October 6 in the Mason College Building.



Ponte della Pietra, Verona.

Photo. by Bridg.

It is difficult to exaggerate the direct many, increased efficiency, and improved opportunities of life which the organisation may lead to, and the impetus which thereby be given to the development of a race of healthy and energetic citizens. Then, very meagrely stated, is what I have to be the scope of town planning; you see it is essentially a synthetic art. It is in assembling and marshalling many, co-ordinating many activities for their mutual benefit, and combining the individualities of their expression so as to produce a happy, convenient, and a beautiful city. Town planning is not work which we should characterise as highly technical, in the sense in which we should apply that term to the building of ships and bridges, or to the determining beforehand of the acoustic properties of a great hall, for example. The knowledge required is extensive rather than intensive, the difficulty of the work is due, not to a high degree of scientific attainment and technical skill necessary for the solution of problems, but to the number of the subjects which must be understood, the breadth of sympathy which must be developed to enable the town planner to appreciate the various phases of life which underlie the activities of the city, and to the range of imagination required to embody the material suggestions of these activities in one synthetic design that will at once conduce to utmost efficiency and provide for a high degree of beauty as the result of their groupings. In teaching town planning a somewhat wide field must therefore be covered, perhaps wider at the present time, because of the bearing of other subjects upon town planning has not yet become part of the ordinary teaching in the different sciences and arts contributing to it.

Essential Qualifications of Promoters.

It is described as a co-operative art; it can be successfully carried out on a large scale only by the cordial co-operation of many persons. The architect, the surveyor, the engineer, the planner, the economist, the sociologist, and



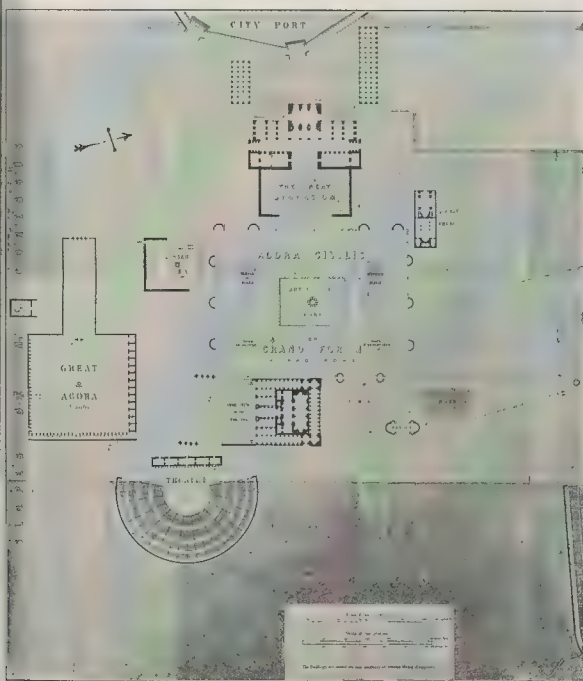
View of the City of Ephesus from Mount Coressus.

(By E. Falkener, 1859.)

even the antiquarian must all contribute their experience and their skill. Some of them must decide absolutely the limits within which the design must be worked out, and each of them in future must understand the bearing of his own branch upon town planning, as part of his equipment. It is hoped that this course of lectures may be helpful to many who will be brought in touch with the work in this way, but who may never intend actually themselves to design town plans. Some, however, will in this narrower sense seek to become town planners. What should be the qualifications of such a one? He cannot expect to become an expert in all the subjects touched upon, but he must at least know enough of each to be able to co-operate intelligently with those who are experts, and to assign to the contribution of each its proper

place in the whole. He will not, for example, be a doctor, but he must understand the conditions of health in home and factory, and must appreciate the importance of space, fresh air, and sunlight; he need not be a political economist, but he must have enough knowledge of the economics of ground rent and house rent to be able to determine the limits of air space in the dwelling and garden space around it which can be provided in a practicable scheme. He need not be a tramway engineer or a road surveyor, but when the expert in one branch asks that a road shall be straight, for the cheaper and simpler installing of his lines and conduits, and he of the other that it shall be curved to secure a more even gradient for the surface, the town planner must know enough to appreciate the value of both requirements, and to weigh them, possibly, against the request of the antiquarian that some ancient building on the line of the road shall be spared.

You will think, perhaps, that I am drawing a speaking likeness of the Jack-of-all-trades, so let me hasten to add that the successful town planner must be a past-master in the art of design, the art of combining in the proper proportion many different parts, so as to bring them into that harmonious relation which creates of them one organic whole. I have ventured to call town planning an art, because it seems to me that in essence it consists in expressing in a beautiful outward form the life of the community. By the greatest good fortune it has happened in England that town planning has actually developed from an attempt to improve the homes and lives of the individual members of the community. I wish to emphasise this point because in some other countries, notably in America, town planning has come about from other considerations. If we look back a few years, to about the time when Bournville was founded, we shall find that the movement began with an effort to reduce overcrowding, and to improve the individual dwellings of the people; that the work extended to the surroundings of dwellings, to meet the need for gardens, playgrounds, and open spaces. From this those who were working at the problem went on to try and group these improved dwellings into streets, which should themselves be pleasant places, and so to arrange these streets that they might form attractive villages, such as Mr. Cadbury created at Bournville. Finally, the necessity became evident for extending this work, for fitting these villages into the whole scheme of development, and for bringing the same improvement to bear upon the other branches of town life. Only so could these new residential areas be brought into proper relation with the industries, the public buildings, and the open spaces. Thus has town planning in England developed out of the actual needs and life of the people. The essential importance of maintaining this close touch between the life and its expression I cannot too strongly emphasise, particularly as there is a general idea that when we speak of art in connexion with such a subject we mean the



Plan of the City Centre, Ephesus.

(By E. Falkener.)

imposition upon the community of some pre-conceived pattern or design, spun out of the imagination of some detached artist into which the life of the community is to be cramped, regardless of its convenience, its comfort, or its health.

It cannot be denied that examples of town planning may be found that have been carried out on these lines, but it seems to me that it is just because town planning should be, not the work of a dictator foisting upon the public his own pet scheme, but the work of one, who, by his wide sympathy and imagination, shall become the medium, as it were, through which all the various needs of the civic community can find expression and co-ordination, that one is justified in calling it an art.

While, therefore, in my own mind, I cannot separate that side of town planning which consists in providing for the practical needs of the community, from what seems to me equally natural, namely, the beautiful form which their expression should take, it is only as the definite outgrowth of the practical, it is only after those different needs have been thoroughly considered and provided for, that it seems to me possible to bring to bear upon the form of their expression that power of co-ordination, that faculty of design, which will lay the foundation for beauty in the completed work.

Relative Factors in Design.

In teaching our subject, therefore, we shall begin with some study of the different human requirements that a town should satisfy, and inquire into the best practical means of providing for them, seeking to understand the different units of our design before we attempt to put them together. We shall study the individual home, the various kinds of house adapted to the life of different members of the community, the disposition of its different rooms and offices in relation to the street and to the aspect of its frontage, to secure the most healthy and convenient dwelling within the strict limits of economy. We shall study the question of gardens attached to the house, the size of plot which is desirable, and the relation between this, which fixes the number of houses to the acre, and the cost of land development, tracing the effect upon the house rent.

We shall take the workshop and factory, the market and commercial building, the school, church, and public buildings, and consider their requirements in the same way. We shall study the different kinds of open spaces, such as the playground, the park, and the reserved area of wild country, and their relation to the population. We shall inquire into the varying amounts of traffic developed in different circumstances, and the width and kind of road desirable to meet each case.

together with the relative cost of these roads and the effect of their use upon the rent of adjacent land. Only when we have learned something of these component parts shall we be ready to combine them in the planning of sites. At this stage we must take account of the influence which the nature of the site must exercise on our plan; we must survey its surface, take levels, that we may record its undulations by contour maps or models, and note its natural features. Having done this, we must study the spacing of the roads upon its surface, their relation to the contours, and their lines, whether straight or curved.

Finally, the architectural considerations governing the grouping of the buildings upon the site, and the reaction of these upon the exact form of the plan must be studied.

Thus we shall be prepared to undertake simple site planning, to bring together units which we have studied, and to dispose them in suitable designs for limited sites. We shall then take up the wider field of the relation of the site plan to the town plan; we shall find that we must study the social and economic conditions of the whole population much as we have studied those of the individual units. We shall realise how necessary a preliminary to town planning on a large scale is the "civic survey," as Professor Geddes has well called the study. Such subjects as the varying density of population, the past development of the city, its present tendencies of growth, its existing railway and other traffic facilities, the distribution of water supply, drainage, and other services, must all be understood before we can wisely attempt to plan the town extension. We shall find that there already exists, or needs creating, some civic centre, or perhaps minor centres, where the public or semi-public buildings can be grouped in convenient relation to one another; the position of these and the configuration of the ground will together greatly influence the main framework of roads. We shall eventually come to see how the practical requirements of the city, the relation and proportion between its central spaces, its main highways, its minor centres, and its subsidiary roads, leading naturally to emphasis in some parts and subordination in others, harmonise entirely with the principles of design, and how the proper provision for and expression of the varying requirements, so far from hampering the designer, will help by the opportunities afforded towards the creation of an orderly and beautiful result. This does not mean, however, that no care is to be taken to produce a beautiful result. Beauty is, indeed, intimately associated with use, with fitness for purpose and function. But it is not the same thing. Use and fitness dictate certain lines of development, but usually they are not exact lines, rather they

are limits of deviation. It seems to me that it is the duty of the town planner, in so far as he is an artist, to learn those limits, seldom to transgress them, and then only to attain results overwhelmingly worth while. So long as we approach our work in this spirit, no study of the beauty of style will be too thorough, no training of our imagination and taste too severe, that will teach to judge the right relation between mass and voids or will help us to acquire a feeling for proportion which is the qualification for fine design. It will indeed be a great accomplishment if we can satisfy the practical requirements of our cities by town planning, but it is quite unnatural for man to be content with this. Every town planner should look forward to acquiring power of imagination, which will enable him by the spacious and orderly disposition of the parts upon the level plain, or by the placing of them up in masses on the hillside, to express something of the dignity of corporate life which it is his highest function to reveal.

Need for Co-operation.

It will be sufficiently evident that such results can only come about by the cordial co-operation of all those engaged in city development, supported and encouraged by intelligent appreciation of the citizens; for this reason it is hoped that this lecture may be of use to many who will not attempt the practice of town planning themselves, but to the architect, that he may realise the dependence on the engineer and surveyor that he may in the design of his building consider the total effect of the town as a whole, that the individual promises of his own building; to the engineer, that he may realise the intimate connexion between all his work and the activities and life of the people, and that he may appreciate the importance and function of the designer to the final perfection of beautiful form; to the student of social science, that he may realise how the life of the community and the form of its city act and react upon the other, and how, through the power given by the Town Planning Act, which forms one of the later portions of our statute book, so much may be done, not only to express, but to foster the social life of the community.

As I hope the town planning school will be by putting a new point of view; contribute in some slight extent to the interest of work in the schools of allied departments, so I am sure it will derive most valuable help from co-operation which may be practised. Contact with the school of social studies will give us new insight into the problems of the practical solution of which town planning is concerned; and it is possible with their aid that we may be able to make some civilities of parts of this city which will not educate ourselves, but may be of some use to those who have undertaken the great task of making a plan for the whole of an important city, for I am sure this is the towards which they have made a beginning.

Association with the department of engineering under the inspiring leadership of Professor Dixon, in whose department a school has been placed, will not only keep us practical, but will, I hope, give us expert guidance on many matters connected with the surveying and engineering side of town planning. I am already fascinated by the new possibilities which Professor Dixon's system of photographic survey seems to open up for attaining a thorough grasp of the physical features of the site, a matter of the greatest importance in the higher fields of town planning.

There being in this University no department of architecture with which perhaps the subject of civic design and town planning would naturally be associated, we could, I think, have had better fortune than to put under the guidance of Professor Dixon.

Mr. Unwin illustrated and emphasised many points by showing on the screens some results already attained by town planning.

FORTHCOMING SALES.

Next Wednesday, October 18, will be at the Auction Mart, by Messrs. Edwin Bousfield, Burnetts, & Baddeley, the building site now occupied by the New Synagogue, Great St. Helens; also adjoining land of the same day will be put up for sale freehold property at Harrow Weald, owned by the Middlesex Duck Plant.



View at Hampstead Garden Suburb.

Photo. by T. R. Rodger.

GENERAL NEWS.

Professional Announcement.

Messrs. Raphael Tuck & Sons have commissioned Mr. Bernard F. Gribble to design Christmas cards for their Majesties King George V. and the German Emperor.

Rebuilding in Regent-street.

Our issue of September 15 we illustrated Henry Tanner's designs for the rebuilding of Oxford-circus—south-west bow—and out-street to the corner of Princes-street, in the present Crown leases fall in. The erection has been begun of Nos. 114-120, the east side of the street, for Messrs. J. Nicoll & Co.'s new premises after Mr. Henry Tanner's designs. The old shop premises stand in one of the blocks designed by Nash.

King Edward VII. Memorial, India.

The bust of King Edward VII., to be sculpted by Mr. A. Bruce-Joy, will be placed by the Executive Committee of the Memorial Fund, Punjab, in the Mayo Hospital, whose name forms part of the Memorial scheme.

Statue of King Edward VII., Manchester.

Mr. John Cassidy has been appointed the sculptor of the Manchester memorial to the King, which will consist of a colossal bronze figure, in Garter robes, with sceptre and orb, upon a granite pedestal 30 ft. high, overlooking Piccadilly.

St. George's Church, Leicester.

The fire that broke out in the night of October 5 at Messrs. R. Rowley & Co.'s premises in Queen-street, consumed the roof of St. George's Church, and eventually destroyed all but the spire and walls of the fabric. The church was built in St. Margaret's parish by the Parliamentary Commissioners, at a cost of 18,000*l.*, from designs, in the later English style, of Parsons.

The Widening of Euston-road.

The General Purposes Committee of the St. Pancras Borough Council are to recommend the Council to refuse its statutory consent to the proposal of the London County Council to construct a new tramway along the Euston-road link up the existing tramways with those King's Cross pending a satisfactory decision regarding to the widening of Euston-road throughout its entire length.

The Kursaal Site, Margate.

The freehold of the Margate Kursaal site, together with the partly-erected buildings, pier, and the sea wall and promenade, are to be sold on Monday, the 16th inst., by Messrs. Reeve & Son, at the White Hart Hotel, Margate. The property has a direct sea frontage of about 600 ft. The lot will include a freehold site, situate in Cold Harbour, having a sea frontage of about 150 ft. adjoining the above.

Manufacturers and Strikes.

It is stated that the circular of the Council of the London Waterside Manufacturers' Association with respect to the proposed general organisation of London manufacturers for defensive purposes is meeting with a wide response, and that a list of those firms who prepared to join the new combination will be published shortly.

Westcliff Esplanade.

It is probable that the Western Esplanade will be completed during the winter months at Westcliff-on-Sea.

Labourers' Cottages, Newtownards.

In view of the need for additional cottages in the Newtownards district, the Rural Council are urging the Local Government Board to hold an inquiry on an early occasion so that loan may be arranged.

Royal Archaeological Institute: Visit to Westminster Abbey.

An autumn meeting of this Institute will be held at Westminster Abbey on Friday, October 20, under the direction of Mr. V. H. St. John Hope, to complete the examination of the medieval monuments and effigies. Admission will be by ticket, and tickets will be issued to members strictly in order of application. Members desirous of attending are requested to apply to the Secretary, G. D. Hardinge-Tyler, Secretary, 3, Bloomsbury-square, W.C., at once, enclosing a postal order for 2s. 6d.

The Model Engineer Exhibition.

This Exhibition is being held at the Royal Horticultural Hall, Westminster, S.W., from October 13-21. It is the third of its kind, and demonstrates the recent progress which has been made in model or small-power engineering, both as a hobby and as a useful factor in technical education. A model railway, 76 ft. long, will be shown, on which steam and electric locomotives will be running. Some of the models will pull one or more passengers. An engineering workshop, fully equipped with lathes and light machine tools, is arranged, in which daily demonstrations of model-making and metalworking processes will be given. Mr. V. E. Johnson, M.A., will show a working model electric gyroscopic monorail rail, several types of harmonographs, and geometric pens drawing curves. There will also be a collection of about 100 models entered in competition for gold and silver medals, and a loan section, containing a number of models of an interesting nature. Amongst these is a working model of a modern engineering workshop, to the building of which Mr. E. J. Windsor, a North London optician, has devoted his spare time for sixteen years. It reproduces screw-cutting lathes, milling and planing machines, benches, hand tools, overhead travelling crane, and even the steam engine which drives the shop. There will be a trade section, in which will be found an array of tools, castings, and materials required by model engineers.

Lectures on Renaissance and Ancient Architecture.

Mr. Banister Fletcher gave on October 2 the first of his course of lectures on "Renaissance Architecture." He explained that he would deal with architectural history from a popular point of view, and trace its evolution in the countries of Europe. He referred to the history of architecture as a visible exponent of civilisation uniting and embracing the other arts, and pointed out that all modern design was founded upon old art, but altered in order to conform to existing conditions. A knowledge of architecture is necessary to architects, craftsmen, and art students, and authors also require a knowledge of it for the setting of an historical novel, because a mere story about people without reference to the buildings in which they lived would remain dull and uninteresting. The antiquary and the connoisseur should also be interested, for the fascination of collecting is much increased by a knowledge of the dates and periods of architecture. The teaching profession is beginning to realise that to make history interesting the students should be shown the type of buildings in which our ancestors lived and worshipped. A knowledge of architectural history was indispensable to all who travelled, for to travel without such a knowledge was like having a book in front of one without the ability to read it. Mr. Fletcher next gave a short illustrated résumé of ancient and medieval architecture in order to show the evolution of architectural forms from the earliest times. Mr. Fletcher's first lecture on "Ancient Architecture" was given at the British Museum on the Tuesday following. Architecture, the lecturer explained, was the visible exponent of civilisation embracing the other arts, and all present-day buildings were founded upon old art suited to modern needs. The study of architecture was thus necessary to architects, craftsmen, and art students, and, further, it would be difficult to find anyone to whom a knowledge of the subject would not be beneficial. The author, journalist, photographer, and antiquary all required a knowledge of the evolution of the successive periods of architecture in order to help them in their work. The teaching profession now also endeavours to make history interesting by referring to the dwellings and temples constructed by the different peoples to suit their social and political requirements. A short illustrated review of ancient architecture showed the different types of buildings and referred to the various influences—geographical, geological, climatic, religious, social and political, and historical—which aided in their evolution.

University College Course in Heating and Ventilation.

The Institution of Heating and Ventilating Engineers for some time has been endeavouring to promote the interests of the scientific study

in the higher branches of heating and ventilation engineering in some of the centres for higher technical education in this country. With the help of a grant from the London County Council, a lectureship has been instituted at University College, London. A laboratory has been equipped, and it is hoped that the work will receive the support of those interested. Mr. A. H. Barker, B.A., B.Sc. (Lond.), Whitworth Scholar, has been appointed the first lecturer. There are many questions in heating and ventilation which have not been investigated, and very little knowledge is available on some points, and the work to be done at University College should therefore be of considerable value to the community. Germany has long been provided with elaborate and extensive buildings for the study of this subject, the funds having been provided by the Imperial Government. The Government of this country is not in such close touch with the requirements of technical education as the Government of Germany is, and in consequence this branch of engineering has hitherto suffered from neglect, and the thanks of the community are due to the London County Council for their public-spirited action. The session is to be opened by a series of public lectures at University College, in which the present position of the knowledge of this science will be discussed and reference made to the paths along which development is to be expected.

CORRESPONDENCE.

Burslem Public Buildings.

SIR,—I shall be obliged if you will kindly note in your next issue that the above was the joint work of Mr. T. E. Cooper and myself.

S. B. RUSSELL.

Manchester Library Competition.

SIR,—There has been a delay in publishing the award of the assessor, and the cause has now been made known. The assessor has placed a design first which does not comply with one of the most essential conditions, and which provides a library of a type which the Committee do not want, and which, if erected, would be not only out of date, but would make the city ridiculous. All the books, the *Manchester Guardian* states, are in the selected design to be placed in the cellar.

On page 5 of the printed instructions precise details are given of the book-store required, which would be similar to that of the design placed first in the great Welsh Library Competition, illustrated in the *Builder* some time ago. The Manchester Libraries Committee visited the best recently-erected libraries in Europe and the United States, and published a report, illustrated with plans of the best modern libraries, which all competitors could consult at the present reference library. There can be no doubt whatever of the type of book-store the Committee required. It was the business of the assessor to study this report, to ascertain the result of the Committee's visit to type libraries, and obtain their views and experience of library management; above all, to see that the conditions embodying these views were adhered to by competitors. The assessor could see in the Manchester libraries books stored in cellars and on the most modern system, and a moment's conversation with the librarians would have convinced him that the storage of books in a cellar is preposterous and hopelessly out of date.

Manchester architects are taking vigorous action; a protest has been sent to the Libraries Committee, suggesting that the award should be set aside, that the competition should be reopened, other assessors appointed, and that competitors be invited to send back their designs for further consideration. The writer suggests that competitors from all parts of the country should write to the Libraries Committee, Town Hall, Manchester, to the same effect.

There is no excuse whatever for the assessor's selection; the intention of the Libraries Committee is perfectly plain, and, should there have been any doubt, a moment's conversation with the Chief Librarian would have cleared up the point, and convinced him that the storage of books in a cellar would

We are informed that another old business in connexion with the building trades was likely to disappear, at any rate in its present conditions, *i.e.*, the slate, stone, and general builders' merchants' business at Greenwich, the late Mr. E. P. Trenchard. It is said that the business, which for a century old, and it is mainly because the late Mr. Trenchard had authorised the executors to carry it on after his death that the latter are now disposing of The wharves occupied for the business are now to be sold or let, and the stock and plant shortly to be offered under the hammer. It will be seen from an advertisement which we have elsewhere published, that it is proposed that the goodwill, together with the use of the trade name of E. P. Trenchard, shall form the subject of the first lot.

EDITORIAL SUMMARY.

The leading article, "Decorative Materials," deals with the relationship of materials to each other, and with the difficulties of harmonising them and at the same time expressing their different functions.

"Archæology in India" is the title of a second leader, which deals with, and quotes from, Lord Curzon's recent letter of protest to the *Times* (p. 410).

"Notes" (p. 411) include: "The Infirmary, Manchester"; "Metropolitan Water Supply"; "The Irish Railway Strike"; "The British School at Rome"; "Variations in quantities"; "Lake Dwellings."

The ninth and concluding article of the series on "The Story of the Bridge," by Mr. V. Shaw Sparrow, is given on p. 412. The author deals with the importance of the practical treatment of the subject.

An inaugural lecture on "Civic Design" was delivered on the 6th inst. at Mason College building, Birmingham, by Mr. Raymond Unwin, and a *résumé* of it, with illustrations, will be found on p. 414 under the heading of Town Planning at Birmingham University.

Correspondence (p. 417) includes the following items: "Manchester Library Competition"; "The Further Strand Improvement."

Book notices (p. 419) include: "Building in London"; "Ceilings and their Decoration."

The illustrated Monthly Historical Review (p. 421) includes: "The Coptic Monasteries of Wady-el-Natroun, Lower Egypt"; "The Luttra Museum, India"; and "Notes."

The Building Trade Section (p. 427) includes: "Party Walls—Some Legal Points"; "The Trade Unions and Strike Pay"; "The Industrial Council"; "Projected New Buildings in the Provinces."

Law Reports (p. 432) include: "Ancient Lights Case" and "Reinstatement after Fire."

MEETINGS.

FRIDAY, OCTOBER 13.

London Salon of Photography (5a, Pall-mall).—Lecture by Mr. Arthur Marshall, A.R.I.B.A., entitled "With a Camera in Holland." 8 p.m.
Glasgow Architectural Craftsmen's Society.—Mr. J. S. Glen-Fraser on "The Microscopic Examination of Architectural Materials."

SATURDAY, OCTOBER 14.

Royal Sanitary Institute.—Provincial sessional meeting at the Council Chamber, Town Hall, Hull. 12 a.m.

MONDAY, OCTOBER 16.

Architectural Association.—Mr. Raymond Unwin on "Town Planning, Formal or Irregular." 7.30 p.m.

TUESDAY, OCTOBER 17.

The Institution of Heating and Ventilating Engineers (Incorporated).—The autumnal general meeting, at the Institution of Mechanical Engineers, Storey's-gate, Westminster, S.W. 6.30 p.m.

Battersea Polytechnic.—Professor J. T. Morris, M.Inst.E.E., on "Electric Lighting." I. 7.30 p.m.

THURSDAY, OCTOBER 19.

University College.—Second of eight public lectures by Mr. Edward S. Prior, F.S.A., F.R.I.B.A., on "English Mediaeval Architecture." 6 p.m.

FRIDAY, OCTOBER 20.

The Royal Archaeological Institute.—Visit to Westminster Abbey. 10.30 a.m.

SATURDAY, OCTOBER 21.

The Institution of Municipal Engineers.—The third annual general meeting, to be held at Windsor.

COMPETITION NEWS.

Whiteley Homes Trust.

The trustees have appointed Mr. W. Cave, F.R.I.B.A., as their consulting architect, and will hold a limited competition for laying out the site of 220 acres they have bought near Walton, Surrey, for the erection of the Homes, with a church, sanatorium, and other buildings, in terms of the trust.

Rebuilding Fitzalan Market, Sheffield.

The Markets Committee of Sheffield City Council have brought forward a recommendation to the effect that they be authorised to invite designs for the rebuilding of the Fitzalan Market on its present site, less land required for street improvements.

BOOKS.

Building in London. A Treatise on the Law and Practice Affecting the Erection and Maintenance of Buildings in the Metropolis. By Mr. HORACE CURRIE, A.R.I.B.A., P.A.S.I. 1911. (Constable & Co. 31s. 6d.)

We cannot but offer our congratulations to the author of the above work on the service he has rendered to all who are in any way connected with building interests in London. This book supplies a want that has been felt for some time past, since Acts and Regulations have become so numerous and far-reaching that it is impossible to be satisfied that all are complied with, unless reference is made to a book of this character. We are aware that other publications have dealt with legal and sanitary requirements, but we do not know of any covering the ground quite so fully as this.

About half the book is devoted to a recital of the Acts of Parliament and by-laws now in force, commencing with Michelangelo Taylor's Act of 1817, and extending to the latest Building Act and the Housing and Town Planning Act. This recital is a necessary component of a work such as this, and by including portions repealed (in italic) has the more value as tracing the revisions these Regulations have undergone.

The book opens with a *résumé* of these Acts and Regulations, and the leading cases in which difficult points have been decided. The various sections of constructive work are conveniently classified; one chapter is devoted to calculations required under the Act of 1909, and another to the means of escape. The scope of the work also includes the rights between private parties, a section on the cost of building work carefully drawn up by Mr. H. J. Leaning, and one on property, including valuation and land development, by Mr. Sydney A. Smith.

We may say that we have tested the information given, in numerous cases drawn from everyday experience, and find that for accuracy and clearness it can be confidently relied on. Altogether, we think that the author deserves very high praise for the systematic way in which he has handled his material.

Ceilings and Their Decoration. By GUY CADOGAN ROTHERY. (London: T. Werner Laurie. Price 6s. net.)

THE subject of interior embellishment is of great antiquity; indeed, the author has found no difficulty in tracing decorative work of the kind back to the days of mud walls, when the dwellings of the day were beautified with the aid of coloured shells stuck to the yielding surfaces. That was the earliest form of mosaic, a method of decoration which has recommended itself through the ages. Ceilings include, of course, many architectural features, such as the fan vaulting of Henry VII.'s Chapel in Westminster Abbey and hammer-beam roofs, to which attention is given in the handy book before us. The actual work of all kinds which remains has been a source of continual investigation and comment, while in comparatively recent years there has been a revival in heroic decoration to which such artists as the late Edwin A. Abbey and Mr. John S. Sargent have ably contributed.

Mr. Rothery has studied the subject of ceilings to some purpose, and, writing from a critical standpoint, he easily convinces us that we have a lot to learn from the construction and decoration of ceilings in the past. It does not lessen our interest in the author's opinions that we do not always agree with many of his conclusions. For instance, in such an argument as the following:—"A further downward step is noticeable with the work of the brothers Adam, who came within measurable distance of the brick box with cheap stereotyped classical ornamentation stuck on in the manner and style of pink and white cake decoration. Like Jones, Wren, and Kent, they preached the necessity of treating walls, doors, chimneypieces, ceilings, and even furniture decoratively in harmony with the architectural scheme of the building or room. The pity was that in attempting to adapt the classic style to the economical needs of the day they degenerated into

mechanical namby-pambyism. In their ceiling work they lightened the panels, employing Zucchi and others to adapt Grecian designs to modern conditions. The designs are simplified, or so arranged as to be easily moulded in their patent stucco, which could be prepared in the studio and placed in position to advantage. Sworn enemies to the glare of white, of the bold work of Jones and Wren, they adopted genteel tints (of the milky and chocolate cream order) and nice line and scroll work. In a few words, it was all devoid of strength and sincerity."

It is a pity the illustrations were not made on a larger scale, as in some instances it is difficult to study the designs reproduced.

BOOKS RECEIVED.

A HISTORY OF FRENCH ARCHITECTURE, 1494 to 1661. By Professor Reginald Blomfield. Two volumes. 50s. net. (London: G. Bell & Sons.)

BRICKS AND TILES. By Edward Dobson. Twelfth edition, fully revised and several new chapters added by Alfred B. Searle. Illustrated. (London: Crosby Lockwood & Son.)

THE ANNUAL OF THE BRITISH SCHOOL AT ATHENS. No. XVI. Session 1909-1910. (London: Macmillan & Co., Ltd.)

THE MANUFACTURE OF VARNISHES AND KINDRED INDUSTRIES, BASED ON AND INCLUDING THE "DYING OILS AND VARNISHES" OF ACH. LIVACHE. By J. Geddes McIntosh. Second Edition; Vol. III. SPIRIT VARNISHES AND SPIRIT VARNISH MATERIALS. (London: J. G. & Son, 8, Broadway, Ludgate, E.C. 4. 1911.)

PRACTICAL MATHEMATICS AND GEOMETRY. By Edward L. Bates and Frederick Charlesworth. (London: B. T. Batsford. 3s. net.)

PENMANSHIP OF THE XVIIth, XVIIIth, and XVIIIth CENTURIES. Edited by Lewis F. Day. (London: B. T. Batsford. 18s. net.)

PRACTICAL ADVICE ON GAS FITTING. By R. Halkett. (London: Walter King. 2s. 6d. net.)

VIEWS OF ROME FROM THE XVth TO THE XVIIIth CENTURY, FROM SKETCHES IN THE IMPERIAL ACADEMY AT VIENNA. By HERMANN EGGER. (F. Wolfmüller & Co., Vienna and Leipzig.)

FIFTY YEARS AGO.

From the *Builder* of October 12, 1861.

The Thames Embankment.

FOR long, by means of sketches and otherwise, the *Builder* has endeavoured to show the urgent necessity, particularly in the metropolis of clearly defining the margin of the Thames; and, when once that limit has been distinctly appointed, using all endeavours to keep that channel clear.

For years we have had all manner of speculations respecting the Thames Embankment. The majority of intelligent persons must have seen the absolute necessity for such a work; and yet, while the Thames has been yearly getting into a worse state, there has been a battle of opinions; in fact, while physicians were consulting the patient was being sacrificed.

At length the Government has determined upon a plan for the northern Embankment; the raising of the money for this great work has been arranged; the sanction of Parliament is only needed; and now arises a dispute between the Metropolitan Board of Works and the Government. There is also opposition from those who have wharfs and other property along the river side; and wishes have been expressed for the formation of a roadway; and, inland, a series of small docks or basins. Looking at Puddle Dock, and reading accounts of other creeks which have been allowed to branch from the Thames—knowing how much they impede the right course of the river and how unwholesome they become—it is not to be

thought of, whatever may be the additional expense, that we are to have harbours for the collection of mud and other offensive matters, thus causing ill-health to those dwelling near and making the proposed new roadway anything but pleasant and salubrious. Whatever may be the line determined upon, it is clear that a solid embankment, without docks or any creeks, must be made.

According to the plan proposed there will be a considerable quantity of land saved. At Richmond-terrace there will be 220 ft. in breadth; at Hungerford, where there is at low water such an accumulation of mud, there will be 320 ft.; at Somerset House, 120 ft.; and at the Temple, 220 ft.

ILLUSTRATIONS.

St. Paul's Cathedral, Uganda.

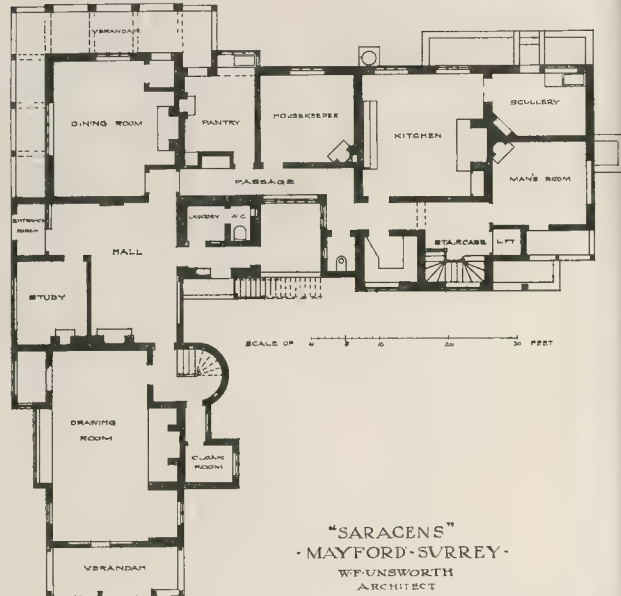
THE great missionary cathedral of Eastern Equatorial Africa, near the shores of the Victoria Nyanza Lake, was struck by lightning and destroyed a year ago. This building, on its important site on Namirembe Hill at Kampala, with its picturesque group of pyramidal roofs, formed an important feature of the landscape. The last of a series of wooden structures which had extended in size and failed in permanence, it was a sign of more than twenty years of successful church missionary expansion.

The building was of great size, cruciform in plan, with apsidal transepts, and was constructed with low brick walls carrying an immense roof of wooden structure covered with thatch.

It was therefore felt to be necessary that the rebuilt church should not only be fire-resisting and permanent, but have the character of a representative Christian cathedral.

The extent of the new building corresponds with that of the old; it is designed to accommodate the crowds of worshippers who assemble in thousands, as many as 10,000 having on great services congregated in and about the old cathedral.

Professor Pite's preliminary design, represented by the illustration, has been adopted and approved; operations are now commencing for making bricks locally and preparing the site for the erection of one of the most significant and important enterprises of the church in Africa in the present day.



"SARACENS"
MAYFORD-SURREY.
W. F. UNSWORTH
ARCHITECT

"Saracens," Mayford, Woking.

THIS house was originally intended as a golfer's cottage, but large additions were subsequently made, including the tower and the whole of the wing on the right-hand side of the drawing. The walls are of brick rough cast, and the roofs are covered with hand-made tiles. The architect was Mr. W. F. Unsworth, F.R.I.B.A., and the builders were Messrs. Norris & Son, of Sunningdale.

The Muttra Museum.

THESE illustrations show the proposed extension to the Muttra Museum, and are in connexion with the article on p. 424.

The Story of the Bridge.

THE illustrations of bridges at Orleans and Turin accompany Mr. Shaw Sparrow's ninth and last article on the subject (p. 412).

TIMBER IN ROOF COVERINGS.

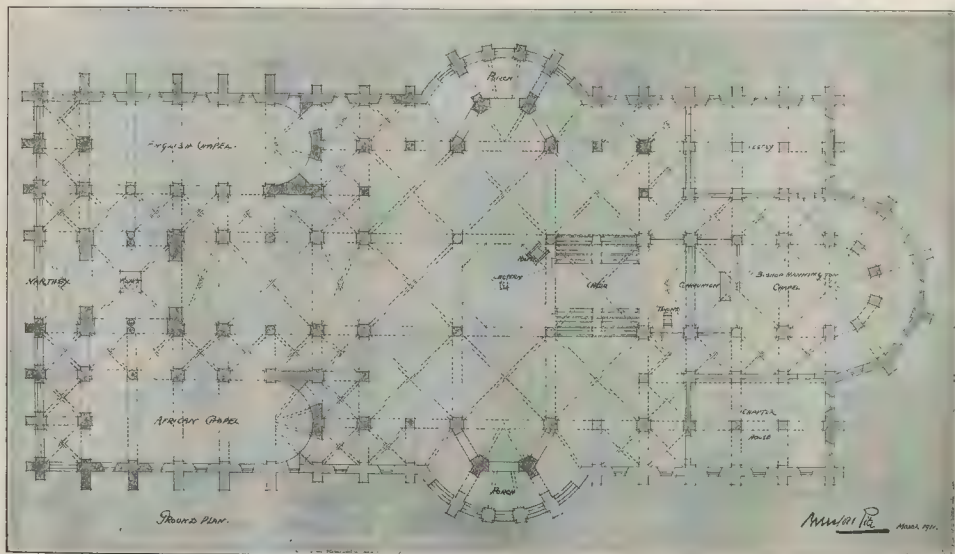
Referring to the article on "Timber in Roof Coverings," published in our last issue, equation (2), Unwin's rule, on p. 394, is wrongly printed

$$p = P \sin \theta \frac{1}{\sin \theta} \cos \theta - 1 \dots (2),$$

it should have been

$$p = P \sin \theta \frac{1}{\sin \theta} \cos \theta \frac{1}{\sin \theta} \dots (2),$$

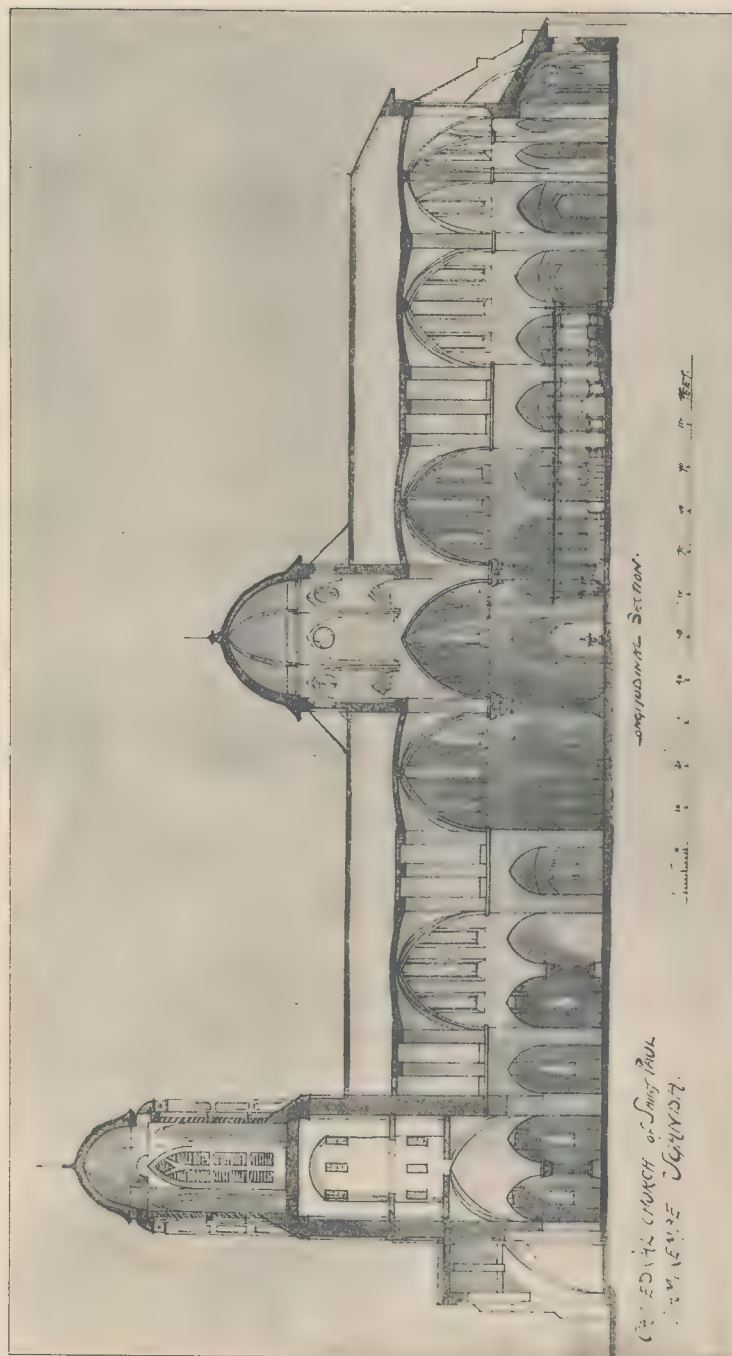
the latter part of the expression being the index of the power of $\sin \theta$.



St. Paul's Cathedral, Uganda. Professor Beresford Pite, F.R.I.B.A., Architect.

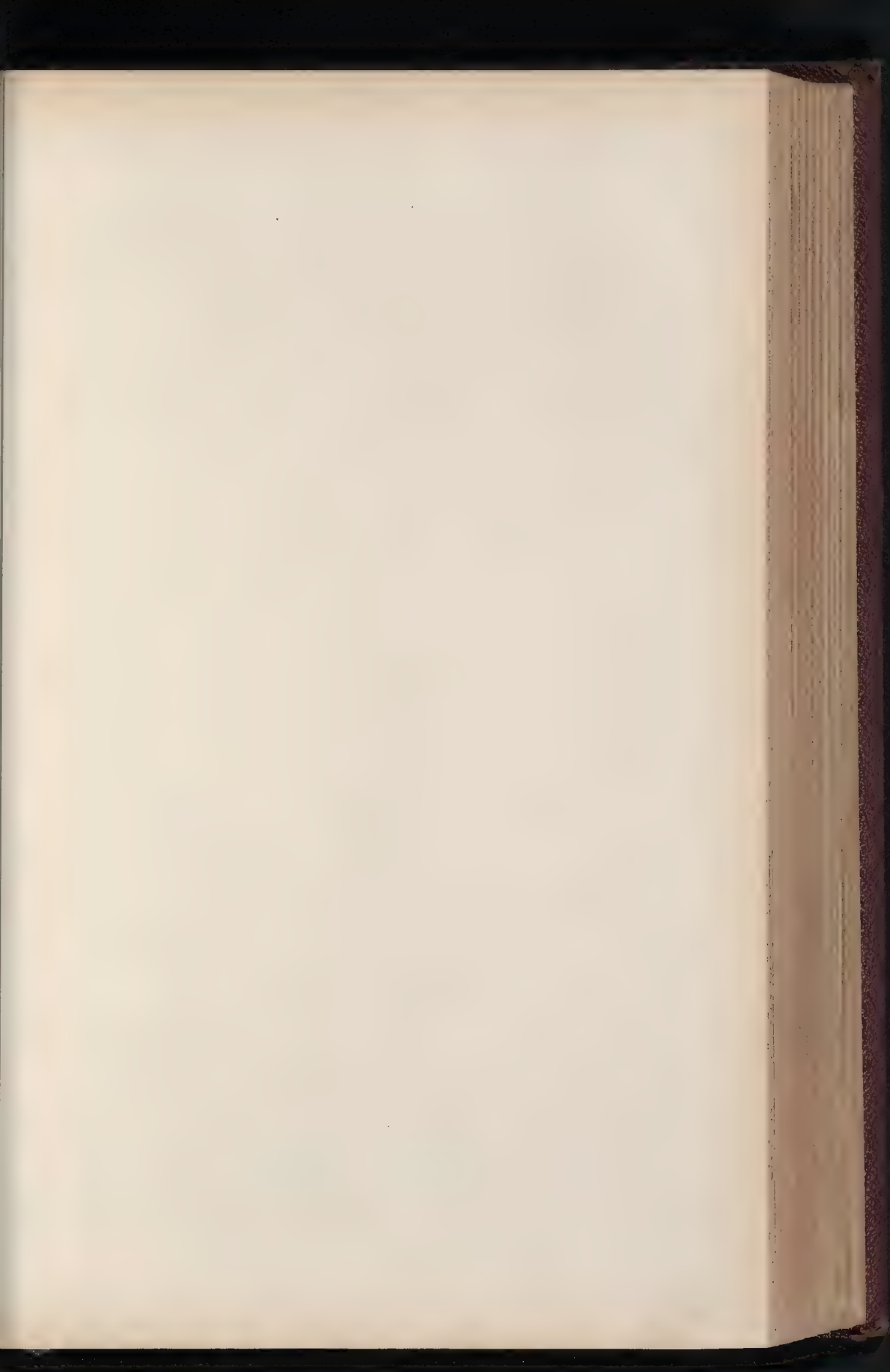
THE BUILDER, OCTOBER 13, 1911.





1/4 PHOTO BRAGUE 8" x 11" & 8" EAST HAZING STREET PETER LANE, E.C.

ST PAUL'S CATHEDRAL, UGANDA.—DESIGN BY PROFESSOR BERESFORD PITE, F.R.I.B.A.

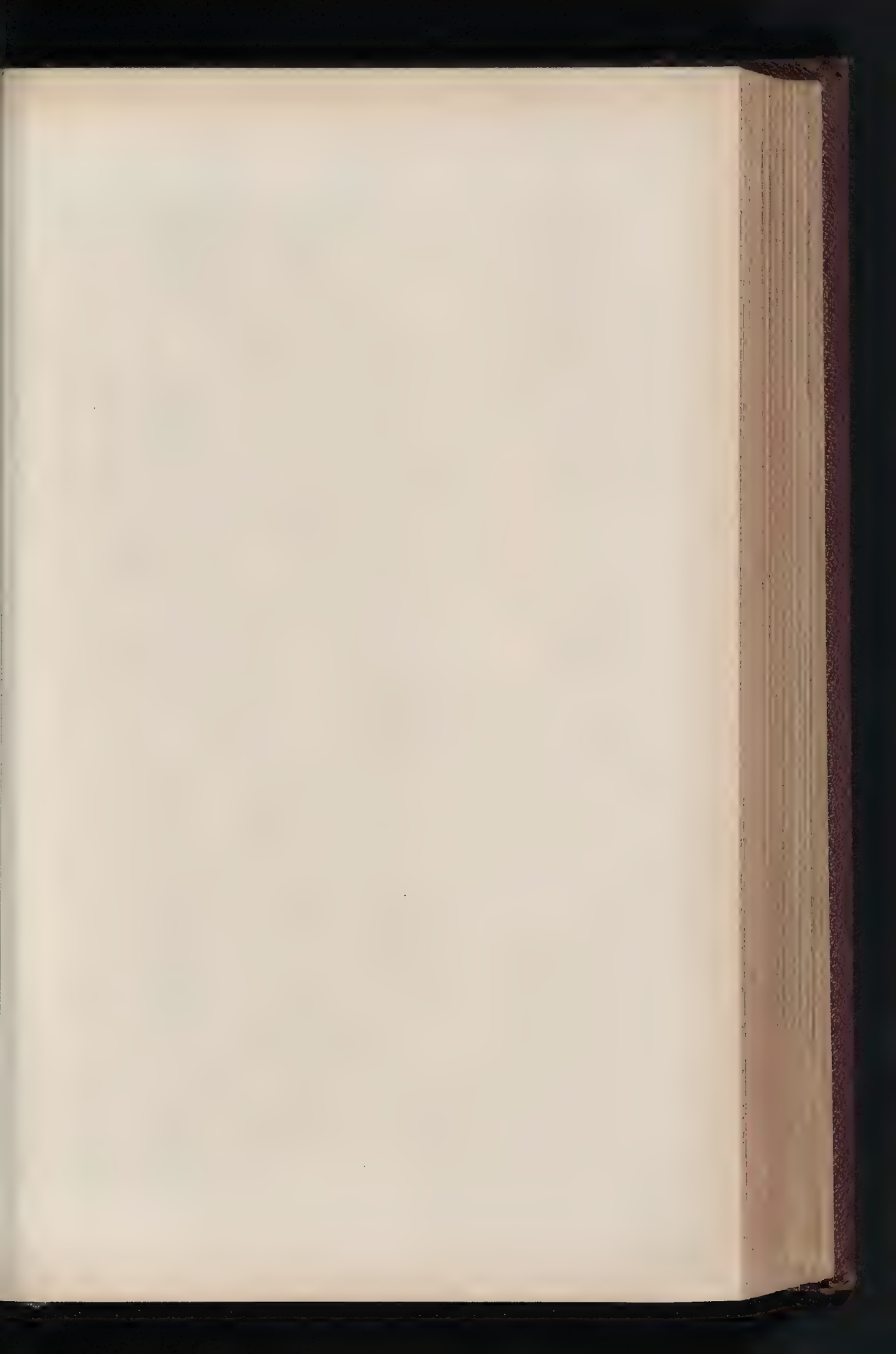


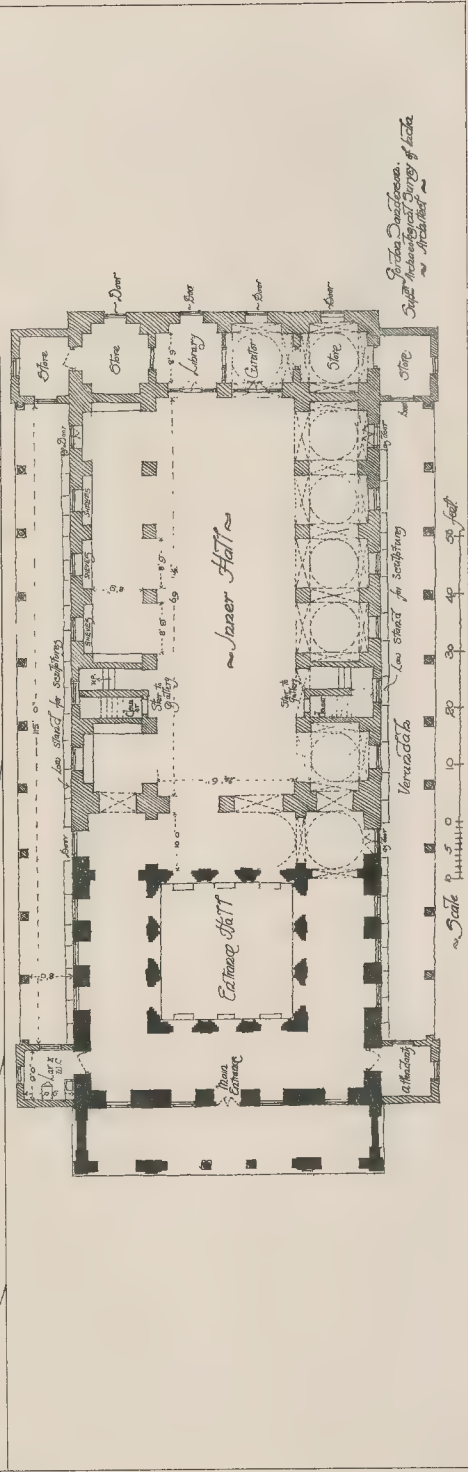
THE BUILDER, OCTOBER 13, 1911.



THE PO BRIDGE AT TURIN. BUILT BY THE FRENCH IN 1810.

"THE STORY OF THE BRIDGE."-IX.





THE MUTTRA MUSEUM: PROPOSED EXTENSION. MR. GORDON SANDERSON, ARCHITECT

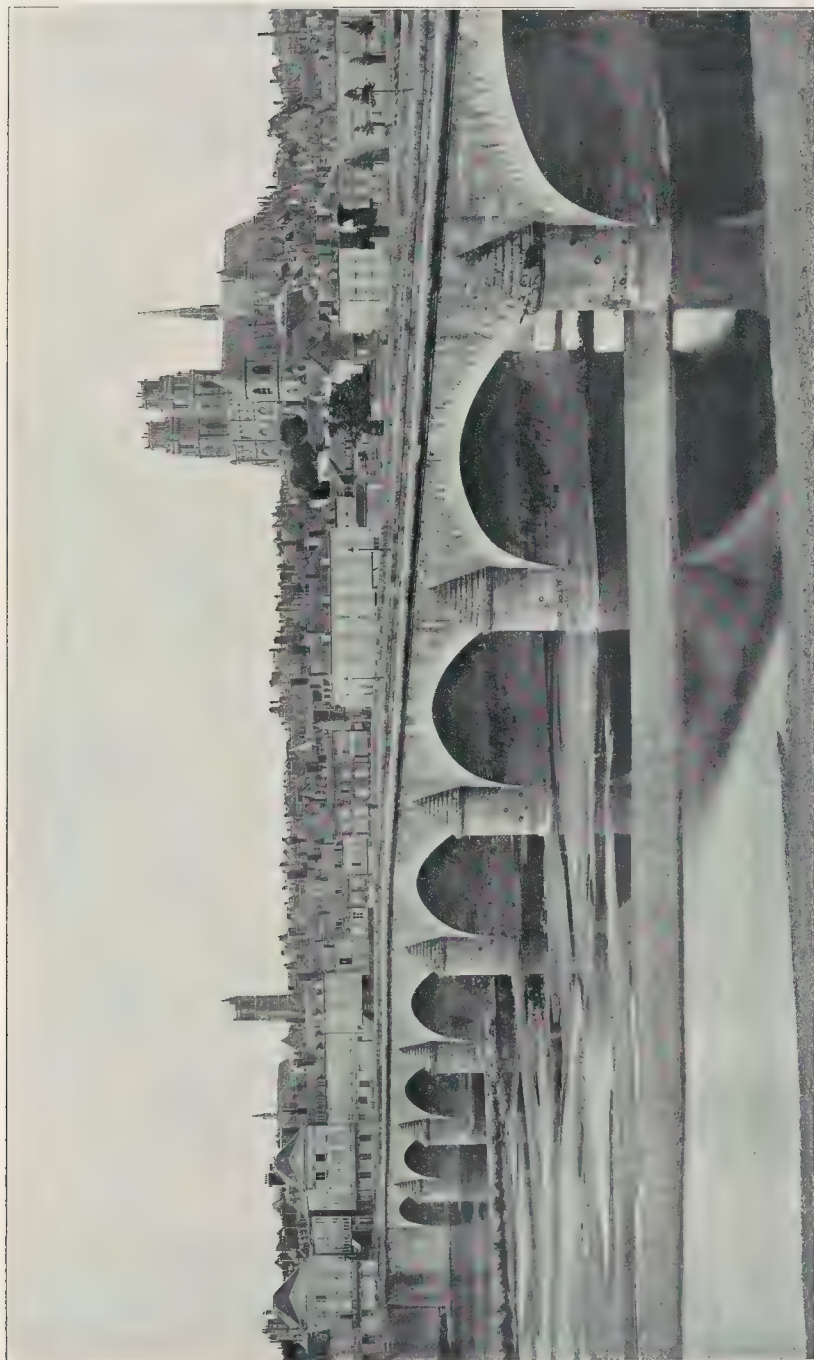


Photo by Naarden.

THE STONE BRIDGE OVER THE LOIRE AT ORLÉANS. BUILT BY HUPEAU & PERRONET, 1751.

"THE STORY OF THE BRIDGE."—IX.

Spence & Co., Ltd., Printers, 4 & 5 East, Harding St., E.C.

MONTHLY HISTORICAL REVIEW.



THE COPTIC MONASTERIES OF THE WADY-EL-NATROUN, LOWER EGYPT.

NEARLY one hundred kilometres to the north-west of Cairo, and some fifty from the nearest point of the Delta, lies the Wady-el-Natron, or Bay of Salt.

Here, surrounded by desert, are large deposits of salt and nitre and some three or four salt lakes, around which are rank vegetation, and, in places, cultivated land. To the north of these lakes four Coptic monasteries lie like derelicts from the ocean, stark and bare from the sand. Lying nearest Cairo is the monastery of Makarius, or Abu Makar; some five kilometres west of this are the monasteries of Anba Bishoi and Surian, within a short distance of each other. Still another nine kilometres west of these is Baramus. The date of foundation of these houses is indefinite, but that the site has been occupied by eighteen centuries of Christian life is certain.

The second century St. Frontonius drew to Wady-Natron with seventy disciples, but probably the surviving houses date from the IIIrd and IVth centuries.

These four monasteries all have the same characteristics, although varying greatly in size and detail.

Each monastery is surrounded by an enclosure wall about ten metres in height,

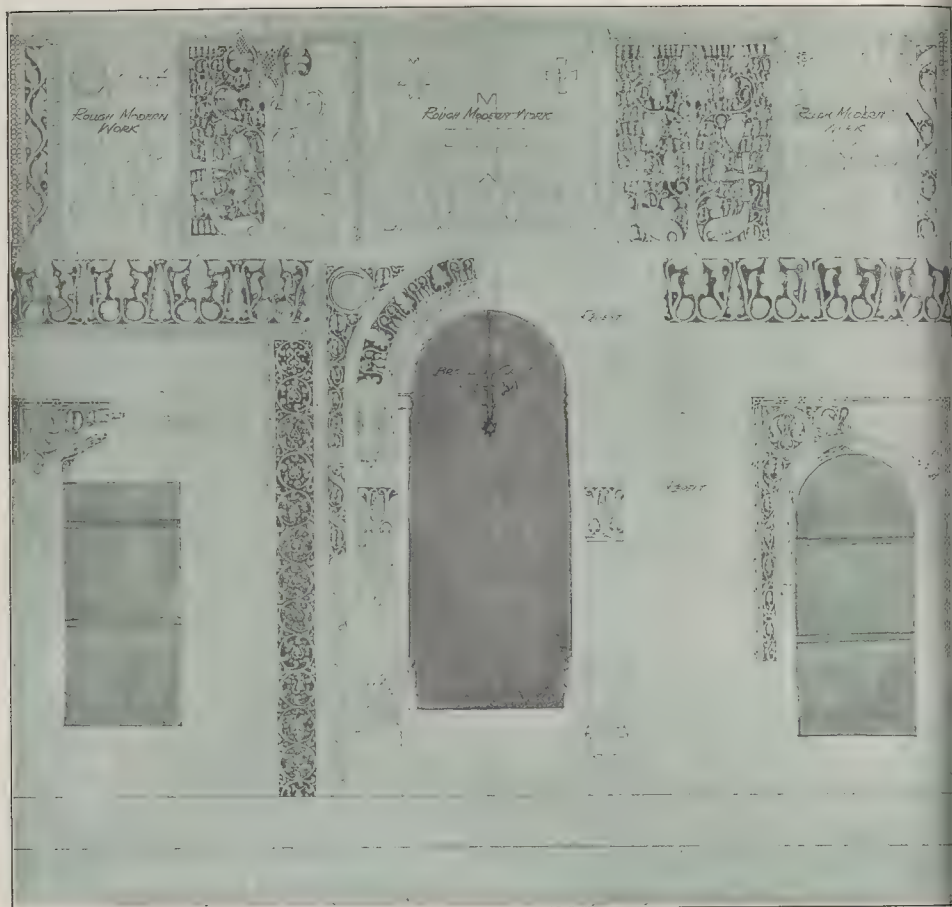
forming on plan an irregular four-sided figure. The only opening in this wall is a very low and narrow doorway.

In former times these monasteries were

subject to Bedouin raids, hence the massive enclosure walls and the small doorway, against which, in times of trouble, heaps of stones were piled. Within the walls are two



The Monastery of Baramus, Wady-Natron.



The Monastery of Surian, East Wall: Details of Plasterwork in the Haikal of the Church of Al Adria.

or three churches, cells for the monks, a guest house, refectory and kitchens, numerous storerooms, the mill, a well, and the "kasr." Part of the enclosed space is laid out as a garden, planted with date palms and vegetables and watered by small channels from the well. The "kasr" corresponds in many ways to the keep of the mediaeval castle. It was used by the monks as a last resort from the fury of their invaders, and is reached by means of a drawbridge on the

first floor, either from the gatehouse or from a flight of steps near the entrance in the enclosure wall.

It contains on the ground floor storerooms, in one of which is a well, now dry; on the first floor cells and the library, and on the flat roof is a small chapel, which seems to have been a later addition.

The "kasr" of the Monastery of Makarius differs from the others in that most of the chambers have been converted into chapels.

The various churches follow no definite plan, but, in common with all Coptic churches, they have the three eastern sanctuaries, screened off from the main body of the church. Unlike the Cairene Coptic churches, however, there are no baldachins over the altars of these sanctuaries. The more general type of plan for these churches consists of a nave with low aisles, returning at the west end, forming a small narthex and the choir, lying transversely to the



Earamus, Wady-Natroun.

and the full width of nave and aisles. Beyond are the three sanctuaries. Adjoining the churches many subsidiary buildings, chapels, storerooms, and one or two others are usually to be found. The walls are of roughly-coursed rubble, the stone for which was quarried from the

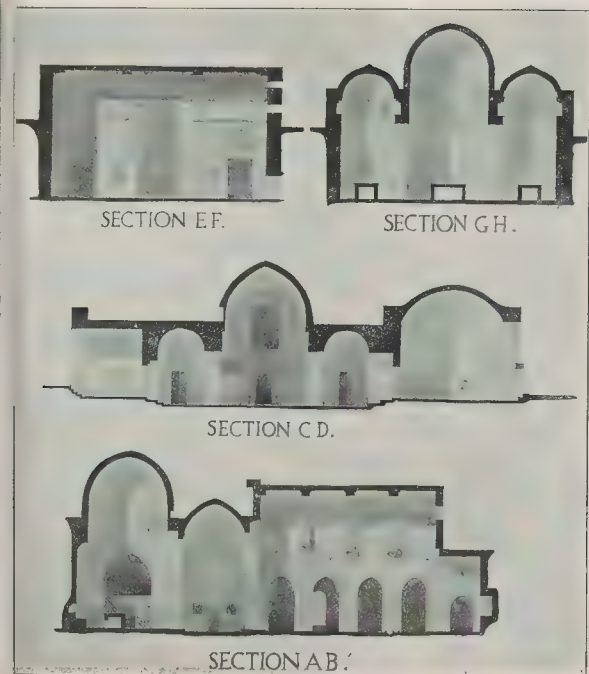


Anba Bishoi: Detail of Panel to Haikal Doors.

ert near by. The roofs are formed of series of brick domes or vaults, sometimes pointed, sometimes semicircular. The bricks, these are hard, small, and well burnt, of deep-red colour, and must have been brought on camels across the desert from



Surian Large Church: The Nave.



The Church of Al Adra in the Monastery of Baramus, Wady-Natroun, Lower Egypt.

the Nile delta. Wide mortar joints were used. These domes and vaults, as well as many ornamental details in brick, point to the fact that the builders of these monasteries had an unrivalled mastery over their material. The domes over the less important buildings are usually of rubble masonry, and many of them have fallen in. Unhappily, the walls and roofs of almost all these buildings have been coated with a thick, hard plaster, both internally and externally. This probably hides many interesting features—marble columns and caps, and also brick detail.

Within the churches are many beautiful wooden screens and doors, divided into small panels, carved with arabesques or geometrical patterns and inlaid with ivory.

In the "haikal," or main sanctuary, of the larger church of Dér Surian is some excellent work in modelled plaster, in the form of bands and panels of ornament in high relief, also several small windows with cement tracery in severe geometric patterns, in which are placed small pieces of coloured glass.

In this church also there are three semi-domes, one at the north end of the choir, one at the south, and the third at the west end of the nave, upon which are paintings of Biblical subjects, very similar to Byzantine mosaics in feeling.

In some of the other churches also paintings are to be found, but most of these are in a very bad state of preservation. There are also some few beautiful lamp-coronæ and candlesticks of bronze lying disused and covered with dust in odd corners of one or two of the churches. In places where the old plaster remains are to be found inscriptions, or "graphiti," both in Arabic and Coptic characters.



Monastery of Surian : Plaster Niche in the Haikal of Main Church.

These four religious houses are still inhabited, between twenty and thirty monks dwelling in each. Except on holy days there are only two extremely short services held daily, one in the early morning and one at sunset. The remaining time is spent by the monks in reading, working in the garden, the preparation and consumption of food, and in sleep.

As a whole the monks are ignorant, dirty, and idle, but hospitable towards strangers as far as lies in their power.

The revenue of these monasteries is derived from estates belonging to the Coptic Church, situated in the delta of the Nile.

No interest whatever is taken by the monks in preserving their ancient edifices; on the contrary, their main object appears to be to destroy the old buildings and erect new ones, as far as possible imitating in style the debased Classic or Art-Nouveau nightmares to be found so plentifully in modern Cairo or Alexandria.

THE MUTTRA MUSEUM (INDIA).

MUTTRA, or Mathura, as it is really called, is one of the great religious centres of India. Nowadays, it is chiefly connected with the worship of Krishna, the incarnated god of the Hindus, who is believed to have been born there, and the events of whose childhood are located both at Mathura itself and in the neighbouring places of Brindaban, Gokul, Mahaban, and Govardhan.

It is curious that the ancient sculptures and inscriptions which are found in and round Mathura in such abundance do not bear testimony to the existence of Krishna worship in

a very early period. The great bulk of those sculptural and epigraphical remains belong to Buddhism, which must have flourished here, particularly in the reign of the Indo-Scythian princes, who ruled over Northern India about the 1st century of our era. The closely-related sect of the Jains also possessed important sanctuaries at Mathura, and side by side with those two religions there existed the popular cults of the Nagas, or Snake gods, and of the Yakshas, or treasure-guarding goblins.



Anba Bishoi, Wady-Natroun.

The sculptures of this period are of peculiar interest, as they show evident traces of Greek, or rather Hellenistic, influence, which penetrated into the north-west of India from the Grecian kingdom of Bactria. This will be evident from the Bacchanalian group in the Mathura Museum (Fig. 1), and from the Hercules with the Nemean lion in the Indian Museum, Calcutta. It is obvious that these are not works produced by the first artists of Hellenas, but, notwithstanding their degenerated character, the classical origin is unmistakable.

It is not a little curious that the image of Buddha is in all probability a creation of the Græco-Buddhist artists of North-Western India, as in the older, purely indigenous monuments his figure is never shown, but is always replaced by some sacred symbol. The Buddha image of the Indo-Scythian period, such as it occurs in Mathura, does certainly not betray its Western origin at first sight.



Fig. 1. Bacchanalian Group from Pali Khera (Muttra Museum.)

It is only by comparison with the early Græco-Buddhist type from which it is derived that its true birthright can be proved.

Fig. 2 shows one of the most ancient, and at the same time best preserved, Buddha images yet found at Mathura. It bears a votive inscription, which enables us to assign it to the Indo-Scythian period. The great teacher of Buddhism is shown seated cross-legged under the Bodhi tree with his right hand raised in the attitude which indicates the imparting of protection. He is surrounded by four attendants, two standing, his sides with fly-whisks and two hovering above and showering flowers over him. The sculpture certainly would seem to have nothing Greek about it. Yet there are two features in it which point to Western influence. First there is the halo, and secondly the indication of the folds of the garments over the left shoulder and under the feet. The treatment of the drapery is very conventional and stiff, and it clearly shows how classical elements introduced

Indian art become gradually Indianised. The one is plain except for a scalloped border. It is interesting to compare the beautiful standing Buddha image (Fig. 3) which belongs to a later period (A.D. 300-600), when the indigenous dynasty of the Gupta Emperors replaced the alien Indo-Scythians. It is under the Guptas that Indian art reached a very high degree of excellence, as will be seen from this image, the pride of the Mathura Museum. Its character is purely Indian. The treatment of the drapery, though very conventional, is exquisite, and the artist lavished his decorative skill on the halo, a true significance—that of an aureole of radiating light—being clearly forgotten. It will be seen that the scalloped border of the earlier type has been preserved. We note two miniature figures kneeling at the feet of the Buddha, no doubt the human worshippers for whose sake this beautiful image was made. A well-preserved inscription on the base mentions that it was a gift of the Buddhist friar Yasodhara, and ends with the usual formula, "Whatever merit there is in this gift, let it be for the attainment of supreme knowledge by his parents, teachers, and preceptors, and all sentient beings." The inscription is not dated, but, judge from the character, it must belong to the 5th century.

Fig. 4 shows a Brahmanical sculpture of still later period. It represents Vishnu, probably in his incarnation as Buddha. For the four hands, two rest in the lap in the attitude of meditation, whereas the two others hold two of Vishnu's emblems, the mace and the wheel or disc. The three great gods, Brahma, Vishnu, and Siva, are shown above, each seated in a little chapel. The sculpture is thoroughly Indian in its strict symmetry, its exuberance of detail, and prominently decorative character. The central figure expresses well the Eastern ideal of repose,

and thus marks what is perhaps the most typical difference between Greek and Indian art. It is noteworthy that its head is still encircled with the halo, which here assumes the form of a full-blown lotus-flower.

One of the first scholars who drew attention to the antiquarian wealth of Mathura was Mr. F. S. Growse, of the Indian Civil Service, who was in charge of the district for several years. It was due to Mr. Growse's initiative that a local museum was founded about 1881, which at present contains the best collection of Mathura art existing. It comprises Buddhist, Brahmanical, and Jain sculptures, and is particularly representative of the Indo-Scythian period, when the Mathura School was most productive.

Originally intended as a rest-house for native gentlemen of rank, the present building was begun by Mr. Thornhill, the Magistrate of the district, and some Rs. 30,000 were spent when the work was interrupted by the Mutiny. The idea was that the building should stand in extensive grounds of its own, but Mr. Thornhill's successor set to work to take the grand trunk road immediately across its front at a most awkward angle. The garden intended for it was cut off, and the neighbouring buildings run up near by without any idea of arrangement. Eventually it was entirely abandoned and nicknamed "Thornhill's Folly." In 1874, the proposal of converting it into a museum was sanctioned, and a roof added to the building, the roof of the ruined Temple of Harideva, Govardhan, supplying the *motif* of construction to the architect, Mr. Growse. A porch was afterwards added, which has unhappily been overburdened with ornament. Something simpler would have had a more harmonious effect. The proposed additions (shown hatched on plan) will amply provide for the extra accommodation which is so badly needed. At present the sculptures are packed together



Fig. 3. Image of Buddha.

(Muttra Museum.)



Fig. 2. Image of Buddha.

(Muttra Museum.)

very closely, and their arrangement does not do them justice. The new inner hall will be used for the heavier sculptures, while the adjoining bays will contain showcases, and shelves between the pilasters will serve for smaller exhibits. The new ground floor accommodation also gives a room for the Curator, library, etc., and there is ample storage for duplicate exhibits. Two flights of stairs lead up to the first floor, which will consist solely of a gallery containing showcases and shelves. The inner hall will be top lighted in addition to the windows in each of the side bays. The planning has been kept as simple as possible, the arrangement of the different classes of exhibits being primarily borne in mind. Externally, a long verandah on each side will be used for the display of those sculptures to which external air will not be detrimental. No attempt to reproduce the rich carving of the portico is to be made, wall surfaces being kept as simple as possible. The upper-story windows will be shaded by a deep "chajja." The building, as extended, perhaps appears rather long for its width, but the site did not permit of any lateral extensions. Dr. Vogel, of the Archaeological Survey of India, and the present Hon. Curator of the Museum, has worked hard for its well-being, and the scheme for its enlargement is his proposal. Much is being done by the Government to improve the condition of local museums such as Muttra. The student of Indian Archaeology is materially assisted by their existence, and he can study the topography of the "find places" of the exhibits with facility. The Government have expressed their willingness to substantially help with the funds for the proposed extension provided a satisfactory response to the appeal for funds is given locally.

It is proposed also to divert the trunk road so that it passes the building at right angles, and also to slightly change the position of a road from the east, so that the latter will approach the building axially. By this change a little circular plot will be formed in front of the Museum, on which it is hoped to erect a fountain or statue. The whole scheme, together with the road diversion mentioned above, has been estimated to cost Rs. 42,000, including the provision of extra cases and all fittings.

THE BUILDING TRADE.

TY WALLS—SOME LEGAL POINTS.

OLDERS and householders are frequently troubled with questions relating to party walls. Indeed, it is not too much to say that of the legal cases which come before the courts as to party walls form about 50 per cent. of the business. We will now enumerate a few of the problems which may arise, and then consider them in detail.

Meaning of the term "party wall." Who may build and repair a party wall. Liability for interference with a party wall.

Interference with adjoining property by a party wall. Repairing party wall.

Party walls under the London Building Act.

In answer to some of the above questions, as London is concerned, will be found in the London Building Act, 1894, and the provisions of which have been decided thereunder. The object of the subject, however, we hope to indicate the general law, and then to show the procedure which has to be followed in case a party wall is to be interfered with in London.

Meaning of the Term "Party Wall."

The words "party wall" may be used in different senses—a wall of which the adjoining owners are tenants in common, that is possibly the primary meaning of the phrase; a wall divided longitudinally into two strips, one belonging to each of the adjoining owners; a wall which belongs to one of the adjoining owners, but which is an easement or right in the other; or it may be maintained as a dividing wall between the two tenements; and a wall which is divided longitudinally into two moieties, each moiety being subject to an easement in favour of the other moiety.

Who may Build and Repair a Party Wall.

Land belonging to different owners, and are unbuilt on at the junction. When desiring to build a party wall may notice of such desire on the adjoining owner describing the intended wall. If he then, the wall may be built partly on his land and partly on that of his neighbour, the expense being proportionately borne; but if he does not consent, the first owner cannot build an external wall just outside the boundary of his own land. In such case, however, he may, after giving notice, lay concrete footings on the land of the adjoining owner, subject to the payment of such compensation for damage done as may be awarded by the surveyor. It is also to observe that this right to build a party wall (which is expressly conferred by the London Building Act, 1894, and only applies to buildings in the metropolis) is in parture from the common law. At common law it would be a trespass to build on a neighbour's land.

Any person in common of a party wall or who has sometimes said, does not have any obligation on the part of one owner in common towards his co-tenant to repair; but this statement is very doubtful, as regards ordinary repairs, and it is probably erroneous, as regards necessary repairs, for at common law, where one owner in common of a party wall refused to contribute his share to the repairs, he has been compelled to fulfil his duty.

Liability for Interference with a Party Wall.

When there is no right of support exists, by pulling down his wall, who proceeds negligently, irregularly, and improperly his neighbour is subjected to more than ordinary risk, if an accident occurs may be for the accident—even where the party who has not done all that he could is his own protection (*Walters v. Pfeil*, 1 M. 364), and although the property damaged may have been so infirm that it has lasted only a few months longer,

he may be held liable in that case also: for no person has a right to accelerate the fall of his neighbour's house, the age and condition of the property injured being merely a circumstance to be taken into consideration by the jury in determining the amount of the negligence and in assessing the proper damages (*Dodd v. Holme*, 1 A. & E. 493).

(3) Interference with Adjoining Property by Altering Party Wall.

It is of particular importance that builders who are asked to effect any repairs to the walls of a house should inquire whether any party walls are likely to be interfered with. Sometimes the mere interference with one-half of a party wall involves damage to the adjoining buildings. We recall a recent case at the Lambeth County Court, where a builder was employed to repair a wall. He was not told that it was a party wall, but in effecting the repairs he produced a crack in the cross wall of the adjoining house. The adjoining owner promptly sued the man who had employed the builder, and recovered damages. In such a case it is possible that the man who employed the builder could sue him for negligence. It is to the builder that he looks for advice and guidance when he is carrying out works of this kind. He is not supposed to know anything about support, or party walls, or the mutual rights of adjoining owners.

(e) Party Walls under the London Building Act.

The expression "party wall" as used in the London Building Act, 1894, means (a) a wall forming part of a building, and used, or constructed to be used, for separation of adjoining buildings belonging to different owners, or occupied, or constructed, or adapted to be occupied by different persons; or (b) a wall forming part of a building, and standing to a greater extent than the footings projection of the lands of different owners. It is to be distinguished from "party fence wall"—a phrase used in the Act to designate a wall used to separate the lands of one owner from those of another.

In the metropolis, a wall which complies with these conditions becomes a party wall either by being built or used as such. So where a building was proposed to be erected, some portions of it being of much greater height than others, and the walls dividing the higher from the lower portions were to be carried up above the roof of the lower, so as to form the outside walls of the higher, it was decided (on the authority of *Weston v. Arnold*, 1 L. R., 8 Ch., 1,084) that the wall was not a party wall at any point higher than 3 ft. above the point at which it ceased to be a dividing wall, and that, consequently, openings might be made in it above that height.

A building owner (in London) has certain defined rights in relation to party walls. He can exercise these and no other. Thus he may (a) make good, underpin, or repair any party structure which is defective or out of repair; (b) pull down and rebuild any party structure which is so far defective or out of repair as to make it necessary or desirable to pull it down; (c) raise and underpin any party structure upon condition of making good all damage occasioned thereby to the adjoining premises, or to the internal fittings and decorations thereof; and of carrying up to the requisite height all flues and chimney-stacks belonging to the adjoining owner on or against such party structure or external wall; (d) a right to pull down any party structure which is of insufficient strength for any building intended to be built, and to rebuild the same of sufficient strength for the above purpose upon condition of making good all damage occasioned thereby to the adjoining premises or to the internal fittings and decorations thereof; (e) a right to cut into any party structure upon condition of making good all damage occasioned to the adjoining premises

by such operation; (f) a right to cut away any footing or any chimney breasts, jambs, or flues projecting or other projections from any party wall or external walls in order to erect an external against such party wall or for any other purpose upon condition of making good all damage occasioned to the adjoining premises by such operation; (g) a right to cut away or take down such parts of any wall or building of an adjoining owner as may be necessary in consequence of such wall or building overhanging the ground of the building owner in order to erect an upright wall against the same on condition of making good any damage sustained by the wall or building by reason of such cutting away or taking down; (h) a right to perform any other necessary works incident to the connexion of a party structure with the premises adjoining thereto. But the above rights shall be subject to this qualification, that any building which has been erected previously to the date of the commencement of this Act shall be deemed to be conformable with the provisions of this Act, if it be conformable with the provisions of the Acts of Parliament regulating buildings in London before the commencement of this Act; (i) a right to raise a party fence wall(s) or to pull the same down and rebuild it as a party wall.

A party wall may not, however, be raised in such a manner as to obstruct ancient lights in the adjoining premises. The notice given must be so clear and intelligible that the adjoining owner may be able to see whether he ought to give a counter-notice, and what the nature of that notice should be.

Where a class of persons such as joint tenants or tenants in common are entitled to a particular interest in the adjoining premises, notice on one such class will be sufficient.

THE TRADE UNIONS AND STRIKE PAY.

The General Federation of Trade Unions has issued a circular, entitled "Threatened Trade Unions," which expresses some apprehension that the Government may restrict the right to picket, and may restrain the right of trade unions to grant or withhold strike pay. The trade unions appear to be calling out before they are hurt, but it is hardly surprising if the recent developments of "peaceful picketing" and the granting of strike pay without the necessary resolutions and formalities have caused them to experience an apprehension that the public may call upon the Government for some redress. The Trade Disputes Act is responsible for the difficulties now experienced. "Persuasion," if it really is "peaceful," requires no statutory sanction: it is no offence against the common law. The peaceful picketing and persuasion, the creation of statute, is an anachronism and sanctions duress, either by a parade of unnecessary force in numbers or by minatory action on the part of the picketers.

The second question—the payment of strike pay—offers more difficulties, as the unions are in fact strangers to the contracts between employers and their workmen, but on the principles which prevail in law in actions for "maintenance," and which protect persons from being victimised by litigation at the instance of persons who have no interest in it, it would certainly seem equitable to restrain the unions from supporting men who have gone on strike in breach of existing contracts with their employers. Where the men have duly terminated their contracts the case would seem different, and the unions should be at liberty to support the men if they see fit so to do.

The freedom of the funds of trade unions from being levied upon where the unions have been guilty of tort and have acted illegally, granted by the Trade Disputes Act, has not only endangered the public safety, but has injured the unions themselves by weakening their authority over their members.

PROPOSED INDUSTRIAL COUNCIL.

A new national body of representatives of employers and men of the great industries of the country has been formed for the purpose of settling or avoiding calamitous industrial disputes "by which the public are adversely affected." "The Industrial Council" is to be the title of the new body.

The following is the text of the official statement issued from the Board of Trade Offices:—

"His Majesty's Government have recently had under consideration the best means of strengthening and improving the existing official machinery for settling and for shortening industrial disputes by which the general public are adversely affected.

With this end in view, consultations have recently taken place between the Prime Minister and the President of the Board of Trade and a number of representative employers and workmen especially conversant with the principal staple industries of the country and with the various methods adopted in those industries for the preservation of peaceful relations between employers and employees.

Following on these consultations and after consideration of the whole question, the President of the Board of Trade, on behalf of His Majesty's Government, has established an Industrial Council representative of employers and workmen.

The Council has been established for the purpose of considering and of inquiring into matters referred to them affecting trade disputes; and especially of taking suitable action in regard to any dispute referred to them affecting the principal trades of the country or likely to cause disagreements involving the ancillary trades, or which the parties, before or after the breaking out of a dispute, are themselves unable to settle.

In taking this course the Government do not desire to interfere with but rather to encourage and to foster such voluntary methods or agreements as are now in force or are likely to be adopted for the prevention of stoppage of work, or for the settlement of disputes. But it is thought desirable that the operations of the Board of Trade in the discharge of their duties under the Conciliation Act, 1896, should be supplemented and strengthened, and that effective means should be available for referring such difficulties as may arise in a trade to investigation, conciliation, or arbitration, as the case may be.

The Council will not have any compulsory powers."

We hope to deal with this important scheme in our next issue, but we may add here that the following gentlemen, among others, have consented to serve on the Council:—

Mr. J. W. White (President of the National Building Trades Employers' Federation), Mr. F. Chandler (General Secretary of the Amalgamated Society of Carpenters and Joiners), Mr. J. R. Clynes, M.P. (Manchester, N.E.) (Organising Secretary of the National Union of Gas Workers and General Labourers of Great Britain and Ireland), Sir George Askwith, K.C.B., K.C., the present Comptroller-General of the Labour Department of the Board of Trade, has been appointed Chairman of the Council.

BUILDING TRADES' DISPUTE.

A MEETING of the Manchester branch of the National Association of Builders' Labourers was held at the Caxton Hall, Salford, on the 23rd inst., when the general secretary, Mr. P. Flanagan, reported that the deputation had been met in the afternoon by representatives of the Master Builders' Association, to whom they had stated the claims of the labourers. They had asked for a minimum wage of 6d. an hour for general labourers; 6½d. an hour for bricklayers, stonemasons, and slaters; labourers; and 7d. an hour for scaffolders, iron-fixers, and other grades of the semi-skilled men. This was the first time they had met the employers' association, and they had asked for a code of working rules, which would apply to the conditions of their work, as similar codes applied to that of the skilled workers. The suggested rules were to cover such matters as starting time, walking time,

THE BUILDER.

[OCTOBER 13, 1911.]

and country work; they would provide for overtime at the rate of time and a quarter for the first two hours, and after that at the rate of time and a half. The employers' representatives had promised to put the proposals of the union before their association, and their reply might be expected in the course of a fortnight.

LIVERPOOL MASTER BUILDERS.

THE forty-fifth annual general meeting of the Liverpool Master Builders' Association was held in the boardroom of the Association, 24, Sir Thomas-street, recently. The chair was occupied in the earlier proceedings by the retiring President, Mr. James T. Duthie. The annual report dealt with various matters of importance to the trade. That, and the Treasurer's statement of accounts for the past twelve months, were approved. Mr. Thomas M'Hugh (Booth) was elected President for the ensuing year. The following further officers were then elected:—Mr. Thomas Rimmer, Senior Vice-President; Mr. Robert Morrison, Junior Vice-President; Mr. H. E. Cubley, Treasurer; Mr. H. E. Dallow and Mr. J. Sirett Brown, Honorary Auditors. Forty-two members were elected to form the Council for the ensuing twelve months. The Council is divided up into seven trade committees representing the following: Bricklayers, masons, plasterers, and slaters, carpenters and joiners, painters, plumbers, and glaziers, electricians, and Associate members. The retiring President was accorded a vote of thanks for his services in the chair during the past twelve months, and the meeting terminated with a vote of thanks to the Secretary, Mr. Bertram B. Moss.

NORTHERN COUNTIES FEDERATION.

THE quarterly meeting of the Board of Representatives of the Northern Counties Federation of Building Trade Employers was held at the Grand Hotel, Sunderland, Mr. Fred. W. Ranken, Sunderland, presiding. The President presented the report in connexion with the visit of the National Federation to Newcastle in July. He said the Northern Counties Federation were pleased with the arrangements for the entertainment of the visitors during the week of their visit, and on their behalf presented to the Secretary (Mr. W. H. Hope) a copy of Hobart's work on "Worcester China," and a cheque in acknowledgment of their appreciation of the way in which all the arrangements had been carried out in connexion with that visit.

The steps taken by the Sunderland Association with respect to the action of the Operative Joiners' Societies in relation to non-union men working for members of the Federation were reported upon. The matter had been referred for further consideration by the Sunderland Conciliation Board to the Northern Centres Board.

The proposed revision of clauses 20 and 28 of the national form of contract in use by the Royal Institute of British Architects and the proposed agreement for sub-contracts were referred to a sub-committee.

The Industrial Disputes Board proposed to be established at the instance of the Board of Trade was discussed. It was mentioned that Mr. J. W. White (Sunderland), the President of the National Federation, had been asked to serve on the Board.

Mr. Robert J. Huntley (Sunderland), was appointed an auditor in the place of the late Mr. J. C. Hope (Newcastle).

GENERAL BUILDING NEWS.

CHURCH ALTERATIONS, ABERDEEN.

Under the guidance of Sir Robert S. Lorimer, A.R.S.A., the interior of St. Andrew's Episcopal Church, Aberdeen, has been reconstructed at a cost of about 2,500. A feature of the alterations is the addition of a new chancel screen of oak, a memorial to the late Dean Danson. Mr. Findlay, Edinburgh, was clerk of works, and the contractors were as follows: Mason—Mr. George Hall, carpenters—Messrs R. & J. Reid; painters—Messrs G. Donald & Sons; plasterers—Messrs James Bamchoie & Sons; heating—Mr. Robert Findlay; electric engineers—The Electric Engineering Company, Ltd.; lacquering brass work—Mr. J. A. Connor; plumber and brass work—Messrs John Blaikie & Sons; carved oak work—Mr. Nathaniel Grieve and Messrs J. W. Clow Bros. (Edinburgh).

GIRLS' SCHOOL, WALTHAMSTOW.

Mr. Charles J. Dawson, F.R.I.B.A., is the architect of the new High School for Girls, Walthamstow, the cost of which will be about 11,500.

NEW PRINTING WORKS, BRUNSWICK-STREET, S.E.

The new printing works of Messrs. Richards, Clay & Sons, Ltd., Brunswick-street, Stamford-street, S.E., is a concrete structure. The total frontage is about 250 ft. and the depth of the side of the north end is 96 ft. and at the south end 41 ft. There are, including the basement, four floors on the same general plan, and a fifth floor comprising the dining-room, kitchen, etc. The architect was Mr. P. G. Collinson, F.R.I.B.A. Mr. Alexander Dwyer, M.Inst.C.E., acted as consulting engineer for the ferro-concrete construction, and Mr. Frank Broadbent, M.Inst.E.E., was responsible for the electric power and light installation. The building is fitted with up-to-date appliances including the latest available methods of electric driving machinery and lighting, fire protection, and heating and ventilating apparatus. The latter was installed by Messrs. C. Kite & Co., of 132, Euston-road, from the designs of their engineer, Mr. M. H. Skelt. Mr. H.V.E. consists of a mechanical system capable of delivering into the building 50,000 cubic ft. of filtered, cold, or warmed fresh air per minute, and maintaining the temperature at 65° Fahr. during the coldest weather, and cooling the building in very hot weather. In addition to satisfying the requirements as to temperature and ventilation, eliminating dust from the air, etc., it was desired to minimise as far as practicable the constructional or builders' work in connexion with the system, and to locate the apparatus in the most suitable position for it without occupying too much floor space. The heaters, air-washer or filter and an arrangement for moistening the air are placed centrally on the first floor at the base of the light well; fresh air is drawn from the light well through the filter and heater by means of two pairs of electrically-driven fans, one above and the other under the heater, supplying the top floors and the two lower floors respectively. This arrangement permits of equalising the resistance in the distributing shafting has all the advantages of central distribution, and an unrestricted supply of fresh air. The air is distributed about the building through galvanised-steel shafting having outlets at the height of 8 ft. above the floors and fitted with valves the main shafts are also fitted with valves placed near the connexion to fan outlets. The supply of fresh cold filtered air is controlled by means of louvre valves at the back of the filter and heater, and the apparatus can be prevented water from the filter being drawn into the heater chamber; return air-flues are arranged to permit of the air from each floor being roused if desired. The supply of air to the floor and the temperature can be regulated separately, and the apparatus can be used for one or more floors as required; by-pass valves are arranged on each side of the heater to allow of the passage, if necessary, of cold air to the fan chambers for mixing with the heated air or modifying the temperature.

BUILDING TRADE IN GLASGOW.

The Dean of Guild, Mr. Francis Henderson, at a sitting of the Dean of Guild Court recently, reviewed the business of the Court for the past year. He pointed out that great depression had marked the condition of the trades most closely connected with the work of the Court. The immediate outlook seemed to give no indication of improvement. Whilst during the past year the number of linings showed no material decrease, the valuation were less by 140,000, than in the preceding twelve months, and both as regards linings and valuation it was the lowest in the past twenty years.

ELECTRICITY POWER STATION, EGHAM.

The Lord Mayor of London, Sir T. Vazeux Strong, laid the foundation-stone recently of the station of the Egham and Staines Electricity Company. In designing the buildings the engineers associated themselves with Messrs. W. & G. Gray, architects, Egham. The building—which is of Georgian design—will be 75 ft. long, giving an engine room 55 ft. long by 30 ft. wide, with offices for the staff and general public.

TRADE NEWS.

The Kimbolton Council School, Hunts, has recently been fitted with one of D. O. Boyd's hygienic ventilating grates, supplied by Messrs. O'Brien, Thomas & Co., Upper Titchard-street, London, and Excelsior Works, South Bermondsey.

Under the direction of Messrs. Jeffery Lacey, architects, Ashford, the "Boyle" system of ventilation (natural), embracing

yle's latest patent "air-pump" ventilators
air inlets, has been applied to the Picture
lace, Ashford, Kent.

The Eldon Church Hall, County Durham, is
being ventilated by means of Shipland's patent
inlet roof ventilators and special inlet
ventilators supplied by Messrs. E. H. Shorland
Brother, Ltd., of Fallowfield, Manchester.
A three-light stained glass window has
been erected on the south side of Middle-
ton Church, Manchester. The work has been
designed and executed by Messrs. Percy Bacon
Brothers, of London. The central light of the
window contains the figure of Christ as the
saviour, with St. James and St. Leonard in
the side lights. The same firm have just
erected a stained glass window in Littleham
Church, Eymouth. The subject of the window,
rich consists of three lights, is the three
kings, the centre light contains a figure of
Blessed Virgin, with Mary Magdalene
on the left and the side lights.
The work has been carried out under the
superintendence of Mr. G. H. Fellowes Prynne.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Proposed enlargement of school,
Rathfriland-street; Aberdeen School Board.

BIRMINGHAM.—Proposed alterations to work-
house, Mr. H. R. Peters, Clerk, Board of
Guardians, Berwick.

BIRMINGHAM.—Proposed school (3,000); Vicar,
Mary's Church, Beverley.

BIRMINGHAM.—School, Temple-road (13,786);
Mr. W. H. Ford, architect, 75, 77, 107, and
109, Cloughton-road, Birkenhead.

BIRMINGHAM.—Additions to infirmary; Mr.
H. Ward, architect, Paradise-street, Bir-
mingham; Mr. A. Rotheroe, builder, Icknield-
street, Birmingham.

BIRMINGHAM.—Extensions to public library
20, Mr. F. P. Duthart, builder, West-
minster-road, Bromley, Kent.

BIRMINGHAM.—Additions to school; Archi-
tect, Mr. A. W. Halden, Secretary, Educa-
tion Committee, Swansea Town Council.

BIRMINGHAM.—Library; Mr. R. L. Jones,
architect, Market-street, Carnarvon; Messrs.
J. D. Jones, builders, Bontnewydd.

BIRMINGHAM.—School (186 places);
architect, Mr. A. Rotheroe, builder, Icknield-
street, Birmingham.

BIRMINGHAM.—Thirty-eight houses on site ad-
joining Rainford-lane (7,340); Mr. C. Brown,
surveyor, Chelmsford Town Council.

BIRMINGHAM.—Alterations to Springfield
road, for the Clockhouse Co-operative
Society.

BIRMINGHAM.—Erection of annealing works,
Hydebank, for Messrs. W. Beardmore & Co.,
builders.

BIRMINGHAM.—Baptist Chapel, Abersfeld-
road; Mr. S. C. Fulkes, architect, Post Office
Corners, Colwyn Bay.

BIRMINGHAM.—Alterations to church school;
Messrs. J. D. Jones, builders.

BIRMINGHAM.—Drill hall; Mr. J. Liddington,
architect, Regent-street, Rugby; Messrs.
J. D. Jones, builders, Coronation-road,
Bromley.

BIRMINGHAM.—Additions to St. Andrew's
Church; Architect, care of the Building Com-
mittee, St. Andrew's Church, Darnley.

BIRMINGHAM.—Bank, Midland-road; Mr. A. Smith,
architect, Gordon-road, Derby.

BIRMINGHAM.—Additions to workhouse; Archi-
tect, care of Mr. H. E. Ferens, Clerk, Board of
Guardians, Durham.

BIRMINGHAM.—The following plans have been
passed:—Workshops and offices for Mr. C. H.
Hoskins; Mr. W. E. Box, architect; Mr. C. H.
Hoskins, builder. Additions to St. Cyprian's
Church, for Mr. L. C. Vaughan,
architect; Mr. E. H. Bullock, architect. Cine-
graph hall, Seaside, for Mr. H. Baker,
architect. Andrew Ford, architect. Addition to
St. Andrew's Church, for Mr. A. Ayard,
architect. Four houses, Mr. A. Ayard, builder.
Eight houses, Wainwright-road; Mr. William
Baker, builder. Additions and alterations,
Terminus-road, for Messrs. Bobby & Co.,
architects; Messrs. M. Martin &
Joseph Martin, builder. Addition to
St. Andrew's Church, for Mr. W. Wainwright,
architect; Mr. A. Ford, architect; Mr. W.
Baker, builder. The following plans have
been lodged:—Nine houses, St. Anthony's
Church, for Mr. J. P. Wenham; Mr. A. Ford,
architect. Four houses, Victoria-drive, for
F. G. Collins.

BIRMINGHAM.—Thirty-three houses for the
Bentley Collieries, Ltd.

BIRMINGHAM.—Alterations to boys' school and
additions to Wesleyan School; Architect,
care of Mr. R. T. Edington, Secretary, Educa-
tion Committee, Gateshead Town Council.

BIRMINGHAM.—Technical college, Woodend,
Jordanhill Estate, for the Glasgow Provincial
Committee for the Training of Teachers.
Buildings on site of Nos. 302-312, Buchanan-
street, Glasgow, for the Caledonian Railway
Company, 302, Buchanan-street, Glasgow.

BIRMINGHAM.—Two houses, Kelly-street; Mr.
William Kirkwood, builder, Greenock. Club-
house for Messrs. Reid & Co., Ltd.

BIRMINGHAM.—Proposed children's home;
Mr. W. Richardson, Clerk, Board of
Guardians, Guisborough.

BIRMINGHAM.—Church, Leek-road; Mr. T. God
win, builder, Hanley.

BIRMINGHAM.—Alterations and additions to
St. Stephen's Church; the Vicar.

BIRMINGHAM.—Inn for the Staines Brewery Com-
pany.

BIRMINGHAM.—Enlargement of school (900);
Mr. W. V. Bushell, Secretary, Education Com-
mittee, Norfolk County Council, Norwich.

BIRMINGHAM.—The following plans have been
passed:—Four houses, Lyndhurst-road; Mr.
F. C. Parsons, architect. Six houses, Lyndhurst-road;
Mr. W. H. Overton for Mr. C. J. E. Glover.
Plans have been lodged as follows:—For a
proposed factory, Occupation-road, Mr. W. H.
Overton, for Messrs. H. J. Green & Co., Ltd.
Proposed pier with hotel, theatre, etc., there-
on; Mr. H. Hayne Fox, architect, 12, Cavendish-
place, Brighton.

BIRMINGHAM.—Rebuilding front portion of Town
Hall (25,400); Messrs. Quibell, Sons, & Green-
wood, builders, Sculcoates-lane, Hull.

BIRMINGHAM.—Enlargement of Roman
Catholic School (240 extra places); the
Managers.

BIRMINGHAM.—Proposed infectious diseases ac-
commodation at infirmary, also educational
block of schools area; Mr. W. Stephens, Clerk,
Board of Guardians, Brentford.

BIRMINGHAM.—Weaving shed, Mill street,
for Messrs. J. Humphries & Sons, Ltd. Dy-
houses, Churchfields, for Messrs. Tomkinson &
Adam.

BIRMINGHAM.—Additional accommodation at
cottage homes; Mr. W. H. Risson, Clerk,
Board of Guardians, Lanchester.

BIRMINGHAM.—School, Everton-terrace (600
places); Mr. J. Legge, Secretary, Education
Committee, Liverpool Town Council.

BIRMINGHAM.—School; Messrs. Kidd & Herd,
builders, Kirkcaldy.

BIRMINGHAM.—Extensions to premises for the
Gatehead Co-operative Society.

BIRMINGHAM.—Women's infirmary and nurses' home
(6,800); Mr. W. Austin, Clerk, Board of
Guardians, Luton.

BIRMINGHAM.—School (15,500); Mr. T.
Groves, Secretary, Education Committee,
Leicester Town Council.

BIRMINGHAM.—Residence; Messrs.
F. Wills & Son, architects, St. Peter's Church-
yard, Derby.

BIRMINGHAM.—Hall; Architect, care of the Sec-
retary, Millom Recreation, Ltd.

BIRMINGHAM.—Eight houses, Catherine-street,
for the Glencairn Housing Society.

BIRMINGHAM.—Alterations and additions to St.
Bartholomew's Grammar School, Enborne-
road; Architect, care of the Trustees. Altera-
tions and additions to bank premises, Market-
place, for the London County and Midland
Bank, Ltd.

BIRMINGHAM.—School (15,285); Mr. J.
Douglass Hepacott, builder, Morpeth.

BIRMINGHAM.—School, Dimmock-street; Mr.
F. J. C. Poole, Secretary, Education Com-
mittee, Coseley Urban District Council.

BIRMINGHAM.—Fifty-two houses; Mr. T. F.
Harvey, Surveyor, Merthyr Town Council.

BIRMINGHAM.—Maize-flaking mill and store
(3,450); Mr. P. B. Rigg, architect, Frome;

BIRMINGHAM.—Shops on pier; Mr. P. Murch,
Surveyor, Portsmouth Town Council.

BIRMINGHAM.—Theatre and shops for the Port
Talbot Hippodrome Company.

BIRMINGHAM.—Eight houses (1,255); Mr. T.
Laker, Surveyor, Bourne Rural District
Council.

BIRMINGHAM.—The following plans have been
passed:—Alterations and additions to Duke
of Wellington Inn, Grasbrook-road, for Messrs.
Tennant Bros., Ltd.; four houses, Cambridge-
street and Lord-street, for Mr. T. Green; six
houses, Oakwood-road and Broom-lane, for
Messrs. Charles Green's Sons; alterations
and additions to "Advertiser" Works, Henry-
street, for Messrs. H. Garnett & Co., Ltd.;
extensions to premises, Rawmarsh-road, for
Messrs. Watt & Ferguson; eight houses, Hill
Top-lane, Kimberworth, for Mr. Tom Hill.
A plan has been lodged by Mrs. S. Cross for
three houses, Wilkinson-street.

BIRMINGHAM.—Iron foundry at works, Brownsover
Mill-road, for the British Thomson-Houston
Company, Ltd.

BIRMINGHAM.—Enlargement of St. Mary's Roman
Catholic Church; the Managers.

BIRMINGHAM.—School (4,800); Mr. W. V. Dixon,
Secretary, Education Committee, West Riding
of Yorkshire County Council, Wakefield.

BIRMINGHAM.—The following plans have been
passed:—Four houses, Balfour-road, for Mr.
F. H. Mellor; additions to premises, Wash-
ford-road, for the Effingham Steel Works and
Rolling Mills Company, Ltd.; four houses,
Mitchell-road, for Miss A. Hunt; three houses,
Shepperson-road, for Mr. Thomas Barker;
additions to premises, Attercliffe-road, for
Messrs. T. W. Ward, Ltd.; shops and offices,
Manchester-road and Lydgate-lane, for Mr.
R. Brightmore; eight houses, Swaledale-road,
for Mr. A. Waddington; alterations, Wool-
sack Inn, Upper Allen-street, for Messrs.
Tennant Bros., Ltd.; three houses, Writtle-
street, for Mr. W. Branton; six houses, Coupe-
road, for Messrs. Flowerday & Sons; four
houses, Redmires-road, Lodge Moor Hospital,
for the Sheffield Corporation Hospitals Com-
mittee; pavilion, Derbyshire-lane, for the
Sheffield Corporation Education Committee;
three houses, Tom-lane, for Mr. Wilson; house,
shops, offices, and stores, Ecclesall and Cem-
etery roads, for the Sheffield and Ecclesall
Co-operative Society, Ltd.; fifteen houses,
Hawthorn and Skelwith roads, for Mr. F.
Gosling; twelve houses, Elmham and Waverley
roads, for Messrs. W. & E. Sandler; altera-
tions to Haymarket (late Tontine Hotel) for
executors of late Mr. E. Bingham; six houses
Bailhouse-road and Oaks-lane, for Messrs.
Osprey Bros., stores, Aldincourt, for Sir
W. C. Leng & Co., Ltd.

BIRMINGHAM.—Factory and warehouses
(5,000); Mr. A. Williams, architect, High-
street, Shrewsbury; Mr. T. Price, builder,
Welsh Bridge, Shrewsbury.

BIRMINGHAM.—Cottage hospital; Mr. F. J.
Parkinson, architect, 9, Richmond-road, Black-
burn.

BIRMINGHAM.—The following plans have been
passed:—Annex to foundry, Trafford Park,
for Messrs. Royce, Ltd.; extension of works,
Ogden-street, for Messrs. Sutcliffe & Bingham,
Ltd.; eight houses, Howard-street, for Mr.
H. C. Jones; eleven houses, Lime-grove, for
Mr. Thomas Emery; reconstruction of works,
First-avenue, for the Ford Motor Company
(England), Ltd.; ten houses, Norton-street, for
Mr. Thomas Hames; reconstruction of
works, Land-street, for Mr. J. D. Campbell.

BIRMINGHAM.—School; Messrs. Scott &
Clark, architects, Regent-chambers, Wednes-
bury. Workshop and offices, Brook street, for
the Tipton Tube Company.

BIRMINGHAM.—The following plans have been
passed:—Three houses, Empire-road, for Mr.
L. Blatchford; alterations to "Hatley St.
George" for Messrs. Outley & Lawrence;
eleven houses, Plasmoor, for Mr. J. W.
Chapple; motor garage, for the Imperial Hotel
Company; alterations and additions to Grand
Hotel for Mr. J. Gillet; alterations to hotel
for the Victoria and Albert Hotel Company.

BIRMINGHAM.—Improvements to school (1,500);
Mr. A. R. S. Halliday, Secretary, Education
Committee, Herts County Council, Hertford.

BIRMINGHAM.—Additions to tile works; Messrs.
A. Wood & Son, architects, Town Hall, Tun-
stall; Messrs. Grants, Ltd., builders, Moor-
land-road, Burslem.

BIRMINGHAM.—Mission church, Little Factory-
street; Architect, care of the English Baptist
Trustees.

BIRMINGHAM.—Proposed school (800
places); Mr. G. D. Hugh Jones, Secretary,
Education Committee, Harwick Town Council.

BIRMINGHAM.—Workhouse laundry (460);
Mr. F. Oakley, Clerk, Board of Guardians,
Uppingham.

BIRMINGHAM.—Additions to school, Clarendon
street (124 extra places); the Managers.

BIRMINGHAM.—Central tramway office on site of
St. Paul's-buildings, The Bridge; Mr. R. L.
Horsfield, Tramways Manager, Walsall Town
Council. A plan has been passed for exten-
sions to a factory in Wolverhampton-street
for Messrs. J. Bailey & Co.

BIRMINGHAM.—Drill hall (1,025); Messrs. Burl
& Vick, builders, Market-street, Poole.

BIRMINGHAM.—Additions to sanatorium (320);
Messrs. Jos. Wilson & Co., builders, 14, Caro-
line-street, Wigan. The following plans have
been passed:—Alterations and additions to
Highfield Church of England Schools, Billinge-
road; the Trustees. Workshop, Pennyhurst
Mill, off Walgate, for Messrs. Darbyshire
Bros.

BIRMINGHAM.—Extensions to Queen
Victoria Nursing Institution; Mr. A. W.
Warrall, architect, Queen's-chambers, North-
street, Wolverhampton. Warehouses; Mr. F.
Beck, architect, Wulfruna-chambers, Wolver-
hampton; Mr. H. Norman, builder, Queen-
street, Wolverhampton.

BIRMINGHAM.—Schools, Brook-street and Castlegate
(290 and 540 places, respectively); Mr. J. H.
Mason, Secretary, Education Committee, York
Town Council.

See also our list of Competitions, Contracts,
on another page

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, xvii.; Auction Sales, xxiv.

Certain conditions below those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

OCTOBER 28. — **Salford.** — Extension of office accommodation on workhouse site at Eccles New-road. Premiums 20l. and 10l. Particulars from the Board of Guardians, Salford, Limited, to architects practising in Salford and district only.

OCTOBER 30. — **Holland.** — STAINED GLASS WINDOW. — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — **Bristol.** — ALTERATIONS IN THE GRAND HOTEL. — Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.

OCTOBER 31. — **Marylebone.** — NEW MUNICIPAL BUILDINGS. — Premiums of 100l., 75l., 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1. — **City of St. Petersburg.** — MONUMENT TO ALEXANDER II. — Particulars in our issue of August 13, 1910.

NOVEMBER 17. — **Nottingham.** — BAPTIST CHURCH AND PREMISES. — Limited to Nottingham architects. Assessor, Mr. H. W. Wills, A.R.I.B.A. Particulars from Messrs. Rorke & Jackson, solicitors, King-street, Nottingham.

NOVEMBER 30. — **Cardiff.** — TECHNICAL INSTITUTE. — The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to other competitors. Mr. J. S. Gibson, assessor.

NOVEMBER 30. — **Hastings.** — EAST SUSSEX HOSPITAL. — The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

DECEMBER 29. — **Glasgow.** — DESIGN FOR A BRIDGE. — Designs are invited (Alexander Thomson Travelling Scholarship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 1, 1912. — **Rochdale Infirmary.** — EXTENSIONS. — Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 29, 1912. — **Montevideo.** — Government palaces (premiums, 2,125l. and 850l.) and town improvement scheme (premiums, 1,000l., 600l., and 425l.). Conditions may be seen at the Board of Trade, 73, Basinghall-street, E.C.

JANUARY 31, 1912. — **Australia.** — DESIGNS FOR FEDERAL CAPITAL CITY. — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars.

JULY 1, 1912. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf.

NO DATE. — **Armadale.** — Public hall and offices, to cost 2,500l. Premiums of 15l. and 10l.

NO DATE. — **Bolton.** — Miners' Federation Hall and Offices. — Limited to architects within twenty-five miles of Bolton. Premiums 50l. and 25l. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernihough, 7, Fold-street, Bolton.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 14. — **St. y-Nyll.** — COTTAGES, ETC. — Erection and completion of two cottages, and adaptation of a set of farm buildings. Plans and specification sent, and quantities from Mr. T. Mansel Franklin, Clerk of the C.C. Glamorgan C.C. Offices, Westgate-street, Cardiff.

OCTOBER 16. — **Bedford.** — CHILDREN'S HOME, KEMPSTON. — The Guardians invite tenders for alterations and repairs to The Lodge, Kempston, in accordance with plan, etc., which may be inspected at the Union Offices, 115, High-street, Bedford.

OCTOBER 16. — **Greenwich.** — REPAIRS. — The B.C. invite tenders for repairs and other work at the late Lee Board Offices, Old Charlton. Specification can be seen, and form of tender obtained, at the Borough Engineer's Office, Town Hall, Greenwich.

OCTOBER 16. — **Kirkham.** — COTTAGES. — The Fylde Industrial Co-operative Society, Ltd., invite

tenders for the building and completion of three cottages at Sunny Bank, Kirkham. Plans, etc., can be seen at the Board-room, Foulton-street, Kirkham.

OCTOBER 17. — **Aberystwyth.** — WARDS. — Erection of isolation wards. Plans and specifications at the Borough Surveyor's Office. Mr. Rees Jones, Borough Surveyor, Corporation Offices, Smithfield-road, Aberystwyth.

OCTOBER 17. — **Sherburn.** — SCHOOL. — The C.C. of Durham invite tenders for a new school for about 300 scholars at Sherburn. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. W. Ruwworth, Shire Hall, Durham.

OCTOBER 18. — **Kinsale.** — COTTAGES. — Kinsale R.D.C. invite tenders for building forty-five cottages, in accordance with the plan, etc., to be seen at the Council Office.

OCTOBER 18. — **Newport.** — Sale of WIGHT. — UNDERMINING. — The Guardians invite tenders for underpinning, etc., according to specifications, to be seen at the Workhouse.

OCTOBER 18. — **Rochdale.** — GOODS SHED. — Lancashire and Yorkshire Railway Directors invite tenders for the erection of a goods shed at Fishwick-street Goods Yard, Rochdale. Plans can be seen, and bills of quantities, etc., obtained, on application at the Engineer's Office, Hunt's Bank, Manchester.

OCTOBER 20. — **Stables.** — The Corporation invite tenders for the erection of stables, together with loose boxes, hay loft, messroom, and residence, in Chapman-street Yard. Drawings, etc., may be seen at the office of Mr. Joseph H. Hird, City Architect, Town Hall, Hull. Quantities obtained upon a deposit of 2l. 2s.

OCTOBER 20. — **Forth.** — SCHOOL. WORKS. — Rhondda U.D.C. invite tenders for alterations and additions to the girls' and infants' departments of the Forth Council School. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the office of the Architect, Mr. Jacob Rees, Hillside Cottage, Pentre, upon production of a receipt from the Accountant of the Council for the required deposit of 2l. 2s.

OCTOBER 20. — **Skelmanthorpe.** — SCHOOL. — The West Riding Education Committee invite whole or separate tenders for the erection of a new infants' school and special subjects' centre. Plans may be seen, and specifications, etc., obtained, on application to the Education Architect, County Hall, Wakefield. A sum of 1l. must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

OCTOBER 21. — **Thurston.** — PREMISES. — Shed premises at Lane Side Mills, Thurston, for Messrs. Charles Searth & Sons, Ltd. Plans, etc., may be seen, and quantities obtained, at Morley Offices of Mr. T. A. Buttery, L.R.I.B.A., architect, Queen-street, Morley, and 1, Basinghall-square, Leeds.

OCTOBER 21. — **Pwllcarl.** — HOUSES. — Twenty workmen's houses for the International Coal Company, Ltd., at Pwllcarl, near Bridgend. Plans, etc., may be seen at the International Colliery Offices, Blaengwynf.

OCTOBER 23. — **East Preston.** — LATRINES. — Tenders are invited for the remodelling of the latrines and other works at the Workhouse, East Preston, near Worthing. A copy of the plans, etc., may be seen at the Workhouse.

* OCTOBER 24. — **Northfield.** — SCHOOL. — The King's Norton and Northfield U.D.C. invite tenders for new Council school at Woodgate. See advertisement in this issue for further particulars.

OCTOBER 24. — **Oakdale Model Village.** — HOUSES. — Tenders are invited for the erection of 100 (or more) workmen's houses, for the Oakdale Navigation Colliery Company, Ltd. Plans, etc., may be seen at the offices of Mr. A. P. Webb, M.S.A., architect and surveyor, Tredgar-chambers, Blackwood.

OCTOBER 24. — **Winchester.** — SCHOOL. — The Winchester Corporation invite tenders for new elementary school on the Danemark Estate. See advertisement in this issue for further particulars.

OCTOBER 25. — **Oldham.** — SHOPS. — The Markets Committee invite tenders for the builders' work required to be done in the erection and completion of a number of lock-up shops adjoining the Victoria Market Hall. Plans, etc., may be seen, and bills of quantities, etc., obtained, upon application at the Borough Surveyor's Office.

OCTOBER 25. — **Yatalyera.** — HOUSES, ETC. — Erection of twenty-eight dwelling-houses and premises, and the construction of a road. Plans may be seen, and specification from Mr. John Morgan, Engineer and Surveyor, Council Offices, Pontardawe. Deposit of 5l.

OCTOBER 26. — **Boroughbridge.** — REPAIRS, ETC. — The West Riding Small Holdings and Allotments Committee invite whole tenders for the

following works:—(1) Repairs to Oakroyd Farm, Lower Dunsforth, near Boroughbridge; (2) alterations and additions to farm at Upper Dunsforth. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Treasurer, County Hall, Wakefield. A sum of 1l. in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield. — F.E.S.T.

OCTOBER 27. — **Felling.** — HOUSE. — A superintendent's house and stable, etc., at the County Police-station, Felling-on-Tyne. Plans, etc., may be seen, and bills of quantities obtained, at the County Surveyor's Office, Shire Hall, Durham.

OCTOBER 27. — **Romford.** — ALTERATIONS. — The U.D.C. invite tenders for the execution of certain alterations required to the Council offices. Specifications, etc., can be obtained, and the drawings inspected, at the offices of the Surveyor of the County of Essex, Romford.

OCTOBER 28. — **Belturbet.** — DRESSING. — Drapery establishment in Belturbet, for Messrs. Quinn Bros. Plans, etc., by Mr. P. J. Brady, C.E., architect, Broomfield House, Ballyhaise, Ireland.

OCTOBER 30. — **Rathmines.** — LIBRARY. — The U.D.C. of Rathmines and Rathgar invite tenders for the erection of a Carnegie Library and Technical Institute opposite the Town Hall, Rathmines-road. The drawings, etc., prepared by the Council's architects, Messrs. Batchelor & Hicks, 86, Morrison-square, may be inspected at the offices of the quantity surveyors, Messrs. Patterson & Kemper, 89, Lower Leeson-street, from whom copies of the bills of quantities may be obtained on receipt of the sum of 2l. 2s.

OCTOBER 30. — **Uxbridge.** — LAVATORY. — Uxbridge U.D.C. invite tenders for the erection of a public lavatory at the Market-house, Uxbridge. Plans, etc., can be seen at the offices of the Council's architects, Messrs. William L. Eves, F.R.I.B.A., F.S.I., 54, High-street, Uxbridge.

* OCTOBER 30. — **Waltham Cross.** — EXTENSION OF POST-OFFICE. — The Commissioners of H.M. Works and Public Buildings invite tenders for extension of post-office. See advertisement in this issue for further particulars.

OCTOBER 31. — **Tywardreath.** — FARMHOUSES. — The Tywardreath Committee of the Cornwall C.C. invite tenders for the erection of three farmhouses, three sets of farm buildings, alterations and adaptations to existing buildings, and new walls and fences at Landretho Farm, Tywardreath, near Par. For plans, specifications, etc., apply to the County Land Agent, Public Rooms, Truro.

NOVEMBER 2. — **King's Lynn Union.** — ALTERATIONS. — The Guardians of the King's Lynn Union invite tenders for alterations at the isolation ward of the Workhouse. Plans, etc., can be seen at Messrs. Jarvis & Son's, architects, Lynn.

* NOVEMBER 6. — **Dartford.** — SCHOOL. — The Kent Education Committee invite tenders for new Council school at Dartford (Maypole Estate). See advertisement in this issue for further particulars.

* NOVEMBER 6. — **Tunbridge Wells.** — SCHOOL. — The Kent Education Committee invite tenders for new county school for girls. See advertisement in this issue for further particulars.

* NOVEMBER 10. — **Stanwell.** — ISOLATION HOSPITAL. — The Staines Joint Hospital Committee invite tenders for Isolation Hospital for Infectious Diseases at Stanwell, Middlesex. See advertisement in this issue for further particulars.

* NOVEMBER 13. — **London.** — NEW OFFICES. — The Commissioners of H.M. Works and Public Buildings invite tenders for new offices for the Board of Agriculture and Fisheries. See advertisement in this issue for further particulars.

* DECEMBER 2. — **Tewkesbury.** — ISOLATION HOSPITAL, ETC. — The Tewkesbury Joint Hospital Board invite tenders for an Isolation Hospital with outbuildings, and for alterations and additions to existing Hospital at Fradington, near Tewkesbury. See advertisement in this issue for further particulars.

NO DATE. — **Consett.** — CHURCH, ETC. — Erection of Primitive Methodist church, Consett, for Messrs. Davidson & Son, architects, 1, Eldon-square, Newcastle-on-Tyne.

NO DATE. — **Middlebrough.** — ALTERATIONS. — For alterations to Carlin How branch premises for the East Cleveland Co-operative Society. Messrs. Archibald & Lee, architects, 21, Albert-road, Middlebrough.

NO DATE. — **Youghal.** — HOUSE. — Erection of dwelling-house at Propoque, Youghal. Plans and specifications from Mr. J. Murphy, A.M.Inst.C.E., Watercourse Mill-road, Cork.

ENGINEERING, IRON, AND STEEL.

data given at the commencement of each week is the latest date when the tender, or names of those willing to submit tenders, be sent in.

OCTOBER 14.—Milford.—WATERWORKS.—REPAIRS.—Bathmullen Waterworks. Plans and specifications, by Mr. J. J. S. Barnhill, Inst.C.E., Baltic-buildings, Fosse-street, onondy.

OCTOBER 15.—Swansea.—ELECTRIC LIGHT INSTALLATION AT CATTLE MARKET AND SLAUGHTERHOUSE.—Particulars, etc., may be obtained upon application to the Borough Electrical Engineer, Mr. L. Prusmann, Electricity Department, 24, Swansea, upon payment of 11. 1s.

OCTOBER 15.—Manchester.—HYDRAULIC POWER.—Manchester Waterworks Committee invite tenders for sinking and lining trial bore at Post-street pumping-station. Specifications, etc., on application to the Secretary, Waterworks Offices, Town Hall, Manchester.

OCTOBER 19.—Manchester.—BOILER-HOUSE.—Electricity Committee of the Manchester Corporation invite tenders for alterations to 2 boiler-house, at their Stuart-street station, in connexion with the installation of two new boilers. Forms of tender bills of quantities may be obtained on application to Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester, payment of a fee of 11. 1s.

OCTOBER 19.—Manchester.—SWITCHBOARD.—Manchester Corporation Electricity Committee invite tenders for the supply of a high-tension switchboard, to be erected at their Mynshall Mill sub-station. Specifications, etc., may be obtained on application to Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester, payment of a fee of 11. 1s.

OCTOBER 19.—Oldham.—PIPES, ETC.—The Oldham Corporation invite tenders for certain cast-iron, steel, and concrete pipes, front plates, required at their sewage works, Slacks, Foxderton-lane, Chaderton. Copies of the specifications, etc., can be obtained at the Oldham Surveyor's Office.

OCTOBER 20.—Belfast.—GASHOLDER.—The Gas Committee of the Belfast Corporation invite tenders for the erection of a spiral-guided gasholder of 5,000,000 cubic ft. capacity and other fittings. The drawings, etc., may be obtained from Mr. J. D. Smith, Engineer and Manager, Gas Department, at a fee of 21. 2s.

OCTOBER 21.—Kneassall.—BORHOLES.—Tenders invited for putting down a borehole near All, Notts, for Earl Manvers. Specifications, etc., may be obtained from Mr. W. H. H. R. C.E., Albion-chambers, King-street, Lougham. Deposit of 11. 1s.

OCTOBER 21.—Truro.—TELEPHONE SYSTEM.—The Truro Corporation invite tenders for the installation of a private telephone system for the new county offices at Truro. Any information required can be obtained from the clerk of the works.

OCTOBER 23.—Buxton.—BOILER.—Buxton Gas Committee invite tenders for the supply of a 12 ft. long by 4 ft. 3 in. diameter boiler, with further particulars, etc., may be obtained on application to Mr. G. Shaw, Engineer and Manager, Gasworks, Buxton.

OCTOBER 24.—Newcastle-upon-Tyne.—TAMMERS AND THE BARS.—The Tramways Committee of the Newcastle-upon-Tyne Corporation invite tenders for the supply of (a) 100 yds. of 10 in. bars, in accordance with the specification, etc., a copy of which can be obtained from the Secretary, Town Hall, Newcastle-upon-Tyne, on payment of the sum of 11. 1s. for each copy.

OCTOBER 24.—Willesden.—IRON FENCING.—The Willesden D.C. invite tenders for supply of 100 yds. of unclimbable iron fence, to be erected at Roundwood Park, Harlesden-road. Advertisement in this issue for further particulars.

OCTOBER 25.—Enfield.—TELEPHONE INSTALLATION.—Edmonton Guardians invite tenders for installation of eight telephone instruments and the overheading of two existing line exchanges at Chase Farm School. Specifications may be obtained from Messrs. May & Hawes, Consulting Engineers to the Guardians, at Caxton House, Westminster, on payment of 11. 1s.

OCTOBER 31.—Plymouth.—DOCK WORKS.—The Corporation of the Great Western Railway invite tenders for the reconstruction of a portion of the quay at the Great Western Docks. Plans, may be seen, and forms of tender, etc., may be obtained from the Engineer at Plymouth North-road, Station.

OCTOBER 31.—Dublin.—PUMPS.—The Improvement Committee of the Corporation invite tenders for electrically-driven centrifugal pumps, capable of dealing with 15,000,000 gallons per diem, together with other works, near Ringsend pumping-station. Specifications, may be inspected at the office of the Engineer, City Hall, Dublin, and at the office of the consulting engineer, Mr. John S. West, Inst.C.E., 6, The Sanctuary, West-End, Dublin. Forms of tender, etc., may be obtained on payment of the sum of 51. 5s. Crossed cheques only will be received in payment.

PAINTING, PAINTING, MATERIALS, ETC.

OCTOBER 16.—Bradford.—COLOURING, ETC.—The Bradford Corporation invite tenders for colouring, cleaning, and repairs to be done at the Cartwright House, No. 1, Grand-parade-lane. Plans, etc., may be seen, and specification, etc., on application to the City Architect, Town Hall, Bradford.

OCTOBER 16.—Bristol.—CEMENT, ETC.—The Sanitary and Improvement Committee of the Corporation invite tenders for the supply, during the year 1912, of the following stores:—Cement, drain pipes, and general building materials, etc., may be obtained at the offices of the City Engineer, 53, Queen-square, Bristol, on payment of 10s.

OCTOBER 16.—Stockton.—PULLING DOWN.—The Education Committee invite tenders for the pulling down of the infants' school, cottage, and houses situate in Regent-street, Nelson-terrace, and Ropery-street, Stockton-on-Tees. Full particulars, etc., can be obtained upon application to the architect, Mr. E. G. Fletcher, Prince Regent-street, Stockton-on-Tees.

OCTOBER 17.—Manchester.—PITCH.—The Tramways Committee of the Manchester Corporation invite tenders for the supply of pitch for paving purposes. Specifications, etc., may be obtained on application to Mr. J. M. McElroy, General Manager, Corporation Tramways, 65, Piccadilly, Manchester.

OCTOBER 18.—Bradford.—CLEANING, ETC.—The Corporation invite tenders for internal cleaning and painting required to be done at the City Hospital, Leeds-road. General conditions of contract may be seen, and copies of the bill of quantities obtained on application to the City Architect, Town Hall, Bradford.

OCTOBER 18.—Chard.—GRANITE.—The Corporation invite tenders for the supply and delivery of 2,955 tons, or thereabouts, of broken granite. General conditions, etc., can be obtained from Mr. Ernest W. Hearn, C.E., Borough Surveyor, Chard, Somerset.

OCTOBER 18.—Stockton-on-Tees.—PAINTING.—For outside painting at the following public elementary schools:—Hillery-road, Newton, Oxbridge-lane, and Bailey-street. Specifications from Mr. M. H. Sykes, Borough Engineer, Town Hall, Stockton-on-Tees.

OCTOBER 19.—Stepney.—PAINTING, ETC.—The Stepney Guardians invite tenders for exterior painting and repairing works at their Workhouse, St. Leonard-street, Bromley-by-Bow. E. Specifications, etc., can be obtained at the office of Mr. T. G. Shaw, Clerk, Guardians' Office, Barnes-street, Stepney, E., on payment of the sum of 51. 5s. as a deposit.

OCTOBER 21.—Glasgow.—STORES.—Glasgow and South-Western Railway Directors invite tenders for the supply of stores. Detailed schedules and specifications can be obtained on application to Mr. R. F. Harrison, Store Superintendent, Kilmarnock.

OCTOBER 24.—Newcastle-upon-Tyne.—GRANITE SETTS AND CURBS.—The Tramways Committee invite tenders for granite setts and curbs. Specification, etc., from the City Engineer, Town Hall, Newcastle-upon-Tyne, on payment of the sum of 11. 1s.

OCTOBER 24.—Walsdale.—GRANITE.—The U.D.C. invite tenders for the supply of 200 to 400 tons of granite, and 40 tons of granite chippings. Samples of material to be supplied must be forwarded to Mr. Herbert Walker, C.E., the Council's Surveyor, Walsdale.

OCTOBER 24.—West Hartlepool.—ROAD MATERIALS AND SEWER PIPES.—The Corporation invite tenders for the supply during the year of road material, etc. Specifications, etc., can be obtained at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

OCTOBER 26.—Romford.—GRANITE.—Romford U.D.C. invite tenders for the supply of about 725 tons of best blue Gurnesey granite. Forms of tender can be obtained on application to Mr. J. Turvey, the Surveyor, Council Offices, Romford.

OCTOBER 28.—Dublin.—STORES.—The Directors of the Great Northern Railway Company (Ireland) invite tenders for the supply of stores for twelve months. Forms of tender can be obtained from the Secretary, Amiens-street, Terminus, Dublin, on payment of 1s. for each form.

OCTOBER 28.—Huyton-with-Roby.—MACADAM.—The U.D.C. invite tenders for the supply of (1) 500 tons of 2-in. macadam; (2) 500 tons of 2-in. macadam. Mr. G. W. Swift, Clerk to the Council, Public Offices, Huyton.

OCTOBER 28.—Freston.—FURNITURE.—Leicestershire Education Committee invite tenders for the supply of general furniture to the schools in the administrative county area. Particulars, etc., may be obtained on application to Mr. H. Lloyd Shaw, Director of Education, County Offices, Preston, on payment of a fee of 11. 1s.

NOVEMBER 4.—Hampton Wick.—GRANITE.—The U.D.C. of Hampton Wick invite tenders for the supply of about 150 yds. of granite. Mr. Harold Fawcett, Clerk to the Council, Council Offices, High-street, Hampton Wick.

ROADS, SANITARY AND WATER WORKS.

OCTOBER 16.—Briton Ferry.—SEWERAGE.—The U.D.C. invite tenders for the construction of about 440 lin. yds. of brick and concrete sewer, 5 ft., and about 40 lin. yds. of stoneware pipe sewer 15 in. diameter, for the drainage of the western district of Briton Ferry. Drawings, etc., may be seen, and bill of quantities obtained, at office of Mr. H. Alex. Clarke, Engineer and Surveyor, U.D.C. Offices, Briton Ferry, on payment of 51. 5s.

OCTOBER 16.—Plymouth.—MAKING-UP.—For making-up and completing the following lanes:—North-street-lane, Clidley-road-lane, Grand-parade-lane No. 1, Grand-parade-lane No. 2. Plans, etc., may be seen at office of Mr. James Paton, Borough Engineer, Municipal Offices, Plymouth.

OCTOBER 16.—Romford.—DAGENHAM SEWER.—The R.D.C. invite tenders for the construction of about 100 yds. of 7-in. diameter stoneware pipe sewer, with manholes, etc., in Dagenham-lane, Dagenham. Plans, etc., may be seen, and form of tender obtained, on application to the Surveyor to the Council, Victoria-chambers, Romford.

OCTOBER 17.—Brentford.—REMOVAL OF SEWAGE SLUDGE.—Brentford U.D.C. invite tenders for the removal of the sludge from their sewage works in Baling-road, Brentford, for the term of three years. Forms of tender, etc., may be obtained on application to Mr. J. W. Croxford, the Surveyor, at his office, Clifden House, Boston-road, Brentford.

OCTOBER 18.—Barnsley.—SEWER.—The R.D.C. invite tenders for laying a 9-in. sewer, with all necessary manholes, etc., at Woolley Colliery, Barnsley, near Barnsley. Plans may be seen, and particulars obtained, at offices of Messrs. Crawshaw & Wilkinson, Surveyors, 13, Regent-street, Barnsley.

OCTOBER 18.—Kinsale.—DRAINAGE.—Kinsale R.D.C. invite tenders for drainage work at Rallinaboy Burial Ground, in accordance with the plan, etc., which may be seen at the Council Office, and also at the office of Mr. R. Evans, C.E., 53, South Mall, Cork.

OCTOBER 18.—Llantrisant.—DRAINS.—The Glamorgan C.C. invite tenders for surface-water pipe drains and building catchpits along the Llantrisant and Cowbridge and Llantrisant and Llanharan main roads, near Talbot, Llantrisant. Plans, etc., may be seen, and copies of the bill of quantities obtained at the Council Office, Llantrisant, and at offices of Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

OCTOBER 21.—Bacup.—PAVING.—The Corporation of Bacup invite tenders for the paving, etc., of streets. Plans may be seen at the office of Mr. W. H. Elce, A.M.Inst.C.E., Borough Engineer, and specifications, etc., obtained, on payment of 11. 1s.

OCTOBER 23.—Abbots Langley and Aldenham.—EXTENSION OF SEWERS.—Watford R.D.C. invite tenders for small extensions of sewers in the parishes of Abbots Langley and Aldenham (in all about 485 yds. run of 9-in. pipe and seven manholes). Plans, etc., may be seen, and a copy of quantities obtained at the Surveyor's Office, 9, Market-street, Watford, upon payment of 11. 1s.

OCTOBER 23.—Bedwas.—STREET WORKS.—Tenders are invited for forming streets, drains, etc., on the Pant Gwa Estate at Bedwas. Plans, etc., can be seen, and quantities obtained, at the office of Messrs. Gibson, Parry Williams & Co., architects and surveyors, Pontypriid.

OCTOBER 23.—Mountain Ash.—FOOTWAY.—The U.D.C. invite tenders for the improvement of the footway west side of Llanworn-road, Mountain Ash. Drawings, etc., may be seen, and form of tender, etc., obtained, at the Surveyor's Office, Town Hall, Mountain Ash.

OCTOBER 24.—Bridlington.—SEWERAGE WORKS.—New sewers in South Cliff-road, Fambrook-terrace, Neptune-street, and Horsforth-avenue. Plans, etc., may be seen at the office of the Borough Engineer, Mr. E. R. Matthews, and bill of quantities, etc., may be obtained, on payment of 11. 1s.

*** OCTOBER 24.—Willesden.—CONCRETE TUBES.**—The Willesden D.C. invite tenders for the supply of about 100 yds. of concrete tubes in watercourse at rear of Denzil-road. See advertisement in this issue for further particulars.

OCTOBER 25.—Dukinfield.—EXTENSIONS AT WORKS AT BRADLEY HURST.—Stalybridge and Kirkfield Joint Sewerage Board invite tenders for the construction of extensions of the above works. Plans, etc., may be obtained upon application to the Engineer, Mr. J. P. Wilkinson, M.Inst.C.E., at his office, 201, Cathedral-street, Manchester, on a deposit of 21. 2s.

OCTOBER 30.—Aldershot.—GAS MAINS.—The Aldershot Gas, Water, and District Lighting Company invite tenders for laying of gas mains in various districts. Form of tender, etc., on application, and route plans inspected at the Chief Office of the Company, Victoria-road, Aldershot.

OCTOBER 30.—Chelmsford.—SEWERS, ETC., AT INGLESTONE.—The R.D.C. invite tenders for laying about 743 lin. yds. of 9-in. stoneware pipe sewer, with manholes, etc., also about 110 lin. yds. of 3-in. cast-iron water main, valves, etc. Forms of tender, etc., may be obtained, and the plans inspected, at the offices of the Engineer, Mr. James Dewhurst, Bank-chambers, Chelmsford.

OCTOBER 30.—Henbridge.—SEWERAGE.—Winchester R.D.C. invite tenders for the construction of a system of sewerage for the parish of Henbridge, also the construction of sewage disposal works. Plans, etc., by the engineers, Messrs. A. P. I. Cotterell & Carr, 25, Baldwin-street, Bristol, and Mr. E. A. Rankin, Bourton Dorset, may be seen at the office of Mr. E. N. Martin, Clerk to the Council, Union Offices, Winchester, Som. Copies of the form of tender, etc., may be obtained from Messrs. A. P. I. Cotterell & Carr, on payment of the sum of 31. 5s.

OCTOBER 31.—Snydale.—SEWERAGE WORKS.—Featherstone U.D.C. invite tenders for the construction of works of sewage disposal at Snydale, near Featherstone, in the West Riding of Yorkshire. The plans may be inspected, and copies of the specification, etc., obtained, on application to Mr. Samuel Chesney, Engineer, Council Offices, Featherstone. Applications must be accompanied by a deposit of 51.

NOVEMBER 1.—Ebbw Vale.—SUBSIDIARY

ROADS, etc.—continued.

The date given at the commencement of each paragraph is the initial date when the tender, or the names of those willing to submit tenders, may be sent in.

Sewers.—The Ebbw Vale U.D.C. invite tenders for about thirty miles of stoneware, cast-iron,

and steel pipe sewers of 6-in., 9-in., and 12-in. diameter, with the necessary manholes, etc. Plans, etc., may be seen, and specification, etc., obtained, at the office of Mr. P. J. Thomas, the Town Engineer and Surveyor. A deposit of £1, which must be in postal orders, for a copy of the form of tender and bill of quantities.

NOVEMBER 1.—Wanstead.—MARTIN & Wanstead U.D.C. invite tenders for making the streets known as Ingatstone-road, Margaretting-road, Manor Park, E. Corner specification, etc., can be obtained, and cost form inspected, at the Council Offices, Wanstead (Surveyor's Department).

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Applicants to be at.
*ASSISTANT TECHNICAL INSTRUCTOR	London C.C.	See advertisement in this issue	Oct.
*CHIEF ASSISTANT (EDUCATIONAL DEPARTMENT)	Essex C.C.	240, per annum	Oct.
*JUNIOR ASSISTANT (EDUCATIONAL DEPARTMENT)	Essex C.C.	130, per annum	Oct.
*CHIEF ASSISTANT (OFFICE FOR GENERAL CO. WORK)	Essex C.C.	200, per annum	Oct.
*JUNIOR ASSISTANT (OFFICE FOR GENERAL CO. WORK)	Essex C.C.	130, per annum	Oct.
*ENGINEERING ASSISTANT AND DRAUGHTSMAN	Hackney B.C.	See advertisement in this issue	Oct.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BECK'S WHARF, ISLEWORTH, MIDDLESEX.—At the Mart	Mr. Woods	Oct.
*STOCK & PLANT OF STONE, SLATE, TILE, Etc., GREENWICH, S.E.—On the Premises	H. W. Smith	Oct.
*FREEHOLD BUILDING PROPERTY, EDGWARE.—At the Mart	Walton & Lee	Oct.
*FREEHOLD FACTORY PREMISES, LEYTON.—At the Mart	Edwin Fox, Bondfield, Burnetts, & Baddley	Nov.

LAW REPORTS.

Ancient Lights.

The case of Darby v. Matthews was heard in the Vacation Court a few days ago by Mr. Justice Lush.

It was an action, said Mr. Bramwell Davis, K.C., counsel for the plaintiff, for an injunction to restrain the defendant from interfering with his ancient lights. The plaintiff, ex-plaintiff counsel, was a doctor residing at "Dunwich," Station-road, Harrow. The defendant occupied the adjoining house, and was building at the back of the premises to within a few inches of the plaintiff's window. Defendant, however, said his wall had reached as high as he intended it to; but behind the wall defendant was proposing to erect a one-story building, and further down the garden a three-story building, which defendant asserted would not interfere with the plaintiff's lights. Plaintiff did not know how high defendant intended to carry the building of the wall, and if it went no higher the plaintiff would be satisfied. And as to the three-story building, plaintiff would accept an undertaking not to interfere with his ancient lights.

Counsel for the defendant was agreeable to give an undertaking. At the same time, he pointed out that the wall and one-story building would not affect the plaintiff at all. With regard to the three-story building, according to the plans made, that would fall behind the line of a former obstruction there.

Finally an undertaking was given not to interfere with the plaintiff's lights, and the matter allowed to stand over, the trial of the action to be expedited.

Reinstatement after Fire.

At the Guildhall, before Alderman Sir John Bell, Messrs. Franks & Simons, builders, Mile End-road, were summoned at the instance of Mr. John Todd, District Surveyor, for having commenced to do certain building works without serving him with a "building notice."

The facts were not in dispute, and the notice had been given since the issue of the summons. Mr. Todd said the work in question was the reinstatement of a building after fire. The house—No. 9, Hutchison-street, Houndsditch—was let out in tenements, and two lives were lost in a fire there recently. The staircase and upper floors were now being rebuilt, and such work came within the section requiring notice to be given to the Surveyor. The work itself was in contravention of the most useful provision of the Act, which aimed at the prevention of fire spreading from one building to another.

Mr. Richards (the clerk): You have not summoned them for that.

Mr. Todd replied that there was no penalty attached to that. There was a penalty for failing to give notice, because when the Surveyor had that he could take steps to prevent anything being done in contravention of the Act. He could, if necessary, apply for an order on a builder to take down any structure that was irregular.

The defendants' manager regretted that they had omitted to give notice.

Sir John: That's all very well. You are builders, and ought to know your responsibilities. I shall impose a fine of 20s. and 3s. costs.—Morning Advertiser.

OBITUARY.

Mr. J. Ammonier, R.I.

We regret to announce the death, on October 4, after an operation, of Mr. James Ammonier, of No. 142, Adelaide-road, N.W., in his eightieth year. A native of Camberwell, Mr. Ammonier was for many years employed as a designer by a firm of calico-printers. In 1870 he exhibited in the Royal Academy rooms, and became an original member of the Royal Institute of Painters in Water-Colours, though working chiefly in oils. The Chantry Trustees bought his picture, "The Black Mountains," in 1905, for 400 guineas, and in 1899, "Sheep Washing in Sussex," for 300l. Sir N. Mappin purchased "An Englishman's Cottage Home" (R.A. 1873); "The Silver Lining of the Cloud" and "When the Tide is Out" are in the Manchester Gallery. In 1876 the Council of the Royal Manchester Institution awarded the Heywood Gold Medal to his "Toilers of the Field."

Sir Charles B. Lawes-Witterwong, Bart.

Sir Charles Bennet Lawes-Witterwong, who succeeded his father, the eminent agriculturist, Sir John Lawes, first Baronet, of Rothamsted, Herts, in 1900, died, aged sixty-eight, at his country seat, on Friday last, after an operation for appendicitis. He was educated at Eton and Trinity College, Cambridge, proceeding B.A. in 1866. He then devoted himself to the art of sculpture, and had a studio in Chelsea Bridge-road. He executed the great group of "The Punishment of Dirce," contributed to the Franco-British Exhibition at Shepherd's Bush, and to the Fine Art Exhibition in Rome of this year. In March, 1909, he was elected President of the Royal Society of British Sculptors. Sir Charles, when at Eton and Cambridge, gained many distinctions on the river and the running-path. He married, in 1869, Miss Marie A. R. Fontaine; the title passes to his only child, John Bennet Fontaine.

Mr. C. T. Mason, M.Inst.C.E.

The late Mr. Clayton Turner Mason, I.S.O., who retired a few months ago as Collector of Customs, Western Australia, was born in 1847 at Tarrington, Co. Hereford. On leaving King Edward's School, Birmingham, he learned engineering; in 1874 he entered the railway department, Public Works, New South Wales, and ten years afterwards was appointed provisionally Director of Public Works and Commissioner of Railways, and member of the Legislative and Executive Councils. He then became General Manager of the Western Australian Railways; but in 1891 relinquished that post for the Collectorship of Customs.

PATENTS.

APPLICATIONS FOR PATENTS.

21,085 of 1910.—Robert Wadsworth: Tar-spraying machine.

21,598 of 1910.—Charles Wesley Gray and the British Stone and Marble Company, Ltd.: Glazing bars for skylights, windows, and the like.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

21,724 of 1910.—Burger Eisenwerke Gesellschaft, mit beschränkter Haftung: Convert close and open fireplaces.

26,598 of 1910.—George Leadley: Step ladder.

27,445 of 1910.—George Moore: Blind roof fittings.

29,791 of 1910.—Alexis Gmüchel: Apparatus for cleaning chimneys.

29,905 of 1910.—William Duncan Took: Mechanism for actuating swinging window.

691 of 1911.—William Charles Lobbs: Revolving owl for chimneys, ventilating shafts, the like.

1,120 of 1911.—William Lloyd: Flush tanks or cisterns.

4,490 of 1911.—Joseph Gardner: Window fittings, more especially applicable to windows with hinged sliding sashes.

5,110 of 1911.—Otto Rehnitz: Process for production of foldable lathing for plaster.

14,576 of 1911.—Otto Herrmann: Roofing.

15,069 of 1911.—William Henry Tonks: Walter Sparks: Telescopic casement stay.

17,035 of 1911.—Dr. Fritz Treude: Protective device for closet seats.

17,450 of 1911.—Bernard Peter Smith: Combined siphon strainers and waste-pipe cleaners.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

September 23.—By CUMBERLAND & HOPKINS.

Quinton, Bucks.—Station-road Farm, 137 a. 2 r. 38 p. f.

September 26.—By WALTON & LEE.

Cottestroke, Northants.—Part of the Long-ham Estates, 5,290 acres, f. (including timber)

September 27.—By KIVELL & HARRIS.

Halwill, Devon.—Part of the Halwill Manor Estate, 882 acres, f.

September 29.—By BUCKLAND & SONS.

Sunningdale, Berks.—Prospect House, West-ern Cottage and Prospect Cottage, f.

October 2.—By JONES, LANE, & CO.

City. 30, Bush la., f., y.r. 90l.

October 3.—By ORRILL, MARKS, & BARLEY.

Harlesden.—High-st., Royal Oak p.h. f. (equity) By KNIGHT & CO.

Brompton.—42, Oringtonsq., n.t. 172 yrs., g.r. 10l., y.r. 150l.

By WILTSHIRE & CO.

Kensington.—50 and 52, Peel-st., f., w.r. 98l. 16s. 2d and 24s, Spring-st., n.t. 91 yrs., g.r. 5l., y.r. 90l.

St. John's Wood.—7, Belgrave rd., n.t. 381 yrs., g.r. 10l., y.r. 50l.

By JOSEPH E. WALTER.

Market Rasen, Lincs.—Small holdings, 73 a. 2 r. 23 p. f.

By J. C. PLATT.

Hammersmith.—32, Kilmst., f., y.r. 60l.

51, Bridge av., n.t. 32 yrs., g.r. 4l., p.

October 4.—By BUNCH & DUKE.

Bethnal Green.—147, Cambridge-rd. (s.), f., w.r. 27l. 8s.

Forest Gate. 159, Forest-la. (s.), f., y.r. 23l.

Leyton.—1 and 3, Lily-rd., f., w.r. 42l. 12s.

By GILBERT & HOW.

Stroud Green.—32, Kilmst. (s.), Victoria-rd., n.t. 62 yrs., g.r. 27l., y.r. 164l.

By DOUGLAS YOUNG & CO.

Shadwell.—145 and 146, St. George's-st. (s.), f., gross rental 98l.

By KNIGHT, FRANK, & BURLEY.

Burwell, Lincs.—Outlying portions of the Burwell Park Estate, 875 acres, f.

By E. J. GARDNER.

Hamstead.—119, Hamstead Hill and f.g.r. 20l. 14s., n.t. 143 yrs., g.r. 32l., y.r. 104l.

OILS, &c.		£	s.	d.	
Raw Linseed Oil	in pipes	per gallon	0	3	8.
"	" in barrels	"	0	3	1.
"	" in drums	"	0	3	11.
Boiled "	" in barrels	"	0	3	11.
"	" in drums	"	0	4	2.
Turpentine	in barrels	"	0	3	3.
"	in drums	"	0	3	9.
Genuine Ground English Lead,	per ton	24	10	0.	
Red Lead, Dry	"	22	10	0.	
Best Linseed Oil Putty	per cwt.	0	11	0.	
Sootblack Tar	per barrel	1	12	0.	

STONE.		
Per Ft. Cube.		
Per STONE—delivered on road wagons, Fiddington Depot.....		s. d. 1 64
do. delivered on road wagons, Nine Elms depot.....		1 84
PLANT STONE (20 ft. average)—		
White, delivered on road wagons, Fiddington Depot, Nine Elms Depot, or Fimlico Wharf.....		2 3
Blue Banded, delivered on road wagons Fiddington Depot, Nine Elms Depot, or Fimlico Wharf.....		2 44
Per Ft. Cube, delivered at Railway Depot.	s. d.	s. d.
after in blocks.....	1 10	Closeburn Red.....
in blocks.....	1 6	Frestone.....
in blocks.....	1 10	Red Mansfield.....
in blocks.....	2 4	Frestone.....
in blocks.....	2 4	Talacre & Gwaspyr.....
in blocks.....	2 2	Stone.....

White Sea and Petersburg				
First white deals, 3m. by 11 in.	15	0	0	16 0 0
" " " " " " " " " " " "	14	0	0	14 10 0
" Batons " " " " " " " "	11	10	0	12 10 0
Second white deals, 3m. by 11 in.	14	0	0	15 0 0
" " " " " " " " " " " "	13	0	0	14 0 0
" Batons " " " " " " " "	10	10	0	11 0 0
Pitch-pine : deals	19	0	0	21 0 0
Under 5 in. thick extra	10	0	0	12 0 0
Under 4 in. thick extra	0	0	0	upwards.
Oddments	32	0	0	"
Second, regular sizes	33	0	0	"
Oddments	28	0	0	"
Kum-lum-lum	3	6	0	5 0 0
Danzig and Stettin Oak Logs—				
Large, per ft. cubic	0	3	0	0 3 0
Small " "	0	3	0	0 3 0
Walnut Oak Logs, per ft. cubic	5	6	0	6 0 0
Dry Walnut Oak, per ft. sup., as in.	0	0	2	0 0 2
" " " " " " " " " " " "	0	0	7	0 0 7
" " " " " " " " " " " "	0	0	1	0 0 1
Shag Mahogany—Howe, per ft. sup., as in.	0	0	1	0 0 1
Selected, Figury, per ft. sup., as in.	0	1	6	0 1 6

OILS, &c.		£	s.	d.	
Raw Linseed Oil	in pipes	per gallon	0	3	8.
"	" in barrels	"	0	3	1.
"	" in drums	"	0	3	11.
Boiled "	" in barrels	"	0	3	11.
"	" in drums	"	0	4	2.
Turpentine	in barrels	"	0	3	3.
"	in drums	"	0	3	9.
Genuine Ground English Lead,	per ton	24	10	0.	
Red Lead, Dry	"	22	10	0.	
Best Linseed Oil Putty	per cwt.	0	11	0.	
Sootblack Tar	per barrel	1	12	0.	

VARNISHES, &c.	Per gallon.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 0
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Extra Pale French Copal	0 18 0
Eggshell Flating Varnish	1 1 0
White Pale Enamel	0 12 0
Extra Pale Paper	0 10 6
Best Japan Gold Size	0 18 0
Black Japan	0 9 0
Oak and Mahogany Stain	0 8 0
Brunswick Black	0 16 0
Berlin Black	0 10 9
Knottling	0 10 6
French and Dutch	0 10 6

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications, and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from attention to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the Editor or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiered Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted, unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

BRENTWOOD.—For repairing and painting of cottages, for Brentwood Urban District Council. Mr. A. James Henson, Surveyor.
G. Hagon £138 10 B. S. Mann £93 10
Ward Bros 136 0 S. Shaw, Hamilton.
W. Dean & Sons 125 10 road, Heath Park.
H. Coomes & Son 117 12 Romford* 75 0

CLACTON-ON-SEA.—For construction of two life boat slipways. Mr. W. T. Douglass, architect, Westminster, S.W.

Edwards & Stace £2,554 9 10
Executors of J. Arundel 2,234 0 0
W. Gradwell & Co. 2,067 0 0
H. Smith 1,649 0 0
R. C. Ebbelton & Co. 1,582 7 0
T. W. Pedrette 1,588 8 2
J. Adam & Sons 1,460 10 0
J. Dickson, St. Albans* 1,407 10 4

ELWORTH.—For erection of a chapel and school, for the Trustees. Messrs. A. Price & Son, architects, Sandbach.—
J. Stringer £1,878 0 0 Birchall Bros.,
S. Jackson, Ltd. 1,871 17 6 Middlewich*, £1,548 0 0
T. G. Huxley 1,650 0 0

EAST COWES.—For erection of a ferro-concrete reservoir (Kahn system). Mr. A. E. Barton, surveyor, Town Hall, East Cowes, I.W.:—
Patkinson & Son £3,992 0 W. H. Brading &
E. & A. Spriggins 3,888 0 S. H. East
D. G. Somerville £3,330 0
& Co. 3,785 0 Lewis, Rugg, &
F. Bevis 3,700 0 Co. 3,320 0
Thain & Co. 3,650 0 Walton & Co. 3,194 10
H. Stevens & Co. 3,545 0

LEEDS.—For cleaning down, painting, etc., at the Town Hall and Municipal Buildings. Mr. W. T. Lancashire, City Engineer, Leeds:—

Painting at Town Hall.
Jenkins, Tollereton, & Co., Marston-street £101 0 2

Painting of Municipal Buildings.
L. E. Wilkinson, Burley-road £92 8 9

LONDON.—For erection of a third cottage at Fox's lane, Hackney, for Mr. F. Cooper Clarke. Mr. Alfred E. Nightingale, architect, Gray's Inn-chambers, W.C.:—
W. Silk & Sons, £283, less £5 for foundation in time eight weeks.
C. W. Bovis & Co., £230, ditto, seven ditto.
J. Hunt & Co., £220, ditto, six ditto.
F. Smith & Co., £200, ditto, ditto.
W. Bestable, £175*, time six weeks.

LONDON.—For restoration of Block B at Customs House, E., for Mr. R. L. Crawford. Mr. Alfred E. Nightingale, architect, Gray's Inn-chambers, W.C.:—
P. Smith & Co.* £1,200

LONDON.—For erection of a cinematograph enclosure at the Goulston-street Baths, Stepney, E. Mr. M. W. Jameson, Borough Engineer, Municipal Offices, Whitechapel:—
J. A. King & Co., £150 0 Marshall & Co. Sul.
G. Jackson & Sons 130 0 grave-road, Ham.
P. Horton 201 15 mermith, W.* £75 0

LONDON.—For erection of a cottage and entrance gates at the Westernham Hill pumping-station, for the Metropolitan Water Board:—
R. A. Lowe & Co., £895 0 T. C. Gorham £498 0
R. N. Marmale 680 0 E. Peddie 480 0
F. & G. Foster 593 0 S. R. Spinner 435 10
R. Durrant & Sons 245 0

[* Recommended for acceptance.]

NANTGARW.—For erection of a house and two shops. Mr. W. D. Thomas, architect, Port:—
E. Turner & Sons £1,149 Moore & Elworthy £850
S. Ross & Co. 1,021 D. M. Isaac, Yoy.
E. Williams 1,003 shir* 828
Evans Bros. 897 J. Thomas 821

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.,

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son,
The Doulting Stone Co.)
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Soyssal and Metallic Lava.
Asphalte Company (Mr. H. Glenn), Office, 42
Poultry, E.C.—The best and cheapest material
for damp courses, railway arches, warehouses,
floors, flat roofs, stables, cow-sheds and milk
rooms, granaries, tun-rooms, and terraces.
Asphalte Contractors to the Forth Bridge Co.

WHAT!

USE WHITE

LIME-SAND BRICKS

(Of the Finest quality)

FOR CONTRACT WORK?

WHY?

B The Bricks are uniform.
C Less mortar is required.
A 15 per cent. more bricks can be laid per day.
U Where light is required they need no whitewashing.
B Saving of material and labour.
E USED BY THE MILLION IN GERMANY, AMERICA,
AND IN THIS COUNTRY.

These Bricks are made by the
GODSTONE BRICK & TILE CO. LTD.
Oxford Road, Godstone, Surrey.

and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 28 per 1,000, net.
Send for Free Samples

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,

4 & 5, East Harding-street,

Fetter-lane, E.C.

OGILVIE & CO.

Amhurst Works, DALSTON LANE, N.E.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS. ESTIMATES
FREE.

ASPHALTE

For Horizontal & Vertical Damp Courses,
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by

THE

French Asphalte Co.

Whose name and address should be inserted in all
specifications.

For estimates, quotations, and all information
apply at the Offices of the Company.

5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

EWART'S

"EMPEROR"

Established 1834.

Telephone:
2570 North.

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

SMOKE-CURE

Cures in 19 cases out of 20.

THE BUILDER

VOL. CL.—No. 3555.

OCTOBER 20, 1911.

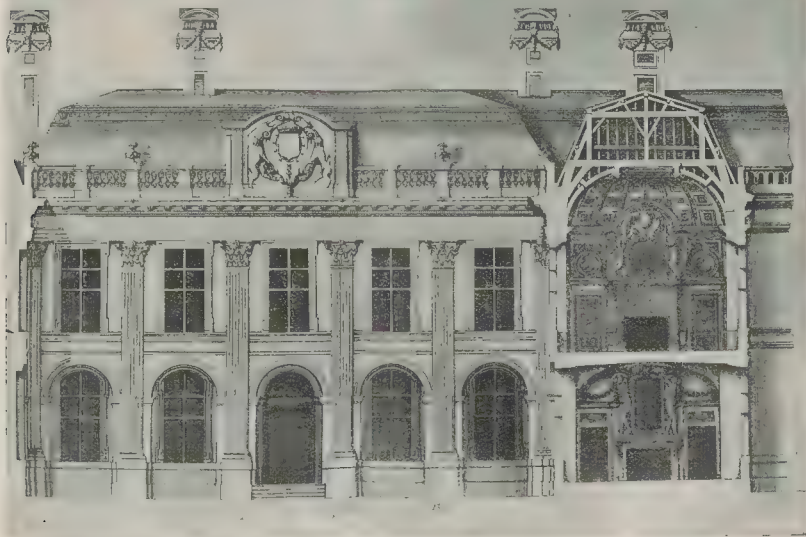
CONTENTS.

	PAGE		PAGE		PAGE
NEO-CLASSIC ARCHITECTURE (WITH ILLUSTRATIONS).....	435	MONTHLY REVIEW OF ENGINEERING.—		LAW REPORTS	460
AUSTRALIAN CAPITAL COMPETITION	438	MESSES. ARDING & HOBBS'S NEW PREMISES, CLAPHAM JUNCTION (WITH ILLUSTRATIONS) ...	440	LONDON COUNCILS	461
EXHIBITIONS	439	FOUNDATION LOADS.—II.	453	OBITUARY	461
ARCHITECTURAL ASSOCIATION: PLANNING.....	440	NOTES (WITH ILLUSTRATION)	454	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	462
ARCHITECTURAL SOCIETIES	443	THE BUILDING TRADE:		FOREIGN AND COLONIAL	464
ENGINEERING SOCIETIES	444	THE INDUSTRIAL COUNCIL	455	PATENTS	464
LOCAL NEWS	444	THE EMPLOYERS' PARLIAMENTARY COUNCIL ..	455	SOME RECENT SALES	464
QUESTIONS AND REVIEWS	445	STRIKES AND LOCK-OUTS	455	PRICES CURRENT	464
LONDON COUNTY COUNCIL	445	MANCHESTER BUILDING TRADE	455	TENDERS	465
TEN YEARS AGO	445	HULL MASTER BUILDERS' ASSOCIATION	456		
LOCAL SUMMARY	446	GENERAL BUILDING NEWS.....	456		
NOTIFICATION NEWS	446	APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909	456		
PROCEEDINGS	446	PROJECTED NEW BUILDINGS IN THE PROVINCES ..	458		
COMMUNICATION COLUMN.....	447	THE SOCIETY OF ARCHITECTS	459		
TO ILLUSTRATIONS	447	TRIBUNAL OF APPEAL UNDER THE LONDON BUILDING ACT.....	459		
		WESTMINSTER CITY COUNCIL	460		

Illustrations.

RESTORATION OF ASHLEY CHURCH, STAFFS.
MR. CECIL G. HARE, ARCHITECT.
WORKS OF PRIORY CHURCH: NEW EAST END.
MR. HAROLD BRAKSPER, A.R.I.B.A., ARCHITECT.
HOUSE AT FLEET, LINCOLNSHIRE. MR. J. E. DIXON
SPAIN, ARCHITECT.
THE COUNTY SCHOOL FOR BOYS, BROMLEY, KENT.
MR. H. P. BOWEN DOWLING, F.R.I.B.A., ARCHITECT.

FACE DV COSTE DE LA COVR^E DE LHOTEL D'AVAVX A PARIS



The Hôtel Davaux, Paris. By Le Muet, circa 1640.

(From "A History of French Architecture, 1494 to 1661." By Professor Reginald Blomfield.)

FRENCH NEO-CLASSIC ARCHITECTURE.*

PROFESSOR REGINALD BLOMFELD, in his new book on "French Architecture from 1494 to 1661," elects to use the Neo-Classic in preference to the usual one, the Renaissance, and substitution at once indicates the attitude he takes up in regard to this brilliant architectural development. Without a doubt there is less justification for the use of the term Renaissance

in France than in Italy; the adoption of classic formulae was more conscious and deliberate than was the case south of the Alps. While in Italy the relatively weak mediæval tradition offered little obstacle to the rapid advance of the Humanistic ideals and all they brought in their train, in France the state of affairs was very different, as a most vigorous vernacular style was to be overthrown, mainly by the importation of ideas from abroad; and, although this overthrow may be regarded as part of the movement comprehending the entire

civilisation of the West, if we are considering it in respect of France alone the title Renaissance is not so expressive as one conveying less definitely the sense of revival.

Last month, in reviewing Mr. Ward's book that covers to some extent the same ground, we had occasion to consider the various systems possible in the arrangement of such a work.

Professor Blomfield adopts the biographical method to a much larger extent than Mr. Ward, and by this means, while sacrificing some advantages

* "A History of French Architecture, 1494 to 1661." By Professor Reginald Blomfield, A.R.A., M.A., F.S.A. 5 vols., quarto. 50s. G. Bell & Sons, Ltd.



The Tuileries: Philibert de l'Orme, circa 1564.

of value in the use of his work as a text-book, secures an impression of continuity and enlists our interest more in respect of the development of the personality of the architect.

It is easy to see that this development is a point that has struck and held the author as one of the salient features in the change from mediæval to "Neo-Classical"; he has devoted considerable research to the question of the actual part borne by those in control of building operations when the Italian influence began to be felt, and his verdict is that they were not architects in the present acceptance of the term. The method by which the great architectural works of the Middle Ages were produced is touched on, but this investigation is far too important and comprehensive in itself to admit of more than a passing reference. The author passes on to the consideration of the extent to which the Italian craftsmen settled in France influenced the architecture of the earlier developments, and comes to the conclusion that this influence was more marked in the direction of decorative detail, and that the general design owed

more to the advanced spirits among the Frenchmen than to the Italians drawn to France by Francis I.

Taking up the story at the death of this Monarch, we find Professor Blomfield giving full credit to Philibert de l'Orme and to Jean Bullant for the important advances in architectural style they achieved, but we cannot but feel that he is hardly fair to the former in the comparison between the works of the two. Both were gifted with a strong imaginative faculty, and both were working in a manner then imperfectly understood; it was inevitable, therefore, that both should fall into error at times, but, while those of De l'Orme are severely criticised, Bullant is treated more gently. Of course, while it is impossible for an architect not to feel a certain personal sympathy for one attitude of mind rather than another, it seems to us that, brilliant though the work of Bullant is, his errors of taste detract more from his conceptions than do those of De l'Orme, and that in exalting the one at the expense of the other Professor Blomfield has hardly given due weight to this aspect.

Again, in the matter of Lescot and Goujon a strong line is taken as to Lescot's share in the inception of the designs due to the association of the two. Whether the author is entirely justified in his contentions or not (and he certainly makes out a strong case), such an investigation as this, involving a careful consideration of architectural qualities, must be of undoubted value.

In summing up the contents of Volume I. which carries the reader to the latter part of the XVIth century, the author refers to the systematising of building methods and the emergence of the professional architect in the following terms:—

"The advance made in this second period that is, in the years between the death of François I. and the death of Henri III., was on the whole considerable. In the first place the architect had definitely established his status as an artist in building, a man whom it was desirable to employ in all important work, and, at all events in the case of the architect of the King, an official who ranked comparatively high in the Court hierarchy. The conditions of practice were not far removed from those of the present day; there was the architect who prepared designs and models, and the Devis or specification of works; the builder such as Guillaum, or Le Breton, or Chambige, who tendered for the work and submitted his schedule of prices; lastly, there were the master tradesmen, masons, carpenters, and the like, the "jurés," men who were qualified by full membership of the Guilds, and who were formally appointed to examine the work and report on oath whether as carried out it complied with the contract, to a certain extent occupying a position halfway between that of the architect and the modern quantity surveyor. The scope of the architect's work was thus defined for the first time, and his training became more thorough and systematic. It is clear from De l'Orme's treatise that it included geometry and mathematics and the study of materials on the one hand, and on the other fairly extensive researches into the antiquities of Rome, either on the spot or in the text-books of the time."

At the beginning of the XVIIth century an important revival in church building, in part due to the rise of the Jesuits and in part to a general religious movement, gave additional opportunities to the architects of that period. While the more advanced work was in the XVIth century limited to civil buildings, in the following one the activity was shared by the church, as Lemercier, F. Mansart, and other architects carried out churches showing a high level of architectural accomplishment.

The author deals in detail with these among the works of their respective designers, and we must step back to the reign of Henri IV. As soon as this King had remedied the disorganised condition of the realm, he turned his attention to building, and earns Professor Blomfield's praise for his appreciation of architecture as a factor of national civilisation:—

"Partly owing to the absence of materials, and still more to the erroneous tendency to identify the French Renaissance with François I., the importance of what Henri IV. did to advance French architecture has been much underrated. François I. was also an enthusiastic patron of the arts, but he seems to have been unable to consider art as a whole, and in its relation to the social and political life of his countrymen. The active personal part that he took in the direction of his artists in no way compensated for this failure in large ideas; it was, indeed, as I have already pointed out, actually injurious to the progress of the arts. The rôle of the intelligent ruler is not to interfere with artists in the details of their art, but to find the

opportunity and elbow-room, to stimulate the intellectual atmosphere in which they work; to apply wisely the resources of the state to their encouragement and support. It was to this great task, among many others, that Henri IV. devoted himself, and it was in this way that he laid the foundations of all that has been most vital in France in the relations of the modern state to the arts."

That this is the right position for the expert in statesmanship may be admitted, but that it will necessarily produce fine architecture must not be inferred for the moment. The author seems to imply that it will, but further on we read that

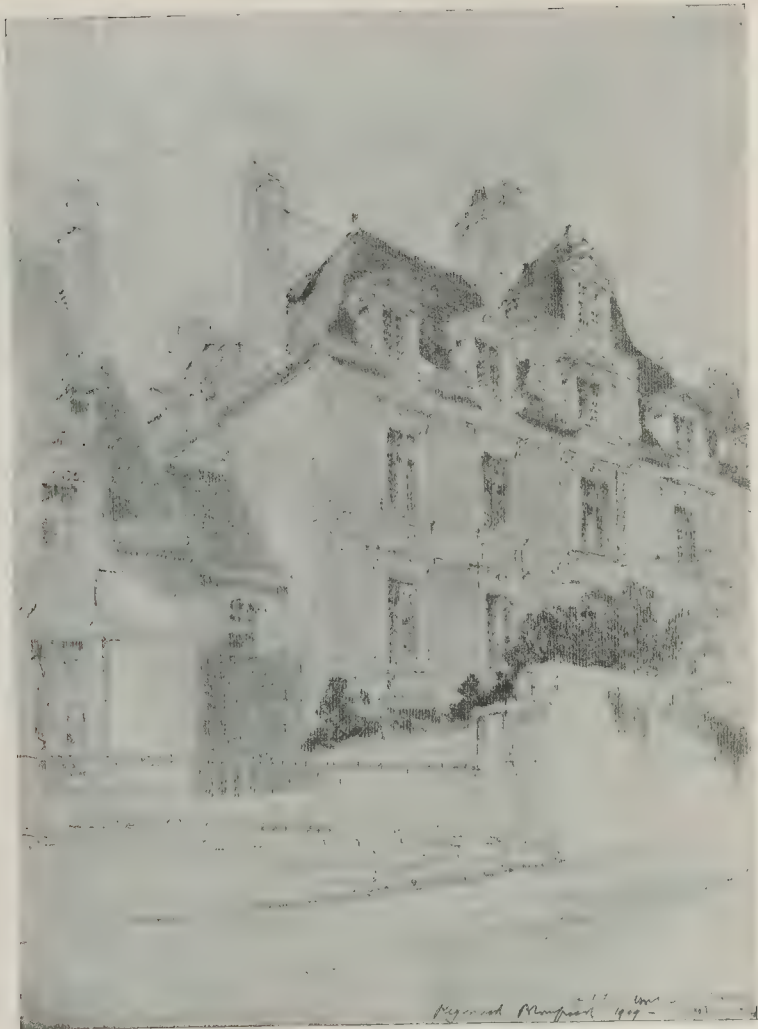
"Though exceptions may be found, and in spite of the splendid efforts of Henri IV. to promote the art, architecture generally was at a rather low ebb in the reign of Henri IV. It had not yet had time to get into its stride, and it was still confused by the technical legacies of the XVIth century. At its best it produced that simple and straightforward manner of domestic architecture in brick and stone, such as I have noted at Fontainebleau, which drew its charm from its materials, and from a certain austerity and reticence of design. At its worst, and its worst is more plentiful than its best, the architecture of this period ran out into all sorts of ambitious extravagance, piling detail upon detail, and over-accentuating the architectural motives that it used. Except that it was more skillful, there is little to choose between this architecture and our own Jacobean. Both manners are a travesty of the classic that they set out to realise. They had lost the charm, the picturesqueness, the reasonableness of earlier work, of the Manoir d'Ango in France, of Compton Winyates in England, and they were separated by a deep gulf from that genuine interpretation of the Neo-Classic spirit which Inigo Jones was to introduce into England, and François Mansart into France. The period was still one of transition, and must be criticised from that point of view. But throughout this period both architects and workmen were gaining technical ability, and out of all this welter of experiment and failure a finer taste



Loggia, Montgomery Ducey. Style of Henri IV.



The Chateau of Chiverny, 1634.



Hôtel de Limier, Vannes. Style of Henri IV.

and more perfect insight into the function of architecture were slowly emerging. The younger generation were to profit by the failures of their elders."

Certainly soon after this French architecture made great strides, and justifies the statement that the Frenchmen of the latter part of the XVIIth century displayed a faculty of imaginative foresight, a power of organic design, that enabled them to bring the whole of their resources together into one great and cumulative impact on the emotions.

While the author very justly points out that this important quality of architecture has been unduly neglected since that time, we think he ought in fairness to recognise that it has been the dominant note in the teachings of the Ecole des Beaux-Arts up to the present day, and that, while his criticism applies with great force to English architecture, the same can hardly be said of other nations.

Throughout the second volume we meet from time to time illuminating

quotations from the writings of Blondel; these are so apt and to the point that we cannot be too grateful to Professor Blomfield for their inclusion, and must express our agreement with his view that the opinions of this author are of the utmost value in a systematic study of the technique of architecture.

Throughout the book the illustrations are most judiciously selected to convey a clear and well-proportioned impression of the works of various periods. They comprise many reproductions from the works of Du Cerceau and other contemporary illustrations, from sketches by the author, and from well-chosen photographs. Those we give are selected as typical of each of these and exhibit work of various periods.

The author hints that he may continue his studies through the century or so following the period dealt with in these volumes, and we shall trust to see at some future time the results of the continuation of his work in this direction.

THE AUSTRALIAN CAPITAL COMPETITION.



WE regret to hear that the Government of the Commonwealth of Australia is reported to have declined to agree to the proposals of the Royal Institute of British Architects that a more adequate jury of assessors should be provided for the competition of the new Capital City.

The Government proposed to appoint a committee of three Australian experts—an architect, an engineer, and a land surveyor—to advise the Minister who is himself to make the final selection. To this the Institute offered objections and suggested that it would be more in accordance with the importance of the occasion if a jury of three prominent town planners was elected—one by the Australian Society, one by the Institute, and one by the American Institute.

If we are correctly informed, the Government has now slightly modified its

original proposals by agreeing that the nomination of the three experts shall rest with the societies of their respective professions in Australia, and not with the Government.

This concession is probably due to the representations of the local societies, and, though it is good as far as it goes, it is hardly to be said that it meets the objections or in any way attains the object of the proposals of the Institute.

The Australian Government claims the Australian Board of Judges will be fair and impartial, and that British competitors should rest content with that assurance. This is to beg the question. No one doubts their impartiality. We trust we shall not offend Australian susceptibilities if we suggest that town planning is not just the one thing for which the country is famous, and that we have no guarantee that a purely local tribunal will obtain the confidence of the best European and American experts.

The Australian Minister for Home Affairs is reported to have expressed the view that town planning comprises three professions—engineering, surveying, and architecture.

This may be a good rough-and-ready definition with an element of truth in it, but it would not do to assume that by taking a specimen of each profession the result would be one composite town planner. This seems to be the difficulty. However expert the Australians may be, and no doubt are, in these various professions, unless they have men who have made a special study of the subject, and are capable of holding their own with the best authorities in Europe and America, they cannot inspire confidence outside Australia. If this competition is to be a success the tribunal of judges must be men of the very first standing as expert town planners, and not merely as competent members of any one of the professions which that term includes. It is obvious that a man may be most accomplished in any of these, but have given no thought to the combination and the relation of the various activities which go to make up the subject.

The same Minister is also reported to have said that, "while the aristocracy of the profession may not send designs, there are hundreds of young, progressive, and up-to-date professional men who will compete. They have reputations to make."

On this we have two comments to make—first, that he appears to prefer to run the risk of keeping out the best designs and of having to be content with the second best, rather than alter his ill-considered conditions; and, secondly, that such a cynical appeal to professional disloyalty is not worthy of one in his position. He may be right in his conjecture, though we prefer not to believe so. But in any event it is more than curious that a responsible Minister should be found to publicly reckon on disloyalty, and to admit that it is necessary to the success of his measures.

There must be something wrong when the successful result of so important an undertaking depends on the willingness of competitors to sacrifice their self-respect for professional advancement, and there must be something wrong with a country where such things are possible.

NOTES.

The Duke of Rutland and our Ancient Monuments.

THE recent movement for the protection of our ancient monuments has provoked an indignant protest from the Duke of Rutland, whose plea is in brief, "May not a man do what he likes with his own?" The noble Duke proceeds to explain to us that the unfortunate owners of works of art are now compelled to sell them in order to meet the exceptional demands made on their estates by the financial policy of the present Government, and he lays the blame at their door. The Duke, as a Tory of the old school, is naturally bitterly opposed to the present Government and all its works, but surely he stretches his argument a long way in making them responsible for the sale of works of art. The operations of the Finance Act have not so far put such a severe pressure on the land magnates as he suggests, and do not appear at all likely to impose burdens that cannot be met by deals in ordinary property other than that of special archaeological and artistic interest. The Duke appears to resent the idea that anyone should have the power to review his decisions as to alterations or improvements at Haddon Hall, for example. In such a case as this, where an owner is obviously interested in the preservation of his property

it is unlikely that interference would be needed, but an attempt to determine general principles from a special, and quite possibly exceptional, state of affairs is misleading and absurd. The Duke's letter to the *Times* rather suggests that he is in a bad temper with the nation and its Government, and more concerned with his own grievances than with the broad constitutional issue as to what is right for the community as a whole.

Portinscale Bridge.

AS THE question of a new Portinscale Bridge is not finally decided, we may venture to hope that the existing bridge may yet be preserved in its integrity. The proposal now before the County Council is that a new bridge, which it is claimed would be more in accordance with the needs of modern traffic, is to be built at a distance of 50 yds. from the existing one. While, without inspecting each particular site, it is difficult to say whether it is the best that could be found with regard to the preservation of the general character of a view, we are in accord with the principle that a slight road diversion and a new bridge are often no more costly than the destructive method of rebuilding or remodelling a fine old bridge, with the result that, in most instances, it is deprived of both its archaeological value and its artistic charm. In this case, however, we have



St. Pierre, Saumur: Centre and Upper Portion, Early XVIIIth Century.

(From Professor Blomfield's "History of French Architecture.")

the authority of Canon Rawnsley against such a course, and when he states that the new bridge would blot out the view of the old, it appears evident that the proposal does not meet the artistic requirements, and in view of the fact that the bridge can be restored by the grouting process, and is generally adequate for the present traffic needs, as is testified by the opinion of the Royal Automobile Club, we trust that the present proposals may be reconsidered.

Forestry in India.

THE intimate connexion between forestry and building justifies us in drawing attention to the fact that the Indian Government, in addition to their proposed abolition of the office of Director-General of Archaeology referred to in our last issue, also intend to abolish the post of Inspector-General of Forests. As Sir Herbert Maxwell points out in the *Times*, it is curious that at a time when the Home Government is giving increased attention to these two questions that of India is scrapping its hitherto efficient administrative machinery and is generally pursuing a retrograde policy. The importance to India of a good system of forestry is too great to allow of any slackening in the methods of organisation and control without seriously diminishing the economic efficiency of this industry.

Painters and Lead Poisoning.

THE question of white-lead poisoning in the painting trade has again arisen owing to the fact that the disease appears to be increasing in frequency. Opinions differ as to whether it can be efficiently guarded against by the use of indiarubber gloves, overalls, and respirators, but even where these are provided it is often difficult to ensure their constant employment. Taking these facts into consideration, the only remedy seems to be the substitution of some other paint-body for white-lead, as has been done in France, and is now under the consideration of a Committee appointed by the Home Secretary. It may be admitted that no other substance is quite equal to white-lead as a body, but this cannot be allowed to outweigh the risk to the painter of contracting a terrible disease. It seems to be proved that even the most careful and cleanly workmen are exposed to risk, and if this is confirmed by the investigations of the Committee white-lead will have to go.

Canterbury Cathedral.

THE issue of a further appeal for 10,000*l.* to complete the task of reparation at Canterbury Cathedral draws our attention to the fact that, after the most strenuous efforts on the part of the Dean and Chapter, the central and north-western towers have been put into a sound and secure condition. There yet remains the south-western tower, commenced by Archbishop Chicheley, in the reign of Henry V., which is also in a grievous need of reparation. The pinnacles have had to be taken down, and an advance from the bank has enabled a scaffolding to be erected. We feel that it will be disgraceful if the necessary funds are not forthcoming to enable our premier cathedral to be put in a state of decent repair and structural soundness.

PICTURE EXHIBITIONS.

WE are glad to notice that at the galleries of the Fine Art Society some of the members of the Modern Society of Portrait Painters have sent a selection of their preliminary sketches. This is a move in the right direction, even if the result, with the exception, perhaps, of Mr. Lambert's drawings, were a little disappointing. We know artists who do not confess to preliminary sketches, and it is not our business to ask a painter to explain the processes by which he arrives at a given result. The result is the main thing. But every critical frequenter of painters' studios knows that there are instances in which the final accomplishment of a series of studies has fallen short of the studies themselves in vital artistic interest. In the completed picture the spirit, distinct enough in the first notes, has departed. Therefore it is that we welcome such pleasant little supplementary adjuncts to the main exhibition which we find at the Fine Art Society.

The impression which the exhibitions of the Royal Institute of Oil Painters and the Royal Society of British Artists leaves with us (with certain modifications) is one very little removed from dullness. We do not always ask for a sparkling experimental sort of show (although we are not indifferent to this type); we can discover even a certain charm in the works of the worst periods of Victorian art, because it was at bottom sincere and it reflected the spirit of the time. But what of the spirit behind the vast majority of the pictures at these two exhibitions? Is it sincere, does it reflect the spirit of the time? If it is sincere, then it suggests a very limited, unimpressible intelligence. If it is not sincere, then it is pure "pot boiling." Each of the three exhibitions has its bright spots; they contain here and there other pictures—pictures with mind and individual talent behind them.

Among these must be counted Mr. Dudley Hardy's imaginative Eastern subjects at the Royal Institute of Oil Painters, singularly rich in deep tones of colour, in mysterious shadows with sparkling notes of illumination, which evoke pretty much the sort of sentiment, both in drama and pictorial spectacle, as the tales of the "Thousand and One Nights." Mr. Hardy's art would seem during later years to have steadily advanced in seriousness and capacity. Then there is the work of Mr. Reginald Frampton, who never seems to permit himself to make any concessions to his pre-Raphaelite ideal. It is indeed almost a strange thing to see pictures, so honestly realised, of the type of his triptych, "A Madonna of Brittany," and "The Birth of Perseus," in a modern gallery. Mr. Frampton's palette is largely the palette of Puvion de Chavannes, not so much in the choice of colour, perhaps, as in his apprehension of its use in a certain poetic delicacy of tone. He also recalls the Frenchman in the touches of personal observation which assist a symbolic intention. Take, for instance, the modelling of the hands in the "Madonna of Brittany." This picture, as well as his larger canvas, suggests a decorative quality which is sufficiently rare in modern work to claim attention. It is a far stretch from Mr. Frampton to Mr. Lavery. Mr. Lavery is a great experimentalist; he diagnoses the latest things in technique, in method, and he gives his lively intelligence and skill full play. His "study" at the present exhibition for his large picture, "The Amazon," which was shown at the last Academy, might supply a useful primer of commentary on the effect of the juxtaposition of colours and the refraction of light, somewhat after the manner of the Bernard school. Miss Gloag's two pictures, "The Green Parrot" and "1860," are as daring and original, either in colour or subject, as ever; and Mrs. Betty Fagam, while touching an obvious note of sentiment, has presented a version of the oft-told tale after her own fashion, and effectively. Mr. George Hart,

Mr. Niels Lund, Mr. A. D. McCormick, and Mr. Lee Hankey are among those who contribute other works of interest.

The President of the Royal Society of British Artists, Sir Alfred East, is represented by only one picture, which cannot be ranked among his best; and the exhibition as a whole is a little disappointing. Mr. Alfred Hartley's "Silvery Night" provides an attractive effect of a dark cloud racing past the moon, and Mr. D. Murray Smith's landscapes, wrought in his sedately formalistic manner, have a constructional quality which is shared by "The White Ensign" of Mr. A. H. Elphinstone. "Summer," by Mr. Joseph Simpson, is a lively arrangement in colour, crisply impressionistic. Mr. A. E. Henderson, in his "Arch of Titus," is responsible for the only architectural drawing of any real excellence which we have observed at the present exhibitions. His "Restoration of the Temple of Artemis," in collaboration with Mr. Gilbert Bayes, is at the head of the staircase; it was reproduced in the *Builder*, August 4, 1911.



TOWN PLANNING.

A COMBINED ordinary general and Camera, Sketch, and Debate Club meeting of the Architectural Association was held on Monday at Tufston-street, Westminster, S.W., Mr. Gerald C. Horsley, President, in the chair.

Mr. H. A. Hall, Hon. Secretary, announced that the next meeting of the Camera, Sketch, and Debate Club would be held on November 2 at 7.30 p.m. (Ladies' Night), when a paper by Mr. Edwin Gunn, A.R.I.B.A., entitled "Woman as a Domestic Architect," would be read.

He also announced that the Athletic Club annual general meeting would be held on October 24 at 6.30 p.m.

New Members.

The following gentlemen were then elected as members:—

F. G. Bartholomew, London	M. D. N. Kochi, Holborn, W.C.
E. B. Bird, Clapham Common	F. W. Mackenzie, Seven Kings
C. J. Brooks, London	C. McLachlan, London
T. D. Brown, London	H. A. N. Medd, Abingdon, Berks
A. S. Burnett, Shawford, Hampshire	A. B. Meldrum, Holborn, W.C.
G. Capon, Nunhead	H. E. Napier, Notting Hill, W.
J. C. Crawford, Cheltenham	H. L. Peck, Stockwell, S.W.
New Zealand	W. R. Richardson, London
H. Crome, Hove, Sussex	H. A. Ryan, London
T. C. Evans, Fulham, S.W.	L. H. Saxe, Chelmsford, Essex
G. F. Finnemore, Northwood, Middx.	A. E. Tozer, Highgate, N.
W. A. S. Forbes, Newlyn, Penzance	W. Wands, Harlesdon, N.W.
P. M. Fraser, London	M. T. Waterhouse, Boxmoor, Herts
B. George, Wood Green	A. Waterlow, Hampstead, N.W.
H. F. Gossling, S. Croydon	J. H. L. Whentley, St. Leonard-on-Sea
R. H. Gutteridge, London	J. G. Williams, Bristol
C. F. N. Harris, Putney, S.W.	A. P. Woodin, Streatham Park
A. W. Horton, Derby	
G. S. Kossing, London	

Mr. A. E. Richardson and Mr. C. L. Gill having been reinstated as members, the

President proposed a vote of thanks to Miss Choll for presenting to the A.A.A. two model plans and some pieces of medieval woodwork and ironwork. This having been agreed to, the President nominated Mr. F. C. Eden to fill the vacancy on the Council.

Mr. Arthur Keen proposed the adoption of a Balance Sheet and Council's Report for the year 1910-1911.

Mr. Curtis Green seconded, and after some discussion and the passing of a vote of thanks to Mr. D. G. Driver, Secretary, and the motion was moved by Mr. G. E. Nield, the motion was agreed to.

Mr. Raymond Unwin then read a paper entitled

TOWN PLANNING: FORMAL OR IRREGULAR?

"The subject of the discussion which you have done me the honour of asking me to open tonight is one both deep in significance, for it goes to the root of all town-planning design, and difficult of solution, for it opens up the whole problem of convention in art, as to which a controversy as old as art criticism has waged every form of design from portrait painting to gardening. I am not qualified to deal conclusively with so wide a subject, nor

I feel able to put before you a simple theory of either the formal or the irregular town planning, which perhaps might have been the easiest way to open a discussion. If I were to interpret the two views in such terms as some of the extremists on each side make use of, it would be fairly easy to put a strong case against either party. Those who say that the town plan should consist entirely of straight streets and square places symmetrically arranged upon an axial line, pretty obviously ignore both the economic necessities and the best architectural opportunities which spring from the fact that the site upon which the plan is to be carried out has in England, in nine cases out of ten, an undulating surface, and contains many marked features of an irregular character. On the other hand, those who maintain that because the site consists of hills and hollows, and is marked by winding streams and devious highways, uplands with ragged edges, and the undom boundary lines of private properties, it is therefore unnatural and out of harmony with the site to plan straight streets or lay out symmetrical groups of buildings, seem to neglect altogether the legitimate function of human design and the application of architectural principles natural to a work so intimately connected with architectural expression as that of town planning.

Unless the extreme formalist is prepared to depend upon gigantic feats of engineering to provide for him a sufficiently formal stage for the display of his design, however formal he may make it on the paper plan, many sites will play pranks with the lines of his elevations. In fact, we cannot, if we are to obtain any success, think of town planning as the creation of a pattern in two dimensions, but must necessarily think of it in three. The formalist will admit that on an undulating surface many of his straight lines will always be seen as curves, and I cannot conceive any valid reason why he should not curve his lines on plan if he is so doing he can secure a horizontal line for his elevation; a matter which may be of vital importance to the formal effect he aims to produce.

This line of argument seems to give an opening to the advocate of the irregular school to come along and say: "What is this formalism and symmetry, anyway? Is it anything but mere conventional rule to make it easy for mere imaginative mind to produce harmless designs? What possible justification is there for limiting the design to the symmetrical, the straight, or the square?" He has studied the lines which have pleased him in the world round, the sweep of the seashore, the outline of the mountain slope, and the subtle forms of waves and flowers. As seen foreshortened in their natural state, and has found no formality. True he must admit some degree of symmetry in the balancing of parts of the bodies of men and animals, but he will urge that this is always associated with an extreme degree of subtle modelling and with some inexactitude; and that the symmetry of the bodily form, except perhaps when laid out in death, is always modified by the want of symmetry of the pose in which it is seen.

If, on the strength of this, he argues, "Why should I not have for my design the same

freedom that I see in these forms around me?"

I am not sure whether here we have not stumbled on the essential fallacy of this point of view, the idea that the free exercise of fancy uncontrolled by any precision of purpose or law of proportion is the natural basis for the highest type of design in all branches of human activity. John Ruskin is not accepted nowadays as a safe guide in all matters of architectural art, but I should like to quote what he says about that idea of liberty which regards it as meaning the right to do what we like. He says:—

"Nor is it the least among the sources of more serious satisfaction which I have found in the pursuit of a subject that at first appeared to bear but slightly on the grave interests of mankind, that the conditions of material perfection which it leads me in conclusion to consider furnish a strange proof how false is the conception, how frantic the pursuit of that treacherous phantom which men call liberty: most treacherous, indeed, of all phantoms, for the feeblest ray of reason might surely show us that not only its attainment, but its being was impossible. There is no such thing in the universe. There can never be. The stars have it not, the earth has it not, the sea has it not, and we men have the mockery and semblance of it only for our heaviest punishment."

I would like further to suggest that in the alternative definition, first given, I believe, by James Hinton, "that liberty is the power to like what we may do," will be found some reply to the extreme formalist. Certainly a good deal of what may be seen of informal town planning and *art nouveau* architecture does support the view that in the studied irregularities the designers are parodying the lines of a nature which they do not understand, and caricaturing a type of beauty which their art is incapable of creating. But because of this, to maintain that no one is competent to compose, either in the form of buildings or in the field of town planning on asymmetrical lines, that the beauties of proportion and relation can only be displayed when axially planned, seems to me a proposition which is amply disproved by many of the most beautiful buildings, streets, and places which have resulted from the work of the greatest periods of the past.

But our discussion is approaching the most unprofitable point of trying to decide one of those never-to-be-settled problems as to how far we may sway towards one view or another, the extreme and logical outcome of each of which we feel to be unsatisfactory. To avoid this danger I suggest that we try to approach the subject from another point of view. Past generations have not been able to solve the problem on these lines. It is hardly likely that we shall do so to-night, but if we can by discussing it help one another to see more clearly what should guide us we may glean some practical good from the discussion.

What is town planning? What constitutes it an art, and what limitations must artistic expression through this medium accept?

Town planning consists in making provision for the needs and affording satisfaction for the aspirations of an organised community. It is its purpose to minister to the convenience of the inhabitants, to increase the efficiency of their associated industrial and commercial activities, to foster their social intercourse and their intellectual development by the facilities which it affords, and to add to the pleasure of their lives by preserving the amenities of the town as a place of residence. This is, in mere outline, the useful function which town planning must fulfil. The very expression of some of its purposes would constitute town planning an art, and it is impossible, as in the kindred art of architecture, to draw any precise line between the useful purpose and the beauty of the form adopted to satisfy that purpose, the two being intermingled. If properly appreciated both by the citizen and the artist these two aspects of the subject are not antagonistic, but they may become antagonistic if the artist forgets the purpose of that which he is creating and imagines that it is his duty to create something beautiful which the citizens may with an effort make use of, instead of creating something useful and expressing it in a beautiful form.

Here at once we meet with definite limitations of a practical nature within which the designer must work. It may be true that the steep, straight street leading over the top of the hill would make an excellent basis for a formal scheme, but if every cyclist has to dismount and push his machine up that hill, and every

driver to walk his horse with difficulty down the other side, the purpose of convenient access will hardly have been satisfied, and any beauty which the design may have will be rendered unpleasing by its obvious want of suitability to its proper purpose. We see, therefore, that our plan, whatever its form, must properly satisfy the requirements of use, and must be adapted to the nature of the site. These may be taken as two cardinal principles of successful town planning design, principles which are sufficiently important to override any mere question of formality of plan when they are antagonistic to it. Though these practical considerations will often be irreconcilable with some preconceived formal scheme, it is not often that they will be antagonistic to all forms of beautiful expression. Much has been written on the relation between use and beauty, and I must not wander off into a discussion on this point. Suffice it to say that in town planning, at any rate, beauty is intimately associated with use, with fitness for purpose and function, but it is not the same thing. It is not enough to satisfy the use and trust that by chance beauty will result. Use and fitness will dictate certain lines of development, but it is seldom that these will be exact lines; rather they will usually be limits of deviation, and it is within those limits which the useful purpose allows that the town planner must keep, and it is of the scope which they afford him that he must take advantage to produce the beauty of form at which he is aiming.

But not only are there limitations due to the useful purposes of town planning, there are, as in other arts, limitations due to the medium.

First of all, this art is not complete in itself. The town planner but lays down the general design, creates the opportunities. He must depend upon the architects who come after him to fill in the details and take advantage of the opportunities he has created. He will be able to a greater or less extent to influence the result by determining the position of main buildings, and sometimes by fixing frontage lines and limiting the height and character of the buildings, but at best he must leave all detail out of his count; he can deal only with the main masses. It is by the handling of these masses of building and the disposition of the spaces or voids between them, by bringing all the masses and spaces into proportion with each other, and the whole into proper relation to the site so as to produce an organic composition, and by this alone, that town planning can speak, can produce its effect. It is by this completeness of the organic composition also that town planning gives expression to the ideas of corporate activity, civic association, and human fellowship, a range of ideas which can hardly, with equal adequacy, be expressed in any other way.

If that be so, then our artistic aim proves true when brought to the test which Mr. Reginald Blomfield has well suggested when he says: "This is, I think, the vital touchstone of any art that what it does can only be done by that one particular art."

Anything, then, which contributes to the force and clearness of this expression of the organic unity of the city must be proper to the practice of this art, while anything that detracts from or blurs this expression must be improper. It is by appealing to the sense of correlation which springs from spacing and proportion, to the sense of unity which springs from definitely apprehended form, whether in plan by the disposition of the parts upon a level plain, or in elevation by the piling of them up upon the hillside, that alone we can produce this, our highest form of expression. We are seeking definiteness of form; it can hardly be right to take informality or irregularity as our means.

To sum up, I believe, then, that town planning should be formal, using the word in a broad sense and always remembering that there are limits set by the useful purposes that the plan must provide for, by the nature and opportunities afforded by the site, and by the relation of the beholder to the city which he views, all of which will very often cause the essential effects to depend upon a formalism which does not hesitate to depart from exact regularity on the paper plan, when by doing so more adequate expression can be given to some element of the design more essential to the complete unity of the result than the element of formality.

May I now attempt to illustrate what I have said by showing you some examples?"

In conclusion Mr. Raymond Unwin showed some interesting lantern views in illustration of his remarks.

Mr. Stanley C. Ramsey

said he was afraid he must plead guilty to being a formalist of the worst description, and after seeing and comparing the interesting slides they had seen and listening to Mr. Unwin's remarks on them he had come to the conclusion that Mr. Unwin was a greater formalist than his paper might lead them to believe. In Mr. Unwin's reference to a formalist as one who starts with a preconceived scheme without reference to the special requirements and conditions of site and surrounding scenery, which he illustrated by reference to an imaginary plan of a site for a town on a hill, in which the main road was taken in a straight line up one side and down the other—when possibly the better solution would have been to have made a circuitous approach—he was only giving a picture of one who had approached his problem with a very inadequate conception of what he had to do. This surely was a very immature and incomplete representation of what a formalist in town planning should be. One might as well refer to a classic architect as one who designs a symmetrical façade without any relation to the building behind it. All the greatest formalists who had been masters in town planning had shown their mastery by that very grasp of the difficulties to be overcome which Mr. Unwin would have them think it was their special privilege to ignore. In fact, many of the slides that they had seen on the screen only proved his (the speaker's) statements; and, to take an example that they were all familiar with, he need only instance Regent-street as it existed ten years or so ago, before the present devastation had commenced, as a satisfactory solution of the application of formal principles to town planning. In the lower part we had an instance of formal architecture arranged on a steep gradient with a termination in Waterloo-place and a vista effect terminated by a climax in the Duke of York's Column. The upper and the lower parts were connected by Piccadilly-circus, and the upper part of Regent-street was a formal treatment of a street on a curve on rising ground, finishing at Oxford-circus, with the church at the end of Langham-place in the distance giving another vista effect. And the treatment of the whole formed a very good example of the application of formal principles applied to the difficult problems of curved streets and steep gradients. He thought that before we could properly decide the merits of regular or irregular town planning we must have a clear idea as to what was meant by the two terms, and he ventured to submit the following definitions:—

1. Regular, that which had been planned to a preconceived system laid out on regular and orderly lines.

2. Irregular, that which had been built up unit by unit—being part of no complete scheme—controlled only by immediate requirements.

Proceeding to the different types of town, we find that they come under one or other of the above heads, and might for the sake of convenience be divided into three distinct classes:—

(1) Towns or cities that had from the first been laid out on regular and orderly lines, such as modern Paris, following the plans by Gabriel and the earlier architects of Louis XIV., and afterwards those of Haussmann; Washington, built on the plans laid down by L'Enfant; and the new town of Edinburgh, which was planned by Craig; and many of the colonial cities of Greece and Rome.

(2) Towns or cities that had grown fitfully, uncontrolled, or only partially controlled. Examples of this type would be found in ancient Rome and Athens and most mediæval cities. The Greeks and Romans both realised the shortcomings of their capital cities, which were the gradual development of earlier and prehistoric times, and in the design of their colonial cities followed a definite and pre-arranged plan. Rome was unity itself in the lay-out of her forum, baths, public places, and individual buildings, and was unsymmetrical only in the connexion of her different parts. Examples

of the colonial cities of Greece laid out on formal lines might be found at Miletus, Priene, and Rhodes, the last-named being the work of the Greek architect Hippodamus. Remains of Roman colonial cities of a formal type might be found at Treves, Silchester, and Timgad.

As to the third and last type:—

(3) Towns or cities that were a combination of the two previous types, owing their formation partly to growth and partly to predetermined planning. Most of our modern towns in this country would come under this description *i.e.*, London, Dublin, Glasgow, Bath, Ramsgate, Margate, Hastings, and Brighton. It was only now that we realised the loss London had sustained in the setting aside of Wren's plan for its reconstruction after the Great Fire—a fine example of formal planning, which took into consideration all the difficulties of site and environment, and which in its treatment of difficult gradients, awkward connexions, vista effects, and axiality of planning, with its ample provision for traffic, immediate and future, showed the mind of a master. When we contrast the confusion of the central districts with the subsequent development of the western and south-western quarters we must of necessity admit the advantages of some orderly arrangement in the lay-out of a great city. The district between Oxford-street and Marylebone, with its fine series of residential squares stretching from Bloomsbury to Bayswater, and including as it does such magnificent examples of town planning as Cavendish-square, Portman-square, Portland-place, Regent's Park, and Regent-street, together with their connexions of rectangular and carefully placed streets, could not fail to impress the least observant or to influence the most confirmed informalist. Much of this work was carried out in the early years of the XIXth century, and owed its inspiration and direction to such men as the Adams, Decimus Burton, Nash, and Bassevi, and, together with that quarter which was known as Belgravia, helped to make London the beautiful and dignified city that it is. We thus find that in ancient and modern times there has always been a desire for the formal, and wherever possible town planning has always developed on these lines—no town of any importance has ever been deliberately laid out on any but regular and orderly lines. In seeking, then, for a solution of modern problems in examples of a formal kind, we must balance up the advantages to be obtained by following a controlled and prearranged plan over the disadvantages that resulted when the town was the outcome of an uncontrolled or disorderly growth. In a mediæval city, the charm and fascination of which were undeniable, the artistic results had been in most cases due to accident; if there had been any guiding principle it had been only the selection of the site for the most important building, such as the cathedral or monastery, and round these had grouped the habitations and different units which had formed the town, with results at times the most striking. The danger was when we attempted to reproduce a picturesque result by studied means—the result would be something very different to that which we desired. The correct setting for a cottage or house of the Middle Ages (apart from those in the open country or small villages) was in the narrow streets of a mediæval town, where the effect was nearly always obtained by a close juxtaposition of similar buildings, and which were viewed sideways as approached up the street. The result of overhanging story, deep eaves, rough-hewn beams, and crowded tile roofs was harmonious, and the individual design of the different units composed into a complete picture. But take such a street and put it on the side of a broad road or tree-lined boulevard, after having in each building made an effort to combine modern proportions and modern comforts with old-world effects, and we should be extremely disappointed with our work. Seen in their new setting or viewed as a façade, we find each house competes with its neighbours; there is a want of rest, of uniformity. The result is distressingly original or abnormally picturesque, and this, in conjunction with the strained and unnatural appearance caused by the introduction of modern requirements in the way of light and height, for instance, produces a sensation of dissatis-

faction and uneasiness. This is one of the unfortunate tendencies of some of our "garden city" work.

The building of an entirely new city was a problem that to-day hardly ever presented itself we were chiefly concerned with city improvement, reconstruction, and development, and for the provision of districts for certain sections of the community, as in "garden cities" and "garden suburbs"; but, whatever our work, we should aim at creating a delightful environment for human habitation. This should be the recognised aim of the town planner. With this end in view, we should seek to provide for the proper distribution of a city with its different component parts, carefully studying each in its relation to the whole and making ample provision for proper connexions. We should have to provide residential districts, business districts, commercial zones, park systems, and pleasure places, for the grouping of buildings with reference to their relative use, and if we were to have satisfactory results there could be no question of an irregular or uncontrolled growth. To ensure success everything, down to the smallest detail, must be carefully studied and provided for, and this could only be done by adopting some formal system of town planning. He regretted that Mr. Unwin did not dwell at greater length on the relation of the architect to the town planner and to the architectural expression best suited to a formal town. He (the speaker) recently had the pleasure of reading Mr. Unwin's inaugural lecture on "Civic Design" at Birmingham University, and he was very much struck with what he stated should be the right attitude of the architect to the town:—"That he may in the design of his building consider the total effect of the town as more important than the individual prominence of his own building."

That seemed to go right to the root of the whole trouble; we lived in an age of extreme individualism, in which each asserted the glorious privilege of the Englishman "doing as he likes," with results the most anarchic and disastrous. Compare Regent-street as it was with Kingsway. In the one we have an example of refined uniformity, no monotonous repetition of uninteresting units, but a skilful combination of harmonious groups, which had a subtle relation to the whole design. In the case of Kingsway we have the record of a lost opportunity. What with a little forethought and consideration might have been one of the finest streets of the metropolis was a wilderness of architectural incongruities. Here, if anywhere, we could appreciate the necessity of some measure of control in the designs for the façades of our streets. Containing as it did several buildings of distinct individual merit, the general result was one of hopeless confusion. That exaggerated individualism and general lack of proper appreciation for all concerted effort which seemed to be a peculiar characteristic of our more important buildings of the last fifteen or twenty years had succeeded in making Kingsway the architectural laughing-stock of modern Europe. He thought we might assume as an axiom in all town planning schemes that the more important buildings alone should demand conscious attention, leaving the rest to be subconsciously felt. In conclusion, Mr. Ramsey referred to that part of Mr. Unwin's paper in which he spoke of the town planner as one who should settle the sites for the principal buildings, determine the lines of frontage, and to some extent control the character of the general design limiting the heights of buildings and the level of cornices. If he could do this he would achieve a splendid work, and would do more than anything else to bring about that unity of result which should characterise the architecture of a great and progressive nation.

Mr. Curtis Green

said he had before him an interesting paper on "The Comparative Desirability of the Formal or Irregular Treatment of Street Architecture in Large Cities," the subject being that set for the Institute of Architects' essay prize in 1901, and the essay which he had before him was by their old friend, the late Maryon Watson, who was Hon. Secretary of the Association at the time, and it was the essay which won the medal. That essay

ended to have a very great deal of wisdom and shrewdness in it, and was well worth study by all students of town planning. Mr. Watson in this essay had some very interesting remarks to make about formal and irregular architecture. There was the house inside the house to be thought about, and the man in the street. Though we wanted to work towards some definite scheme in the future, there were a great many difficulties to contend with in the formal movement. Like Regent-street, the finest piece of formal in what we had in London, that was being destroyed gradually. All city development was largely a matter of use, and it formerly was the custom to find a public house at every street corner, but that was no longer so, and was a question whether their architecture was to take on a permanent character or whether a building was to be pulled down and destroyed when its immediate use came to an end.

Mr. Gilbert H. Jenkins

and that one or two of the photographs shown by the lecturer appeared to contradict the statement that the garden around the house could be wholly formal in character and not gradually fade away into the landscape. The photographs showed a fading away into informality that was desirable. It seemed to me to be a fine thing if the centre of a town was planned on entirely formal lines, with fine vistas leading up to the public buildings, which would form a focus, and as the town extended into the country for it to get less and less regular and more informal. This would be in accordance with the kind of buildings which should be erected in the main streets of a city or town, and in the less main outskirts.

Mr. A. E. Richardson

and he thought a great deal of formal treatment and little of the informal. The informal, irregular treatment competed with Nature, and in doing so proclaimed its littleness. Mr. Unwin had shown some fine photographs of English and German architecture, but he noticed a regrettable absence of much of the architecture to be seen in London. London architecture was comparatively unknown to most of them, and in the study of small town planning, which he advocated, he commended everyone to go to the squares of Flanders and the streets and squares of Flanders, and so on, and study the buildings there, and to compare the designs of Somerset House and Waterloo Bridge with the Place de la Concorde. Most of the London squares were developed round fields, and the fields were not built on, but they were enclosed, and during the XVIIIth and early XIXth centuries the residents in the squares acquired their provisions from the neighbouring farms, and the streets and squares were supporting, forming residential centres of the town that was best in literature and culture. London offered some of the best examples of town planning in the world, and he should like to see students study these examples.

Mr. A. E. Bullock

and that we had not advanced much in dealing with the traffic problem. In relation to the Bank of England, for instance, Cheapside was a continued source of trouble to policemen. In all our town planning we failed to properly consider them from the traffic point of view, but too much from the artistic; and, bringing in mind the work of various Commissions, it was curious that no one had thought of a good way to deal with traffic difficulties. He thought that if we had round our circuses a subsidiary circular street of a radius of 300 yds. from the centre of the circle we should get a lot of the traffic away from the main crossings, and the congestion would be very much relieved. He thought it ought to study the West-end of London in considering the question, as the treatment of squares, etc., in many cases was very clever, and railway stations and municipal buildings much more space should be provided for traffic.

Mr. C. G. Boutcher

and he disagreed with Mr. Unwin that the principles applied to a small garden suburb as to a large city; they seemed to be in direct opposition. Though one would like

to be a formalist, it seemed to him that the opportunities for formal treatment were very small. A city grew, and one could not design a city, knowing what was going to happen. Town planning should be approached as house planning, for the problems were the same, and, if approached in the same way, we should get better results. A garden suburb should be planned as a small house is planned, merely taking into account its usefulness and the site. With a large city, where one had to treat the community as a whole, the formal treatment applied, and it should be limited to large cities, and should not enter into garden suburb work.

Mr. F. M. Elgood

said that there was little wonder if in that Association almost everyone was a formalist, chiefly because in formal planning one could see very definite results—some very fine and majestic results, and in informal planning one could hardly say that the results were entirely due to the planning; they were often merely accidental, and that was much in evidence in the views shown that evening. As a matter of fact, except on paper, he did not suppose it would be in the power of many of them ever to prepare plans for the formal layout of anything approaching a city; but, on the other hand, there were many practical pieces of work which were being done now and a great many more would have to be done in planning garden suburbs. Mr. Unwin spoke very strongly as to "completing the picture" by not letting a street go too far. That could be done in garden suburbs very satisfactorily by breaking the frontage line. Frontage lines, heights, and the character of buildings were three very important points to be remembered. As to height, he thought that the buildings being erected in Regent-street would destroy the proportions of the street, and as to the character of buildings, it was an interesting question for architects how far the design of buildings should be controlled. It was a perennial subject of discussion whether there should be any control of design, but he thought it was not at all improbable that soon some provision would be made as to this, and architects would wake up to find that their designs in certain town planning areas would have to be approved. He thought architects should keep their eyes open as to this, for the Local Government Board, he believed, considered that "character" in the Town Planning Act meant design as well as the kind of buildings, and if architects would take the initiative in this matter it would be very desirable. A Canadian visitor having asked for information as to the distribution areas of the commercial, residential, and the industrial—and having referred to the interest taken in Canada in the subject of town planning,

The Chairman,

in putting the vote of thanks to the meeting, said that the balance of opinion seemed to be more in favour of formalism than the irregular in town planning. He came across an interesting remark in the *Proceedings* of the Town Planning Conference held in London lately, which showed how far back the feeling for formalism had existed. Dr. Haverfield, in his paper, "Town Planning in the Roman World," says, "Ancient life, I think, differed from modern in nothing so much as in its preferences for set and almost crystallised forms within which to express itself. This is especially seen in the form given to the town. It was an old form—the familiar rectangular street plan. That, I think, is the town plan, which in all ages, till twenty or thirty years ago, men either invented or instinctively borrowed for their systematic town planning. We meet it in early China, in Greece, from the 17th century B.C., and in mediaeval England, and in many towns across the seas. The square and straight lines are indeed the simplest marks which divide man civilised from the barbarian. It has remained for the Teutonic spirit in these last days to connect civilisation with a curve." That was a very interesting statement from an able man, and one which explained a good deal of our preference, as a rule, for formalism in town planning. And they would remember what Mr. Unwin said about Ruskin's view in writing upon Liberty, how necessary it was to confine our actions within certain definite

lines—how impossible it was to go through life without some distinct principles.

The vote of thanks having been heartily agreed to,

Mr. Unwin,

in reply, said that perhaps he ought to have said a little more about the definite principles in favour of informal planning that were put forward by the present German school of town planners; because the discussion had rather assumed that informality was simply an accidental growth, haphazard, instead of resulting from a conscious attempt to reproduce irregular effects which arose in the past partly consciously, partly by accident, yet not so much by accident as we at first assumed. They arose very much from the fact that everybody at one time was working on one style, with one general appreciation and instinct for what was right in any particular case. That was not quite the same thing as accident; but it did approach nearer to the conditions which governed natural growth than any other conditions which were possible in the field of architecture. Whether we should ever get to a similar state, when we should all be so settled in our minds as to agree what are the right things and styles, when we should be able to work more freely, not because of greater liberty, but because of more obedience to a law which we all understood and appreciated, was a philosophical consideration which we might think of at leisure. It had hardly a practical side to it, however, while a town planner could not know what an architect would put up on any plot. He could not follow Mr. Boucher in thinking that there should be a definite distinction in principle between the planning of the centre of a town and planning of the outskirts. He entirely differed; the principles were the same, but the method of carrying them out might be different, because the conditions were different. He thought it was a dangerous thing to say that they were different principles. There was no sense in the mere statement that because you get away from the centre, or from the house, that you should become informal. But the circumstances leading to informality might have more relative weight in some cases on the outskirts. He agreed as to what had been said as to there being a great deal of useful planning in London, and in England, too, but except in a few instances he did not think we could find in England such useful examples of composition in town planning. If they wanted a distinct example of axial treatment they did not get such an effectual one as the Somerset House as in the Place de la Concorde. He could not deal that night with the questions of traffic or the interesting points raised by the Canadian gentleman. If a town plan was inconvenient for traffic it was a bad town plan; there might be many beautiful results, but as a town plan it was bad. These were essentials, and unless they were satisfied they failed on the essential lines.

The President announced that the next meeting would be held on October 30, when a paper by Mr. H. H. Hill, B.A., would be read, entitled "The A.A. Excursion to the Loire, 1911," illustrated by lantern slides. The meeting then terminated.

ARCHITECTURAL SOCIETIES.

Manchester Society of Architects: Presidential Address.

On the 11th inst. the first of the meetings of the Society's winter programme was held, when Mr. Edgar Wood, F.R.I.B.A., delivered the presidential address. In the room was exhibited a large collection of drawings and photographs of important architectural works of both past and present, which were obtained for the occasion by the President.

Mr. Wood said that he proposed to depart from the usual custom, which had been followed on many previous occasions, of reviewing the year's work and architectural achievement. He could foresee that a series of lamentations might be the result, and that was not the spirit in which a new session's work should be undertaken. A paragraph of James Russell Lowell suggested a subject for discussion and thought—"There is only one thing better than tradition, and that is the original and eternal life out of which all

tradition takes its rise." We all acknowledge, continued Mr. Wood, that tradition is the greatest factor and the greatest book that goes to our making. The difficulty is in its interpretation. The temperament of vigour will seek to express itself upon lines founded upon his own conception of the spirit of the work of his predecessors, strengthened by an intense craving to create for himself. How much originality and of reliance on the past is compatible with freedom of thought?

On tradition alone we cannot advance. If we make the past a crutch and ourselves a cripple we are exponents of intellectual stagnation. Do we show our appreciation of the Greeks more wisely in attempting the mechanical reproduction of their form, or by endeavouring to comprehend the spirit of full-grown manhood in which they wrought, to kindle ourselves by the emulation of it, and to bring it to bear with all its plastic force on our wholly new condition of life and thought. External imitation of a bygone excellence, or even by applying the rules which analytic criticism has formulated from the study of it, produces the artificial, not the artistic. That most subtle of all essences which eludes chemist, anatomist, and microscopist, the life, is, in aesthetics, not less shy of the critic. The Italian Renaissance fell short in its architecture, because to a living body of social and scientific new birth was bound the corpse of a past art. The great and magnificent development of plan was not accompanied by corresponding achievement in design. The architects were hard at work as students of antiquity, while the sculptors were yearning to create.

Yet the notion of absolute originality was an absurdity. A man cannot escape in thought any more than in language from the past. Not less preposterous than raising dead styles is the invention of new ones.

Art must be at once retrospective and progressive; its very progress a reflection returned from the mirror of the past. Its artists must be endowed with that energy of life which vitalises and becomes a channel of creative power. To the extent which they possess this force are they original, creative, fecund. Not in skill, device, artifice, or mechanism is originative impulse to be found, but in life. "They are torrents of will." They work in ways dissimilar, but the quality they possess is their measureless vitality, which the academic is unable to stifle or the archaeologist to smother.

From abstract thoughts and reasonings our minds can travel to the things of to-day and inquire how they influence our endeavours. In our planning we exercise every mental energy in satisfying practical requirements. We visit the most recent developments in every utilitarian direction, and this vitality has justly yielded its reward. Has there been equal success in the development of the architectural contribution, or has our energy exhausted itself before we are architects? Our clients, it may be said, do not encourage these things, but is that sufficient to stifle aspiration. Are not our convictions so true that we are ready to put them aside before the indifference of others?

We must, again, remember that the test of an artist will always be that he has some thing to say: that he is moved by some faith that he holds. He may be a scholar, or interesting, logical, industrious, but unless he is sincere he can only be a partial success.

Mr. Wood referred to the collections of works in the room. Reverence forbade any allusion to those whose works were of the long past, but of the others he could touch upon some as worthy of grateful tribute, and he concluded by an analysis of Westminster Cathedral, some works of Professor Pite, Mr. Henry Wilson, and others whose work was exhibited.

ENGINEERING SOCIETIES.

Institution of Municipal Engineers.

A joint meeting of the Yorkshire and Northern Districts of this Institution was held at Leeds on October 7, at the invitation of the former district. Some thirty members and others attended, assembling at the North-Eastern Railway-station, and driving to Harrogate-road, where a petrol roller was at work on a new tar-macadam road. Mr.

Prince, Surveyor of Highways to the Leeds City Council, met the party here. The next visit was to the works of Messrs. Thomas Green & Son, Ltd., Smithfield Iron Works, the members being shown round the works by Aldermen Penrose Green, ex-Lord Mayor of Leeds. After a passing call at St. James'-street, where a length of road laid with "Roomac" was inspected, the party proceeded to the fire-station, where they were treated to an exhibition turn-out of motor fire engine and horsed escape. Stables, men's quarters, and other buildings were inspected. The last visits on the list were to the water-pumping station and new filter-beds at Headingley, permission to inspect these having been given by Mr. G. Hensell, the Waterworks Engineer. A drive through Meanwood and Moortown to Roundhay Park, one of the largest public parks in the county, followed, and at 4.45 the party sat down to dinner at the Mansion Hotel in the park, Mr. John T. Pegge, City Engineer of Durham, presiding.

The day's programme was the work of Mr. H. G. Firth, the Hon. Secretary of the Yorkshire District. Mr. Pegge, in proposing a vote of thanks to Mr. Firth, laid stress upon the admirable way in which the programme had been drawn up and carried out.

GENERAL NEWS.

District Surveyors' Fees in London.

The first meeting after the summer recess of the Education Committee of the London County Council was held on Wednesday at the County Hall. The Committee agreed to a recommendation of the Buildings Sub-Committee to forward to the Finance Committee a special maintenance estimate of 500*l.* in respect of district surveyors' fees. Mr. Gautrey said this 500*l.* formed part of a payment of 2,000*l.* to the district surveyors for overlooking the construction of the Council's buildings, but, as a matter of fact, the overlooking of the erection of school buildings was done by the officers of the Council. The district surveyors would receive 2,000*l.*, and do nothing for it. They had an Act of Parliament behind them under which they could claim fees, and the Council could not stop it at present. The Council ought to take steps to get this thing remedied.—*Times*.

The Aldwych Site.

A contemporary, the organ of the South African Master Builders' Federation, is anxious that the example of Australia in proposing to erect in the Strand a palatial block of Commonwealth and State offices should be followed by the Union Government of South Africa, whose offices now consists of "two or three rooms in an obscure building in Victoria-street." If South Africa had its own building in a central position facilities would be afforded certainly for the supply of information in connexion with general trade, the building and mining industries, and agricultural matters, and good use would be found for land which has lain idle for so long.

Fritwell Manor.

The late Mr. Thomas Garner, who was in partnership with the late Mr. George Bodley, resided for many years at Fritwell Manor, Banbury, and devoted much time and money to its restoration. Fritwell, a Saxon manor, was granted to Bishop Odo at the Norman Conquest, and passed through many hands until, in 1570, it was sold to Edward Yorke, whose son is said to have built the present house. In 1730 Sir Baldwin Wake became owner. The manor was eventually purchased by the Rev. Samuel Yorke, a descendant of the original owners, in 1863. In 1892 Mr. Garner secured a lease of the house, which he described in his recently-published work.

"The Domestic Architecture of England during the Tudor Period." In restoring it every detail of the house has been carefully considered. The property, extending to 12 acres, will be offered at the Mart on November 8 by Messrs. Nicholas, together with the advowson to St. Olave's, Fritwell, where the first recorded plantation, in 1159, was confirmed by Pope Alexander III.

The Surveyors' Institution.

Mr. W. Edgar Horne, M.P., President of the Surveyors' Institution, will give his opening address in the enlarged lecture-hall

at the Institution, 12, Great George street, Westminster, S.W., at 8 p.m. on Monday, November 13. The portrait of Lord Alverstone, for twenty-five years Associate of the Council, will be unveiled on that occasion, and the Gold Medal for the best paper read during the previous session will be presented to Mr. E. H. Blake for his paper, entitled, "Some Notes on Highway Law as Affecting Property Owners." Other evenings during the early part of the session will be occupied by the resumed discussion upon Mr. Done's paper of last session on "The Development of Building Land" and a paper on "An Evening in the Institution Library," by Mr. Julian C. Rogers, etc.

The Royal Sanitary Institute: South African Branch.

The South African Branch of the Royal Sanitary Institute are arranging to hold a Congress in Cape Town on November 9, 10, and 11. This is the first Sanitary Congress to be held in British South Africa. Among the subjects set down for discussion are the disposal of sewage and school hygiene; papers will also be read dealing with other aspects of public health work. The South African branch has only recently been established by the Royal Sanitary Institute, and it seems to be energetically carrying on the traditions of the parent Institution. The Hon. Secretary to the branch is Dr. A. Jasper Anderson, the Medical Officer of Cape Town.

A Statue of the German Emperor.

A statue of the Kaiser will shortly be deposited in the session-room of the Berlin Academy of Arts. It has been sculptured by Professor Walter Schott, who has dressed the figure, in the XVIIth-century mode, in a perwig with the arms and armour of a Roman warrior, to accord with that of Frederick the Great, founder of the Academy, in another niche, and also with the decoration and style of the room. The cuirass is modelled after one of bronze in the Victoria and Albert Museum. The Emperor is shown holding a sceptre in his left hand resting upon his raised knee, with his right hand on the hip and his left foot resting on a ball.

Galton Laboratory of National Eugenics, University of London.

For the University of London, Professor F. M. Simpson, F.R.S.B.A., has made a set of sketch plans, which comprise a library, three laboratories, a lecture theatre, and a public museum, together with provision for the existing staff, research-rooms, etc., upon the Gower-street site, at an estimated cost of 15,000*l.* The authorities make an appeal for that sum to enable them to develop the study of the science of national eugenics in terms of the will of the late Sir Francis Galton and his bequest for the endowment of a professorship and laboratory. In pursuance of Sir Francis Galton's will the chair has been offered to, and accepted by, Professor Karl Pearson, F.R.S.

National Provincial Bank of England, New Premises.

The enlargement, in Dorset-street, of the Baker-street premises of the Bank is being carried out by Messrs. J. Simpson & Son, of Paddington-street, after Mr. Paul Waterhouse's plans and designs; the block No. 53, Baker-street, is by John Gibson (*obit* 1892), the architect of the Bank's premises at the junction of Threadneedle-street with what is now Bishopsgate, and in Piccadilly, and in several of our large provincial towns (see our issue of December 31, 1892). The Bank's new premises in Exeter, erected at a cost of some 11,000*l.*, are designed by Mr. J. H. Breverton, F.R.I.B.A., of Bournemouth.

Gas Fires.

With persistent rumours of coal strikes and coal famines, and rises in coal prices in actual being, it is not surprising to learn that the gas companies are finding a difficulty in coping with orders for gas fires. The growth in popularity of gas fires in recent years has, indeed, been extraordinarily rapid. This has been due, no doubt, to the improved design, accompanied by the increased efficiency of the fires brought out during the past two or three winters. Another cause has undoubtedly contributed to the growth of gas fires in public favour, and that is the fact

at this method of heating has been in recent years commended by the medical profession. We understand that all the principal gas companies have heavy stocks of coal on hand to meet the exceptional demands that is expected to fall upon them this winter, and that there will be no rise, possibly a fall, in the price charged by the largest company, i.e., the Gas Light and Coke Company.

Marble from Australia.

There are to be seen at the office of the Victorian Agent-General, Melbourne-place, a Strand, specimens of marble from Australia. These are specimens obtained from a quarry situated in Gippsland, Victoria. The deposits occupy a space of about 40 acres, showing, as they do, an endless variety of constitution, texture, colour, and marking. These specimens may be seen at any time. Mr. Gair, of Melbourne, who brought the specimens, will be in London for a few weeks, and will give any information to persons enquiring the same. Specimens of white marble will shortly arrive and be on exhibition the Agent-General's Office.

Housing and Town Planning Conference, West Bromwich.

The volume containing the papers read and the discussions at this Conference, held by the Institution of Municipal and County Engineers, illustrated by plates, will shortly be ready, and may be obtained of Messrs. E. F. N. Spon, Ltd., 57, Mark Lane, W., price 10s. 6d. The volume is edited by Mr. Thomas Cole, Secretary of the Institution.

MAGAZINES AND REVIEWS.

The *Art Journal* seems to be moving definitely in the direction of those other magazines that deal almost entirely with the work of the past, and to be devoting most of its pages to the connoisseur. An enthusiasm for the study of old furnishings seems to have taken possession of contributors rather to the exclusion of modern activities of art. As several other magazines already attempt to cover this ground, it seems a pity that the *Art Journal* should contract its range of interests to this type of subject. We welcome the illustrated article on Josef Israels (by Mr. Rudolf Dircks) as enabling those who have had little opportunity of seeing his works to form some idea of the character of his genius. Another article may be mentioned. It is by Mr. Darcy Braddell, who disputes the claim recently made in a book by Mr. Arthur Samuel (see review in our issue of June 2) that Piranesi, through his engravings, was the real inspiration of Robert Adam and other artists of the period. Mr. Braddell, however, cannot endorse this view, and is convinced that Adam was an independent genius who saw and acted for himself without "cribbing" from Piranesi. In his judgment we concur.

Professor W. R. Lethaby in the *Burlington Magazine* points out in a brief note the merit of some of the English medieval paintings to be found in our churches throughout the country. He refers to Mr. Tristram's series of copies of these works, and an excellent coloured illustration is reproduced from one of these of the Virgin and Child in the Choir Chapel at Chichester. The articles in this magazine—"Chinese Stone Sculpture," "Italian Medals in the Salting Collection," and "Old Chinese Porcelain from English Silver Models"—are all of interest to the decorative designer.

The most attractive subject dealt with in this month's *Connoisseur* is that of brass-harness ornaments, or amulets, as they are termed by the writer, Mr. E. V. Alison, who points out that the traditional designs for these are of extremely ancient origin. The variety in these designs might not be suspected by those who have not studied this form of art; the author of this article possesses about 200 different castings, and is acquainted with some 100 other designs. Many of these are based on symbolical figures, and others show a highly decorative treatment of subjects fairly obvious as to origin. The coloured plates in this magazine are not up to its

standard in other respects. We would rather have half the number if these were more artistically executed.

The *National Review* has a brief description of the recent activities of the German Government in converting the quiet and unprogressive Heligoland into a busy naval station.

In *Scribner* will be found an illustrated description of Hamburg, giving a good impression of the main features of this important city with its well-organised commercial activities.

Harper contains some remarks by Mildred Stapley on the American skyscraper, with illustrations of the effect in New York of these grouped masses of building. The impressive effect of these is well realised.

The *Pall Mall* has an article by Mr. W. Hyde on questions of St. Paul's Bridge, with sketches by the author of the possibilities offered for opening up St. Paul's on the lines that Wren would have adopted had he had his way in replanning the city. This instance of the present attitude towards our great monuments is handled as a text for the coming generation, who may be more enlightened. Another article on "The Building of a Jungle Railway" gives an interesting picture of pioneer work.

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council after the summer recess was held on Tuesday in the County Hall, Spring-gardens, S.W., the Chairman, Mr. Edward White, presiding.

LOANS.—A loan is to be made to the Chelsea Borough Council to the amount of 3,700l. for the purpose of street improvements. The Islington Borough Council is to receive a loan of 2,600l. for the purpose of repaving works in Southgate-road (western side).

A loan of 1,194l. is also to be made to the Lewisham Borough Council in order for them to carry out the reconstruction of the Ravensbourne-street railway bridge.

The following loans were also agreed to:—St. Pancras Borough Council, 4,896l. for paving works; Shoreditch Borough Council, 6,000l. for contribution towards acquisition of a site for an open space; Woolwich Borough Council, 600l. for sewer works and 1,066l. for street improvements.

SCHOOL, SOUTHWARK.—The Education Committee reported that they had approved plans for the enlargement of the Pockock-street School at an estimated cost of 100l.

Vauxhall Sub-Station.—It was reported by the Highways Committee that it had become necessary to erect an additional substation at Vauxhall, owing to the increased service of cars in the district.

MEMORIAL TO KING EDWARD VII.—It was proposed by the Vice-Chairman of the Council, Mr. Cyril S. Jackson, that the formation of a park or open space at Shadwell would afford a fitting memorial in East London to the late King, and that it should be referred to the Memorial Committee for consideration and their report. This was seconded by Mr. J. Whitaker Thompson, and was agreed to by the whole Council. Another motion, however, was put forward by Mr. Frank Smith to the effect that it would be a more fitting memorial for a minimum wage of 30s. per week for a week of six days to be paid to the adult employees of the Council. The motion, however, met with no approval.

THEATRES, ETC.—The following drawings have been approved by the Theatres and Music Halls Committee:—

Britannia Theatre, Hoxton—provision of permanent cinematograph enclosure and re-winding-room.

Collins' Music Hall, Islington-green—alterations to balcony, alterations to electrical arrangements, provision of a permanent cinematograph enclosure.

Comedy Theatre—alterations to electrical installation, and alterations to sanitary arrangements.

Daly's Theatre—provision of two arc-light chambers at the sides of the gallery.

His Majesty's Theatre—provision of office for stage manager.

Holloway Empire—provision of a permanent cinematograph enclosure.

London Coliseum—adaptation of certain rooms for use as dressing-rooms, and of two lavatories for use as attendants' rooms.

London Hippodrome—alterations to lantern light over the stage.

Middlesex Music Hall—provision of electrical installation; provision of system of ventilation; provision of a tearoom at the balcony level; formation of openings between the stage, the emergency exit passage, and the dressing-room entrance.

New Theatre—provision of an arc lamp bracket in the passage at the rear of the gallery.

Palace Theatre of Varieties—provision of an oil engine and boilers in connexion with the lighting and heating of the premises.

Peckham Hippodrome—provision of a permanent cinematograph enclosure.

People's Palace, Mile End-road—alterations and additions to dressing-rooms and lavatories.

Playhouse, Northumberland-avenue—provision of electrically-driven fans.

Scala Theatre—provision of new generating chamber.

Shakespeare Theatre—provision of permanent cinematograph enclosure.

Terry's Theatre (Grand Casino)—provision of a new cinematograph enclosure.

Victoria Palace, Victoria-street—provision of electrical installation; arrangement of secondary escape staircase from the dressing-rooms; provision of a battery for the secondary lighting; provision of ventilating and heating appliances.

FULHAM EMPIRE.—It was reported by the same Committee and it was agreed that no objection should be offered to the erection of the Fulham Empire on a site at Nos. 444 and 446, Fulham-road, and that the drawings be approved.

CINEMATOGRAH THEATRE.—It was also reported that it was proposed to erect a new cinematograph theatre on a site at Nos. 538 and 540, Kingsland-road, and that drawings for the same were under consideration. A similar theatre is to be erected in the site of No. 140, Maida Vale.

BATTERSEA.—The Improvements Committee reported that various works were to be carried out in this borough, including the widening of Lavender-hill at the Battersea district post-office, at an estimated cost of 1,210l.

NEW BUILDINGS, WESTMINSTER.—The same Committee also reported that they had approved of the drawings of new buildings which are to be erected on a site at the junction of Smith-square, Westminster, with the proposed new street leading from the square to Tufon-street.

HANWELL ASYLUM.—In a report of the Asylums Committee it was stated that various alterations were to be carried out at this Asylum, including the removal of brickwork enclosure and flues and the provision of metal flues in their place. The estimated cost of this work is 190l.

FIFTY YEARS AGO.

From the *Builder* of October 19, 1861.

Increased Speed in Building Operations.

NOT many years ago, in provincial districts, which were even of importance then, the erection of houses or other buildings was a rare event and a work of time. In the northern counties of England, when the foundation of a building was commenced, there was a feast given to the workmen; and when the walls had been raised to the full height, and the first rafter of the roof laid, flags were hung out, and another feast was made, called the "raising supper." The time occupied in building a house or other structure was, in comparison with the present operations, extraordinary; but then the work was generally well and substantially done. Now the warfarer, particularly in the metropolis, may walk along a neighbourhood which is open and unbuild upon, and in less than two months after, passing the same way, will find it occupied by houses. The raising supper and other observances are not thought of.

EDITORIAL SUMMARY.

Our leading article, "French Neo-Classical Architecture," is a review of Professor Reginald Blomfield's book on "A History of French Architecture, 1494 to 1861," in two volumes. Some illustrations from the book accompany the article.

A second leader, "The Australian Capital Competition," deals with the constitution of the jury of assessors in the competition for the new Capital City of Australia (p. 438).

Under the heading "Notes" (p. 439) will be found comments on: "Painters and Lead Poisoning"; "The Duke of Rutland and our Ancient Monuments"; "Forestry in India"; "Portinscale Bridge"; "Canterbury Cathedral."

Some remarks on three picture exhibitions are given on p. 440.

A combined ordinary general and Camera, Sketch, and Debate Club meeting of the Architectural Association was held on the 16th inst., when Mr. Raymond Unwin read a paper on "Town Planning: Formal or Irregular?" and an interesting discussion followed (p. 440).

Some notes on the magazines of the month are given on p. 445 under the heading "Magazines and Reviews."

In Correspondence column (p. 446) will be found letters on: "Manchester Library Competition"; "The Coptic Monasteries of the Wady-el-Natroun, Lower Egypt"; "London Brick and Stone Work."

The illustrated Monthly Engineering Review (p. 449) contains articles on: "Messrs. Arding & Hobbs's New Premises, Clapham Junction"; "Foundation Loads"; and Notes.

The Building Trade Section (p. 455) includes: "The Industrial Council"; "Strikes and Lock-outs"; "The Employers' Parliamentary Council"; "Manchester Building Trade"; "Hull Master Builders"; "Applications under the London Building Acts"; "Projected New Buildings in the Provinces," etc.

A résumé of the twenty-seventh annual Report of the Council of the Society of Architects will be found on p. 459. The negotiations with the Royal Institute of British Architects in reference to registration are dealt with.

A report of a case under the Tribunal of Appeal under the London Building Act, i.e., "The London County and Westminster Bank v. the London County Council," is given on p. 459.

MEETINGS.

FRIDAY, OCTOBER 20.

The Royal Archaeological Institute.—Visit to Westminster Abbey. 10.30 a.m.

Institution of Mechanical Engineers.—Mr. E. M. Eden, of the Armstrong College, Newcastle-on-Tyne, Mr. W. N. Rose, and Mr. F. L. Cunningham (Graduate), of London, on "The Endurance of Metals: Experiments on Rotating Beams at University College, London." 8 p.m.

SATURDAY, OCTOBER 21.

The Institution of Municipal Engineers.—The third annual general meeting, to be held at Windsor.

The Institution of Municipal and County Engineers.—Metropolitan district meeting, to be held at Battersea. *Architectural Association*.—Mr. W. Kelly, A.R.S.A., on "Drum Castle." Illustrated. 7.30 p.m.

TUESDAY, OCTOBER 24.

Nathaniel's Architectural Society.—Opening and general meeting. (1) Announcements by the President; (2) short lantern lecture by Mr. H. Gill, entitled "Holiday Rambles in Norfolk." 8 p.m.

Battersea Polytechnic (Lectures on Illuminating Engineering).—Professor J. T. Morris, M.Inst.E.E., on "Electric Lighting." 7.15 p.m.

Architectural Association Athletic Club.—Annual general meeting. 6.30 p.m.

WEDNESDAY, OCTOBER 25.

Manchester Society of Architects.—Professor Beresford Pitt on "Esthetic Treatment of Ferro-Concrete." 6.30 p.m.

THURSDAY, OCTOBER 26.

London County Council School of Building, Farnborough, Brixton, S.W.—Second of a course of special Heating and Ventilating and Copper Pipe Work, by Mr. W. Fretwell, to members of the United Operative Plumbers' Association and other bona-fide plumbers. 8 p.m.

THE BUILDER.

[OCTOBER 20, 1911.]

London County Council School of Building, Farnborough, Brixton, S.W.—Special lecture on "Glass and Rome," by Professor Beresford Pitt. 7.30 p.m. The lecture will be illustrated by lantern slides.

FRIDAY, OCTOBER 27.

Glasgow Technical College Architectural Craftsmen's Society.—Professor Gourlay on "The College Diploma and Certificate Courses in Building." 7.45 p.m.

SATURDAY, OCTOBER 28.

Institution of Municipal Engineers. Visit to Brentwood Sewage Disposal Works.

COMPETITION NEWS.

Manchester Library and Art Gallery.

The Manchester City Council Royal Infirmary Old Site Special Committee met on Tuesday to consider the position as raised by the decision of the Council at the meeting held the previous Wednesday and the deposit with them of designs for a new Art Gallery and Free Library. They adopted the report of the assessor (Professor Reginald Blomfield, A.R.A.) on the two selected plans, out of which he chose one as the best. Of this plan Professor Blomfield reported that "the architectural character of the design generally is that of severe Classic, such as was practised in Manchester and Liverpool in the earlier part of the last century, and is, in my opinion, eminently suitable for the purpose. Its details have been well considered from a practical point of view, and the result is, in my opinion, a fine, straightforward architectural monument, well adapted to the site, and worthy of its position as a central feature of Manchester."

The Special Committee add that in consequence of the adoption by the Council of the resolution moved by Mr. Taylor they are unable to make a recommendation as regards the carrying out of the scheme. But inasmuch as such resolution excepts obligations which have been entered into, it is necessary to determine the successful architect in the competition which has taken place in order that his rights and the obligations of the Corporation may be determined. The Council are therefore invited for this purpose, and for no other, to approve the recommendation of the assessor and the Committee.—*Manchester Guardian*.

Australian Federal Capital.

Advices received by the last Australian mail are to the effect that the Minister for Home Affairs (Mr. O'Malley) has refused the suggestion, made by the Architects' Association of Great Britain and America, that they should have representatives on the Board to determine the competition for designs for the Federal Capital. The words of the Minister for Home Affairs were:—"The position taken up by the London Association shows a want of confidence in the honesty and impartiality of Australian professional men, and, although I regret the stand taken by so important an organisation, I cannot depart from the scheme laid down."

A.A. Silver Medal, 1912.

It is a sign of the times that the students of the Architectural Association have been set a re-planning scheme for next year's Silver Medal. The subject is "The Treatment of the Head of the Serpentine, Kensington-gardens End." The subject for the Travelling Studentship is a "Memorial Bridge to King Edward VII." No iron is to enter into the construction.

CORRESPONDENCE.

Manchester Library Competition.

SIR,—In publishing the statement that "Manchester architects are taking vigorous action" with the intention of upsetting an award which has not yet been made public in respect of designs which have not yet been seen, I feel that you are doing Manchester architects a grave injustice. I can claim to be in fairly close touch with a large number of Manchester architects, but Mr. Singleton's letter in your issue of the 13th inst. is the first intimation I have had of any such protest or intentions. EDGAR WOOD.

[** We may point out that, as stated last week, we are not responsible for correspondents' views.—Ed.]

The Coptic Monasteries of the Wady-el-Natroun, Lower Egypt.

SIR,—The writer of the interesting article published in your issue of October 13 has not explained at any length the plans of the various churches in the desert monasteries, but he has made one remark which calls for some comment. He states that the "churches follow no definite plan, but in common with all Coptic churches they have three eastern sanctuaries screened off from the main body of the church." It seems to have been generally accepted that three eastern "chapels" are essential to a Coptic church ever since Mr. A. J. Butler's assertion in his volumes on the Coptic Churches of Cairo and the Desert Monasteries in 1884; but surely it is unwise to accept a generality of this description on the evidence of the few examples which have at present been made public.

There are innumerable small churches throughout the Nile Valley, of which the desert sanctuary theory can only be made to apply by a great stretch of the imagination and the exclusion of the obvious evidence. The side aisles of these churches are often less than 2 metres wide, and the space between the screen and the end wall of the aisles in some cases is barely a metre, and could rarely have exceeded 1½ metres.

The churches seem to fall into four main groups, but no clear distinction is possible with the scanty information obtainable. These are the Cairene type, which consists of many chapels within one building; the larger monastic type, which is often similar to the first; the small monastic church; and the village church. Churches erected over the graves of saints seem to occur in some places, and it appears that the Nestorian cemeteries at the Oasis of El Khargeh are of the nature of groves of churches on a small scale.

Although it seems customary in Cairo and the Natroun Valley to incorporate several chapels in every church, it appears that in the restoration of the church dedicated to El Baramus, which was finished in 1884, no subsidiary sanctuaries were refurbished, at least on the main floor, even if they had formerly existed.

It must be obvious to any of your readers from the beautiful drawings and photographs published in your last issue that there is a great deal of interest and of value to be learnt from the Christian architecture in Egypt. It is time that some combined effort should be made for the systematic study of the various buildings before they are destroyed or restored. GEOFFREY S. MILLHAM.

London Brick and Stone Work.

SIR,—You noticed in your issue of October 6 the very pleasing result of bringing to light the old yellow brick facings above the shops in the Burlington Arcade, and a striking contrast to this piece of renovation that should not pass unnoticed is the painting, in common with the whole of the front, of the old Portland stone dressings to the premises in Piccadilly, at the corner of Bolton-street, recently taken by one of the London yacht clubs. The stone was bleached to a white that is not to be obtained by any applied decoration, and it is to be regretted that the characteristic note of a typical example of London architecture should have been sacrificed to the fresh garb of paint given to the whole building, matter for yearly consideration if this freshness is to be preserved, while the old stone and brick could only increase their harmony with age.

London brickwork might well receive a little more consideration, and one would not have thought it any longer necessary to enter a defence for the stone which, alone and in that happy harmony with brick, has produced those effects which have provided the Metropolitan with its architectural character, and will endure after the stucco fronts of Bayswater have exhausted even the virtue of the annual coat of paint to make them passable. MAX JUDGE.

AN OLD BUILDERS' MERCHANT'S BUSINESS.

With reference to the paragraph which appeared in our last issue under this heading, we are informed that the executors of the late Mr. Edward Penny Trepoard have induced the Manager, Mr. L. L. Stockwell, so long associated with the business, to say that he is prepared to transfer his services to the purchaser of the goodwill.

INTERCOMMUNICATION COLUMN.

Staining Stonework.

SIR.—Would any of your readers inform me the best method of treating new stonework to give it a permanent old appearance to make it match existing stonework in altering and restoring a house over 100 years old? The stone in question is a freestone of a yellowish-white appearance quarried near the house in the North of Scotland.

W. H. W.

Clay Foundations.

SIR.—The correspondence in your columns on underpinning is most interesting at the present time when one sees on every hand houses propped up "in splints" on account of settlements caused by the shrinkage of the clay subsoil following the very dry and hot summer we have had.

I have been wondering what amount of underpinning the Editorial note following Mr. Geo. Elms' letter in your issue of last week will produce in the minds of a great many—underpinning to a depth of 5 ft. or 6 ft.—and yet my experience of underpinning carried out in all parts of London under well-known architects is that 5 ft. or 6 ft. is the minimum in most cases, and I say deliberately and I have many instances which go to prove the statement that unless underpinning is tackled thoroughly and skilfully it is infinitely better left alone.

I have two jobs in hand now; in both cases the architects have much more difficult problems to deal with, and the work is

consequently more extensive, because previously an attempt had been made (in one case twice) to patch up the settlement by small pieces of underpinning under the fractures and pointing in the openings. Doubtless it cost less at the time, but the money might as well have been thrown away.

I should advise Mr. Elms, as I have many others, to put their difficulty into the hands of some competent architect, and give him a free hand to do what he considers necessary in their interest. To suggest, as is sometimes done, a reduction on what is advised on the ground of expense seems to me somewhat analogous to a patient asking a surgeon in the case of appendicitis if to remove half the appendix would not meet the case and reduce the cost.

CHARLES R. PRICE.

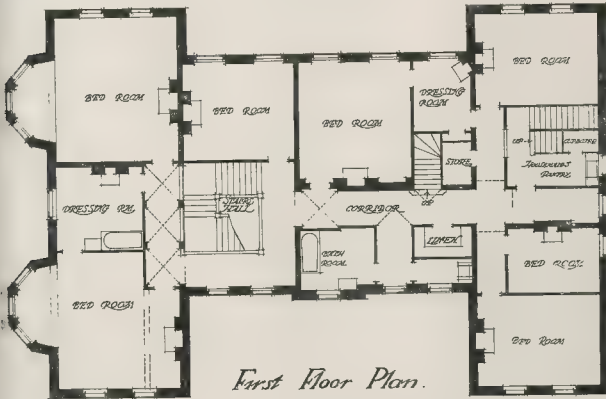
ILLUSTRATIONS.

Ashley Church, Staffordshire.

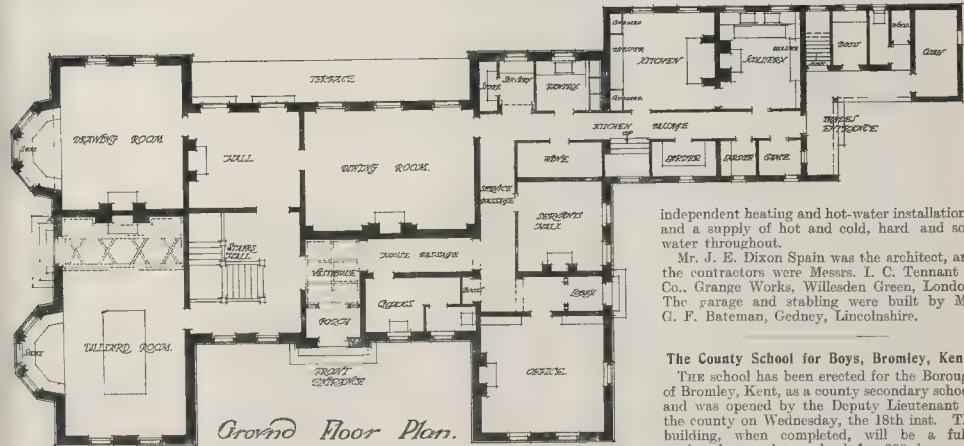
THIS church, recently restored by the late the Hon. F. Meynell, was built about eighty years ago, and is an example of the undignified type common to the period.

Although the fabric has not been disturbed to any great extent, the whole internal effect has been altered. The old and unsightly east window has been removed, and a tall, well-proportioned reredos now practically covers the east wall.

The old ugly deal pews have been replaced in the nave by chairs and by oak choir stalls in the chancel, which is now divided from the nave by a tall and elaborately traceried screen.



First Floor Plan.



Ground Floor Plan.

Hovenden House, Lincolnshire.

Mr. J. E. Dixon Spain, Architect.

A chapel has been formed in the north aisle by means of screens dividing it from the nave and chancel.

An organ gallery has been erected at the west end, and, externally, a new vestry has been built, the latter being entered under the gallery.

Other new features are a bishop's throne, sedilia, font, and black-and-white marble paving in the chancel.

The architect was Mr. Cecil G. Hare.

Workshop Priory Church.

The priory at Workshop was founded for Augustinian Canons about 1103 by William de Lovetot, to whom the manor belonged. The original church was transeptal, with aisles to the presbytery and nave, of which the western arch of the crossing and one bay of the nave remain. The rest of the nave was completed quite late in the XIIth century. The east end seems to have been transformed, like Southwell, in the thirteenth century, and of this work a still remains, but in ruin. The cloister was on the north side of the nave, and part of the western range remains.

The nave seems to have been always parochial, and to this fact its preservation is due; the whole of the rest of the building except the south chapel was destroyed at the suppression.

The parish has grown recently to such an extent that the nave does not hold anything like sufficient sittings in proportion to the population, and an enlargement of the church is absolutely necessary.

It is therefore proposed to build a new eastern arm with the transepts on the lines of the old work.

The east end, however, has to be restricted in length owing to the boundary of the churchyard. The south chapel is to be repaired in memory of the late vicar, and new vestries are to be on the north side of the presbytery. The style chosen for the new work is based upon the south chapel; but the south transept, having left a considerable piece of its XIIth century south end, will be repaired in character with that work.

It is proposed that the building be carried out in sections, as the necessary funds allow. The architect entrusted with the work is Mr. Harold Brakspear, F.S.A., A.R.I.B.A., of Corsham, Wiltshire.

Hovenden House, Lincolnshire.

THIS residence has recently been built at Fleet, Lincolnshire, for Mr. Arthur H. Worth. In general the design of the house follows on typically English traditional lines. The main staircase, chimney-pieces, hall-panelling, and joinery throughout have been designed and detailed in the same spirit. The external brickwork is purple and silver grey in colour, and the roof is covered with hand-made tiles. The house is lighted by electricity, has

independent heating and hot-water installations, and a supply of hot and cold, hard and soft water throughout.

Mr. J. E. Dixon Spain was the architect, and the contractors were Messrs. I. C. Tennant & Co., Grange Works, Willesden Green, London. The garage and stabling were built by Mr. G. F. Bateman, Gedney, Lincolnshire.

The County School for Boys, Bromley, Kent.

The school has been erected for the Borough of Bromley, Kent, as a county secondary school, and was opened by the Deputy Lieutenant of the county on Wednesday, the 18th inst. The building, when completed, will be a fully equipped secondary school for 300 boys; at present it provides for 200. The accommodation is best shown by the plans themselves;

but slight variations have been made in the execution of the work. The central block contains the assembly hall, class and lecture rooms, and the whole of the teaching portion of the school. The eastern and western wings contain the dining-hall, gymnasium, and ancillary accommodation. The caretaker's house and school kitchen adjoins the eastern wing.

The illustration of the building is from the drawing exhibited at the Royal Academy in 1903. The design is of XVIIIth century character, a fashion of building which adapts itself readily to modern requirements of light, ventilation, and arrangement, and, while of sufficient dignity, has a domestic feeling which makes it most suitable for school buildings. The elevations are of picked dark brown Crowborough bricks and Lawrence's hand-made red bricks, and the dressings throughout are of Portland stone. The roofs are covered with

dark red hand-made tiles. The floors are of steel and concrete, and care has been taken to ensure as far as possible sound-proofness by the provision of air spaces between the floors and ceilings. The assembly hall, headmaster's room, waiting-hall, etc., are wood panelled. The dados of antique glazed tiles in classrooms, corridors and staircases, and the tiling of the walls of changing rooms, lavatories, and cloakrooms make for both cleanliness and brightness.

The work has been thoroughly well carried out by the general contractors, Messrs. R. Cook & Sons, of Crawley. The stone carving and modelling has been executed by Mr. F. Brooke Hitch, and the wrought-iron entrance-gates are excellent specimens of the work of Mr. E. Norkett, of Maidenhead. Of other sub-contractors, Messrs. Shore & Co. are responsible for the heating and electric lighting; the Veronese Company for modelled plaster work;

the wall tiling is by Messrs. Martin van Straaten & Co.; sanitary fittings by Mr. T. Harris, of Blackfriars; the door furniture by Messrs. Humphries, Jackson, & Ambler; and the fire-places were supplied by Messrs. Bratt, Colbran, & Co.

The clerk of the works was Mr. W. Roberts. H. P. BURKE DOWNING.

BOOKS RECEIVED.

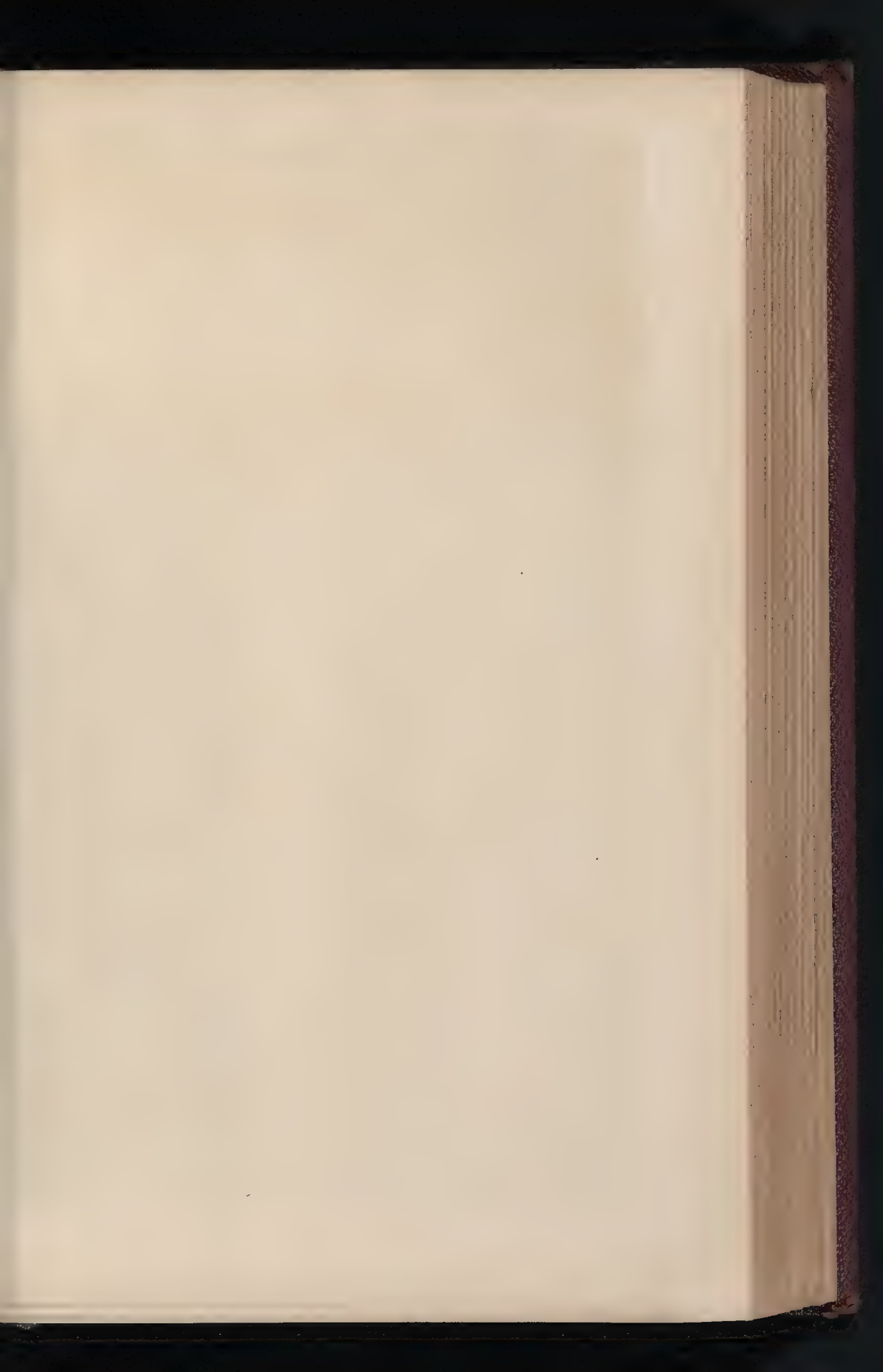
LONDON HOUSES FROM 1660 TO 1820. By A. E. Richardson and C. Lovett Gill. (London: B. T. Batsford. 15s. net.)

SMOKE PREVENTION AND FUEL ECONOMY. By W. H. Booth and John B. C. Kershaw. (London: Constable & Co. 6s. net.)

DRAINAGE WORK AND SANITARY FITTINGS. By W. H. Maxwell, A.M.Inst.C.E. (London: St. Bride's Press. 2s. net.)



Entrance Gate, the County School for Boys, Bromley, Kent.
Mr. H. P. Burke Downing, F.R.I.B.A., Architect.

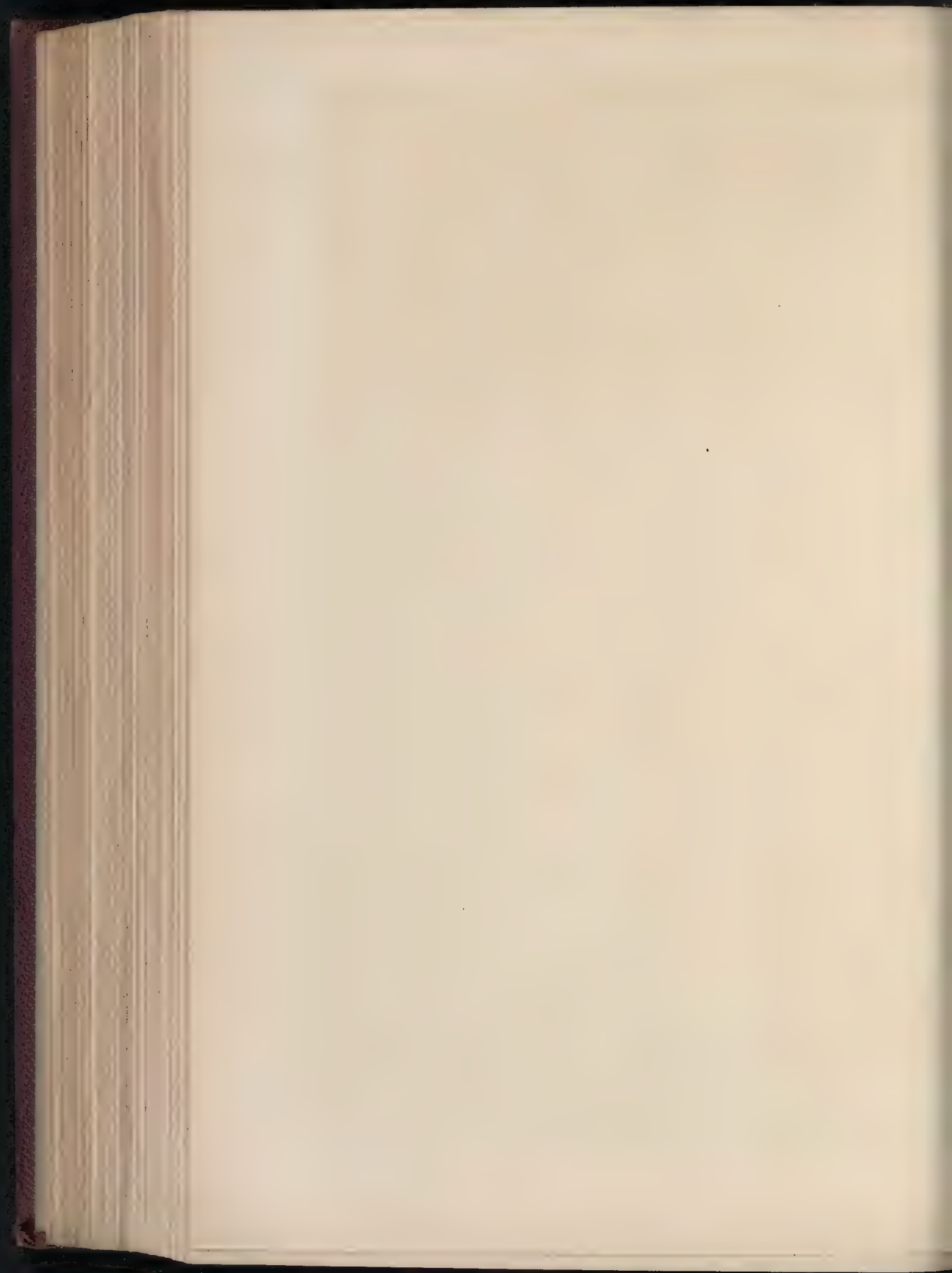


THE BUILDER, OCTOBER 20, 1911



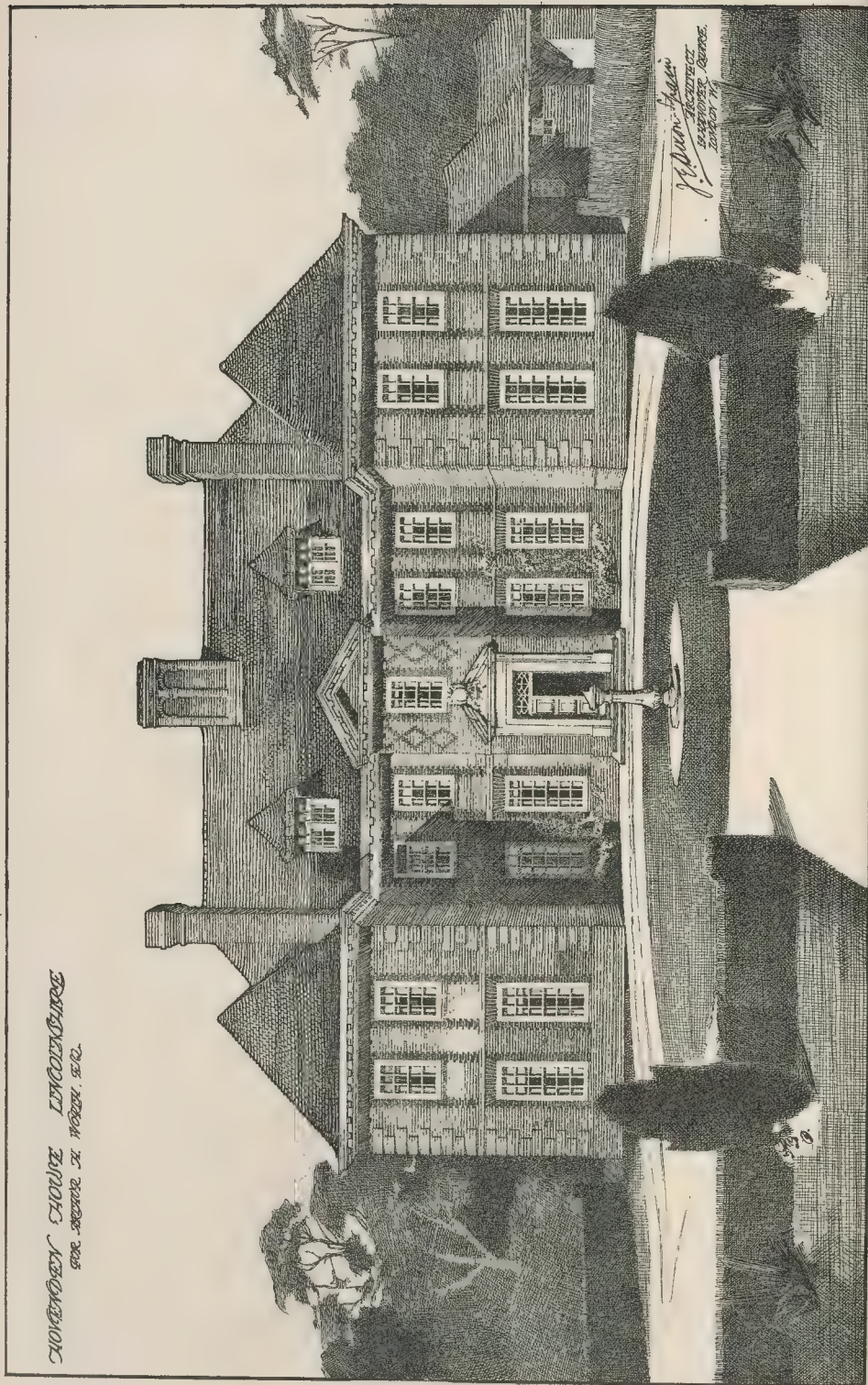


RESTORATION OF ASHLEY CHURCH STAIRS. M. C. C. G. HAVE ACCORD



THE BUILDER, OCTOBER 20, 1911.

THE NEW YORK
 ASSOCIATION
 OF THE
 BUILDERS

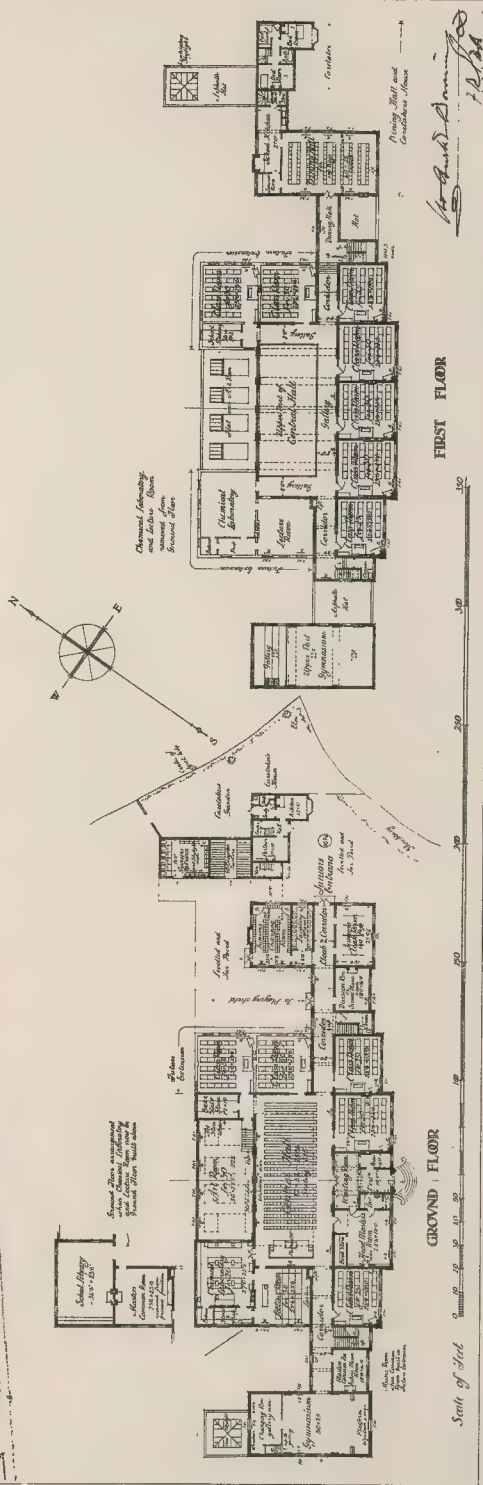
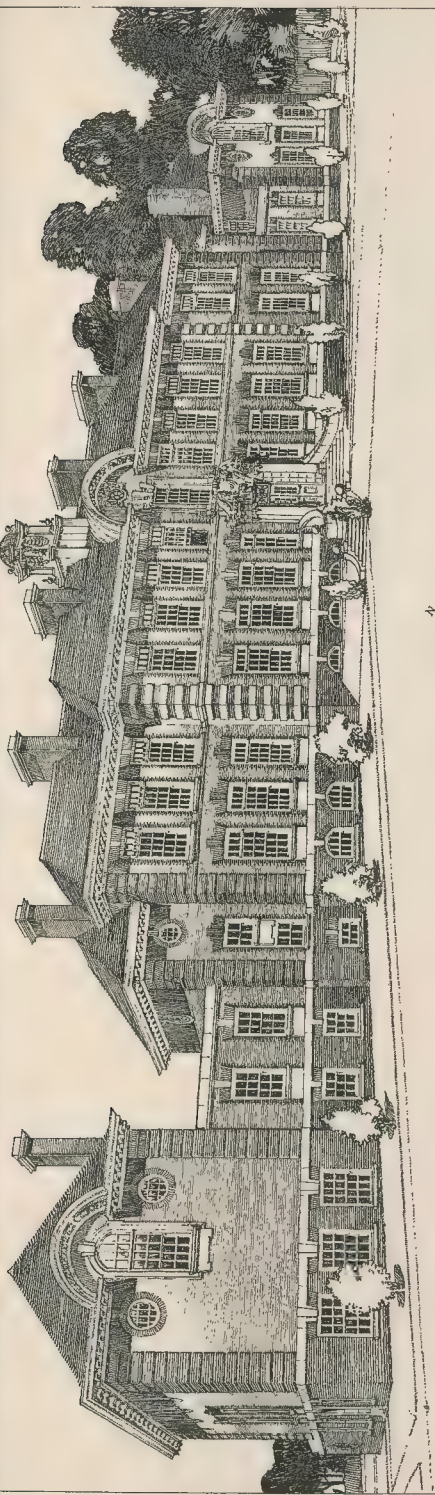


THE BUILDER, OCTOBER 20, 1911.





WORKSOP PRIORY CHURCH. NEW EAST END.—MR. HAROLD SPANSPER, A.R.B.A., ARCHITECT.



THE COUNTY SCHOOL FOR BOYS, BROMLEY, KENT.—MR. H. P. BURKE DOWNING, F.R.I.B.A., ARCHITECT.

PHOTOGRAPH BY MR. A. B. LAST, LONDON, STREET, FETTER LANE, E.C.

MONTHLY REVIEW *of* ENGINEERING.

View at the Junction of Lavender-hill and St. John's-road.

Messrs. J. S. Gibson, Skipwith, & Gordon, Architects.

MESSRS. ARDING & HOBBS'S NEW PREMISES, CLAPHAM JUNCTION.

NCE the disastrous fire of Christmas, 1909, which swept away the ill-assorted collection of buildings then owned by Messrs. Arding & Hobbs at Clapham Junction, and caused the loss of many lives, a good deal has been written in technical journals and the daily Press regarding the risks in establishments devoted to the sale of textile fabrics and other inflammable materials.

We have already commented upon the Clapham Junction fire, and need not revert to the subject save to point out that the fire in drapery establishments can hardly be prevented by the adoption of fire-resisting construction and the provision of apparatus and appliances designed for the extinction of fire in its early stages. It is distinctly satisfactory to find that the new block erected for Messrs. Arding & Hobbs on the site of their former agglomeration embodies all reasonable precautions against another great fire—a fact which is all the more valuable to the firm and to Messrs. Gibson, Skipwith, & Gordon, the architects of the new building. The old premises originally consisted of a small building erected in 1885 on part of the present site, additional shops being added from time to time until the establishment employed for some 400 persons. Immediately after the fire steps were taken to clear the site, an operation

taking three months to complete and occupying 300 men, who worked day and night.

General Description.

Although a large amount of steelwork has been employed, the structure is not a steel-frame building, for brickwork has been relied upon as far as possible, and only in places where exceptionally heavy loads have to be carried, and where shop windows prohibited the construction of solid walls, have steel stanchions been introduced into the walls. The floors represent a combination of steelwork and reinforced concrete. The building is divided up into seven sections, isolated by fire walls and doors, and emergency stairs of fire-resisting construction provide ready means of escape from all the floors. An important feature of the general fire-fighting equipment is the sprinkler installation commanding every department of the establishment and supplied with water from a large tank in the upper part of the corner tower.

The view at the head of this article shows the general character of the architectural design, which, like that of many business premises, inevitably suffers from the demand for an almost unbroken line of windows for the display of goods, thereby compelling the architects to give an aspect of insecurity to the exterior and spoiling the effect of the

upper portion. It is sufficiently evident from our photograph that if the architects had been permitted to make the two lower stories accord with those above the building would have possessed considerable merit from the artistic standpoint.

The site covers an area of nearly 29,000 sq. ft., and the building has three street frontages, all faced with stone, on Lavender-hill, St. John's-road, and Ilminster-gardens respectively. The fourth façade between St. John's-road and Ilminster-gardens is isolated from the adjacent buildings. The lineal extent of shop windows is 650 ft., exclusive of "island" windows at pavement level.

Fig. 1 is a plan showing the general arrangement of the building at ground-floor level. Here the seven fire isolation sections are indicated, their outlines being formed by the thick interior walls. Section No. 1, occupied by offices, is 46 ft. 6 in. long by 32 ft. wide; Section No. 2, used for the restaurant, is 65 ft. long by 32 ft. wide; Sections Nos. 3 to 7, used as sale departments, measure 67 ft. 6 in. by 45 ft., 67 ft. by 61 ft., 96 ft. by 42 ft., 76 ft. by 42 ft., and 96 ft. by 42 ft. respectively, these dimensions only applying accurately to the sections of symmetrical form.

The fire walls separating the various sections of the building are pierced by inter-communication openings, all fitted with

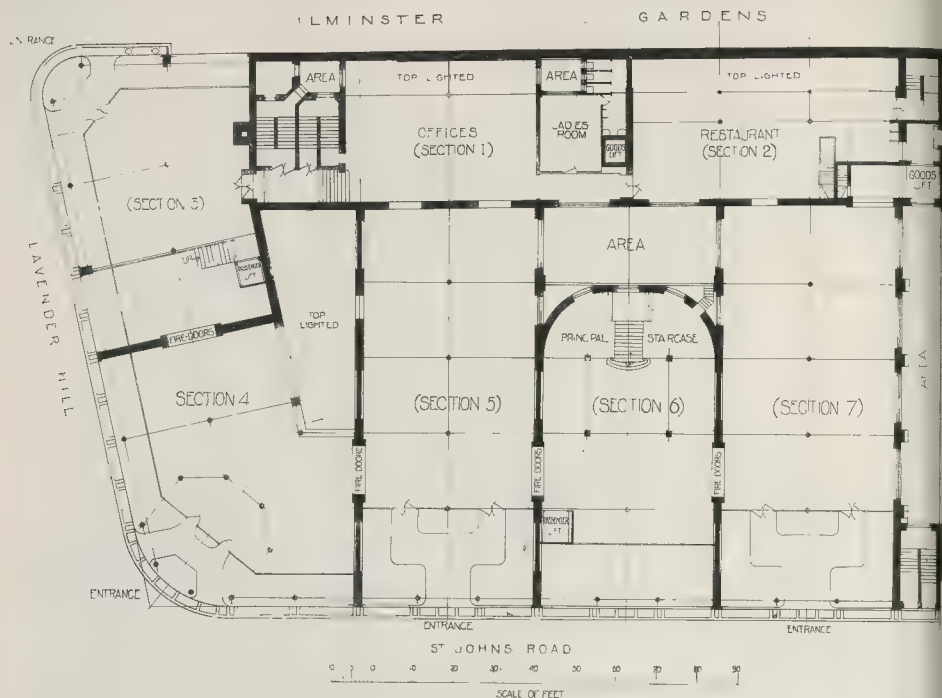


Fig. 1. New Premises for Messrs. Arding & Hobbs, Clapham Junction: Ground Floor Plan.

Messrs. J. S. Gibson, Skipwith, & Gordon, Architects.

double fire doors 3 ft. apart. These doors can be rapidly shut in case of fire, and are closed every day after business hours. As may be seen by reference to the plan, the openings are of different widths, those between the show-rooms being 12 ft. wide. The larger doors are of the sliding type and the smaller ones are hinged. In addition to

these fire doors, all doors used by the public are made of hard wood not readily attacked by flame. The plan also shows the ample provision made in the form of stairways for communication between the floors, the four staff and emergency stairs extending from bottom to top of the building. The principal stairs, a view of which is given

in Fig. 2, only continue to first-floor level, a secondary self-contained staircase being provided for connecting the first and second floors. For the convenience of customers and visitors, two passenger lifts connect the ground, first, and second floors, and two goods lifts have been installed for handling merchandise.

Section No. 4 includes the space under one of the interior light wells, the second light well being behind the principal staircase. A long area on the south side of the building also serves the purpose of a light well.

From the tower to the corner of Ilminster gardens Lavender-hill slopes upward to the extent of 16 ft., causing the ground floor along Ilminster-gardens to be quite below pavement level. Consequently the office and restaurant are top lighted, an arrangement rendered practicable by the fact that the building line is set back 10 ft. above ground level.

The four public entrances and "island" show windows in these are shown in the plan. The accommodation provided is as follows:—

Basement.—Receiving and packing rooms, stores, heating chamber, power and exchange rooms for fifty Lamson type vacuum system cash tubes, gentlemen's smoking-room.

Ground Floor.—Show-rooms, office, restaurant, ladies' room, and a post-office including telegraph, telephone, money order and savings bank departments.

First and Second Floors.—Show-rooms and counting-house.

Third Floor.—Work-rooms, staff dining and cloak rooms, kitchens, and service-rooms.

The roof is flat and covered with asphalt.

Steel Construction.

The main girders and beams throughout the building are of steel in spans averaging about 22 ft. and in no case more than 30 ft. between supports. These members are carried principally by built-up steel stanchions and solid steel columns of circular cross-section.



Fig. 2. Grand Staircase.

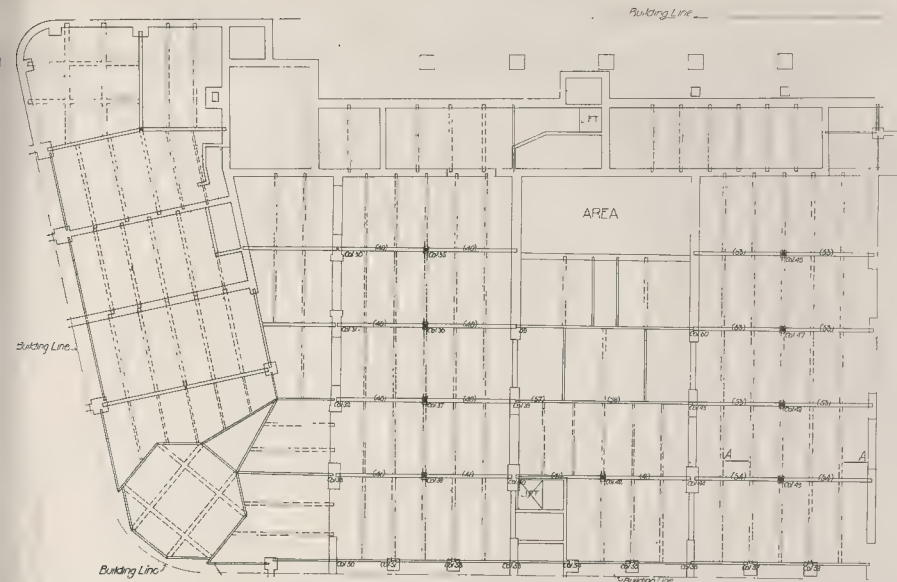


Fig. 3. Typical Plan showing Columns and Beams.

on. In some cases the girders and beams are carried at one end by brick walls.

The steelwork is cased in with concrete at least 2 in. thick, mixed in the proportions of 2:4 for protection against fire.

The tower at the junction of Lavender- and St. John's-road is an irregular polygon in plan. It is founded on a steel giraffe from which rise built-up steel stanchions receiving and transmitting all to the foundations.

The details of steel construction in the floors and flat roof do not differ materially, we may refer the reader to Fig. 3 for particulars of the girder and beam arrangement. This drawing represents the frame of the ground floor, including the steel stanchions, girders, and beams, and the concrete beams and slabs.

The foundations for the corner tower are supported by a steel giraffe embedded in

concrete, the arrangement being shown by the half plan in Fig. 4, where we also give a small diagrammatic key plan of the giraffe, which is 35 ft. square approximately, three of the sides being 7 ft. wide and one 9 ft. wide, the four sides forming a hollow square in plan with the corners removed.

The giraffe comprises two series of beams. The lower series consists of 9-in. by 4-in. I-bars spaced apart, from centre to centre, 1 ft. 2½ in. on Lavender-hill, 1 ft. 3 in. on St. John's-road and the opposite side, and 8½ in. on the fourth side of the foundation. The upper series consists of 18-in. by 7-in. I-bars arranged in parallel rows spaced 10½ in. apart, centre to centre. Stiffeners are riveted to the upper series of giraffe beams in the positions denoted by the letters SS on the half plan, details of the stiffeners being given in the drawing to larger scale in Fig. 4.

All three rows of the upper series are

securely connected by angle brackets at the corners, where also additional beams of the same dimensions as those in the lower series are placed diagonally.

The first drawing in Fig. 5 shows details of the eight built-up steel columns, Nos. 16 to 23, which extend to the height of 6 ft. 6 in. above basement-floor level, and are bolted at the bottom to the 18-in. by 7-in. beams of the giraffe. The stanchions are fitted with caps, a typical detail of the connexions being given above the elevations of the stanchion. It will be noticed that above the level mentioned the stanchions are continued in the form of cylindrical solid steel columns of 7 in. diameter.

The second drawing in Fig. 5 contains details of stanchion No. 50, which may be taken as being generally typical of stanchions built into brick walls for the support of heavy girders. It should be noted, however,

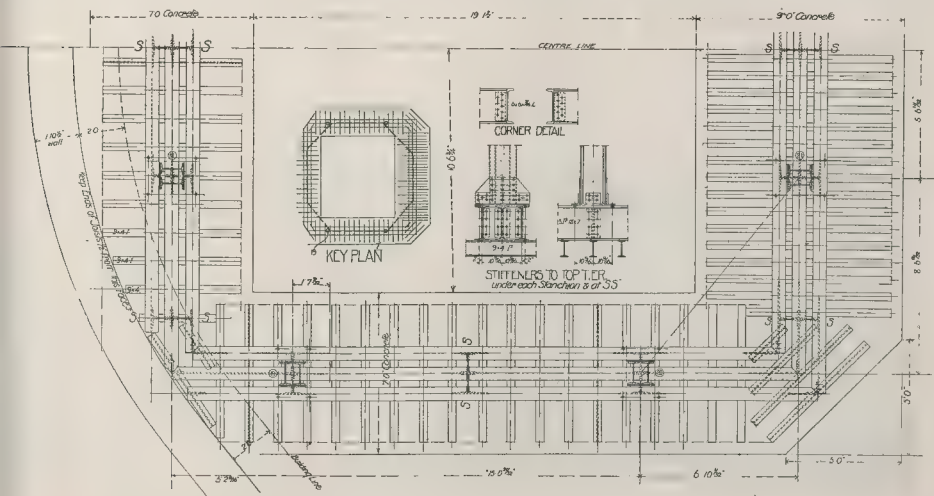


Fig. 4. Foundation Grillage of Tower.

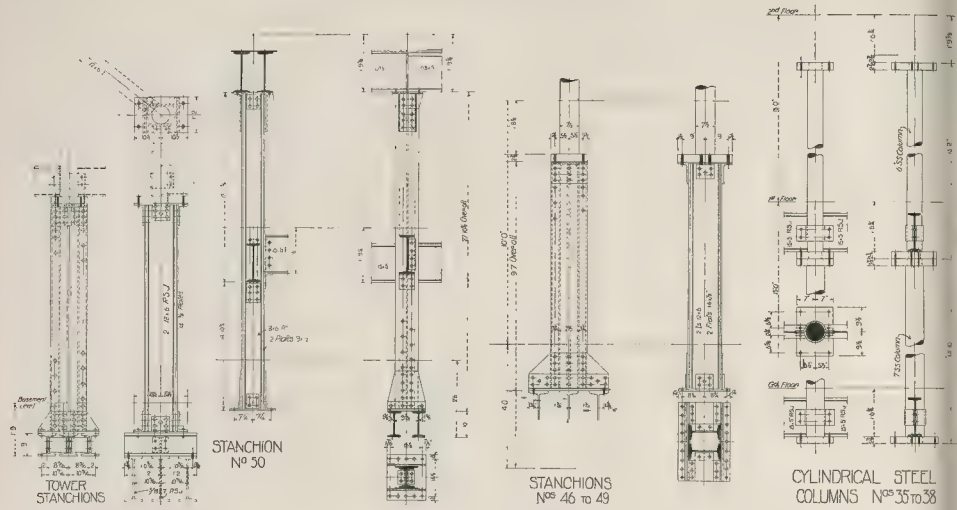


Fig. 5. Details of Stanchions.

that some members of similar type are fitted with caps for the connexion of solid round columns continued above second-floor level.

The third drawing in Fig. 5 illustrates the construction of stanchions Nos. 46 to 49, which are typical of members employed as supports for beams intermediate between brick walls. These stanchions are continued up from the foundations to a short distance below second-floor level, and each is terminated by a cap for the connexion of a solid steel cylindrical column.

The fourth drawing in Fig. 5 represents the solid steel columns forming the continuation of stanchions Nos. 35 to 38, and being typical also of the cylindrical columns connected to stanchions Nos. 46 to 49.

The whole of the working details for the steel construction were prepared for the architects by Messrs. Drew-Bear, Perks, & Co., Ltd., of Battersea Steelworks, S.W., and bear evidence of sound and careful design throughout. As the architects have made a point of providing for an ample protection of concrete around all steel members, the metal introduced into the new premises is thoroughly safeguarded against the risk of the excessive heat which acted so disastrously upon the steel girders of the former building at Clapham Junction during the recent fire.

Reinforced Concrete Construction.

All suspended floors and the flat roof comprise secondary beams and slabs of reinforced concrete designed in accordance with the Kahn system by the Trussed Concrete Steel

Company, Ltd., of Caxton House, Westminster. The architectural treatment of the ceilings formed by the under-side of the floors is illustrated in Fig. 6.

Fig. 3 shows the steel girders and beams forming the main frame of a typical floor, and the secondary beams of reinforced concrete carried by the steelwork and monolithic with the concrete casing of the latter. As a general rule the reinforced concrete beams are constructed as continuous beams throughout each section of the building, and as they are designed as T-beams where the floor slab acts the part of a compression flange the dimensions of these members have been kept within comparatively small limits. The span of the floor beams ranges from about 15 ft. to 20 ft. and their cross-sectional dimensions from 6 in. wide by 11 in. deep to 12 in. wide by 20 in. deep. The roof beams vary from 16 ft. to 26 ft. long between supports, but, owing to the smaller load to be carried, the largest beams measure only 9 in. wide by 18 in. deep in cross-section. The floor slabs are generally 5 in. thick reinforced throughout by bars of slight sectional area.

In Fig. 7 we give sections of typical beams showing details of the reinforcement and the manner in which the steel girders are incorporated with the reinforced concrete work.

For the main reinforcement Kahn trussed bars and Kahn rib bars are employed, the bent up wings of the former providing web reinforcement. For the continuity reinforcement of beams and the reinforcement

of floor slabs rib bars are used exclusively. Trussed bars inverted are applied as anchors in non-continuous beams.

The general adoption of reinforced concrete for the floors and particulars for the roof obviously provides a most valuable safeguard against injury to the building by fire from within or without.

Sprinkler Installation.

In previous references to the Clapham Junction fire we pointed out the great desirability of adopting the automatic sprinkler system in all drapery establishments, and we are pleased to find that this invaluable safeguard against the spread of fire has been applied by the new architects.

The installation is served by the mains of the Metropolitan Water Board with additional emergency supply from a circular water tank, with the capacity of 8,000 gallons, placed on the upper floor of the tower at the height of 15 ft. above the high-sprinkler point, in compliance with requirements of the insurance company.

The sprinkler supply main enters the building at the north-east corner, the valve being situated at the foot of the staff stairs near the offices at ground-floor level. T. supply pipes are divided into two systems, each with main supply valve, and every floor of the building is provided with complete network of pipes with sprinkler points, commanding every square foot of floor surface. The installation, which includes 1,595 sprinklers in all, is provided with two alarm gongs in the interior light wells, and these would be sounded even if one sprinkler point were fused. The entire system was planned and installed by Messrs. Mather & Platt, Ltd., of Salford Ironworks, Manchester, and Queen Anne's-chamber, S.W., and is one of the best examples of sprinkler installation in the metropolis.

Conclusion.

Before concluding, mention should be made of other installations in the new premises.

The heating system, fitted by Messrs. Rosser & Russell, Ltd., of Charing Cross, S.W., is on the low-pressure hot-water forced circulation system, served by two large cast-iron sectional boilers fixed in the basement. The mains throughout are as far as possible concealed in chases or carried in places where they cause no disfigurement. Heat is distributed by circular radiators around the columns and placed against the walls.

Electric lighting has been adopted for every part of the premises, together with emergency gas services and fittings, but systems of lighting having been installed



Fig. 6. Costume Showrooms.

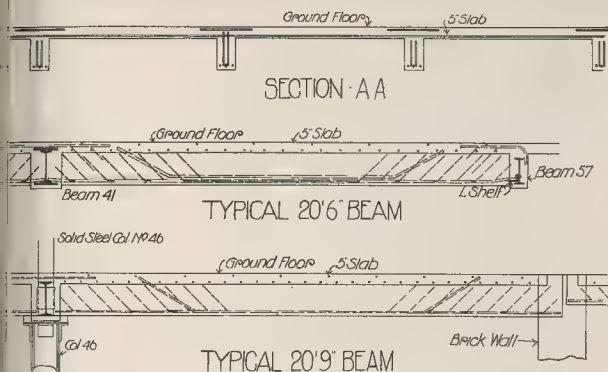


Fig. 7. Details of Reinforced Concrete Floors.

Messrs. Arding & Hobbs. The electric lighting scheme includes 110 arc lamps and metallic filament incandescent lamps thirty-two candle-power. The passenger goods lifts mentioned in the early part of article were provided and fitted by Mr. Smith, Major, & Stevens, Ltd., of London and Northampton, and the cooking stoves by Messrs. James Slater & Co., Wells street, W.C.

A striking feature of the interior is the careful design of the show-cases, counters, fixtures generally. This work was carried in solid carved mahogany, designed to harmonise with the decorative scheme, by Mr. E. Pollard & Co., of Clerkenwell. The general building contractor was Mr. James Carmichael, whose excellent business management was largely responsible for the successful execution of the works. After 9,500 cu. yds. of earth had been excavated for foundations, two large derrick towers were erected for handling the 5,500 tons of material used, in addition to 1½ millions of bricks. For facing the outer walls 15,000 cu. ft. of stone were required, the structural steel embodied in columns and beams amounts to 700 tons, and 1,300 tons of Portland cement have been used in fireproof construction. Figs. 8 and 9 show derrick towers and illustrate the rapidity with which the work was erected.

FOUNDATION LOADS. II.

TO ILLUSTRATE the great divergencies of opinion which may occur, even among civil engineers of wide experience, concerning the bearing power of soil, we will refer to a case of the Technical Board appointed by the Argentine Government in 1902 to

report upon the project for the construction of a port on the Parana River, one subject to which special attention was invited being the permissible pressure on the material to carry the foundations of the quay wall. The material in question consisted of Tertiary sand below the alluvial deposits in the bed of the river. It is stated by Dr. Corthell, M.Inst.C.E., who was Chairman of the Board, that professional opinions as to the pressure to be recommended ranged from 27 tons to 5 tons per square foot, while the contractor proposed the load of 7½ tons per square foot.

The Board finally decided upon the limit of 3½ tons per square foot, but Dr. Corthell was dissatisfied with this decision, and after individual communication with the members he found that the majority were of opinion that 5 tons per square foot would be safe. Consequently that was fixed as the maximum, and 3¼ tons per square foot as the mean pressure. The wide difference of opinion among experts thus disclosed caused Dr. Corthell to make further investigations, to which reference will be made later.

Clay is material formed by the decomposition and hydration of feldspathic rocks, particularly granite and gneiss, and of the crystalline rocks in general. It is almost invariably found with an admixture of sand and earthy salts with gravel in varying proportions. Apart from the differences of load-bearing power, which result from the presence of sand and gravel, other differences are due to the composition and consistency of the clay itself. Consequently, what are spoken of in general terms as clay soils exhibit great variations in respect of resistance to pressure.

Slate and shale stand at the top of the list, being capable of supporting any load that can be transmitted by masonry foundations, after them coming softer kinds of clay

merging by slow gradation down to the soft, moist and plastic material that squeezes out in every direction when under moderately heavy loads.

Another type of clay soil possessing great resistance is the firmly-compacted admixture of clay with gravel, and known technically as hard-pan. This is the most valuable of the beds which embody combinations of clay and sandy soils, occurring in mixtures of proportions which vary so greatly that it is frequently doubtful whether a given material should be described as "sandy clay" or "clayey-sand."

The treacherous nature of undrained clay, or clay to which water can gain access, is shown by many buildings and engineering structures.

In some cases subsidence occurs owing to the removal of water, or the lateral squeezing out of soft clay into neighbouring excavations; and in other cases lateral movement of the foundations takes place, a tendency which is common where the strata are not horizontal.

Engineers who have had experience with clay know that in London clay and almost every other variety there are greasy surfaces at various inclinations. If such a surface exists under the foundations of a heavy building there is every reason for anticipating unpleasant results due to slipping, however strongly the work may have been designed and executed.

Speaking on the subject a few years ago, Sir Douglas Fox expressed the opinion that "some portions, at any rate, of the London clay, and also of that in the neighbourhood of Rugby and elsewhere, would not carry more than 2 tons to the square foot." That, of course, is far below the average safe load for London clay, and probably below that for the most unfavourable examples. But the fact that the engineer mentioned has found it necessary in heavy works upon clay not to allow more than that small foundation load is significant of the careful discrimination necessary in selecting and applying data as to the bearing power of soils.

Sandy soils consist mainly of particles varying in size, coarse gravel being at one end of the list and fine sand at the other. No better support for foundations need be desired than a thick bed of gravel, while fine sand is almost equally desirable if the material is well compacted and protected from being washed away by the flow of underground water. But it must always be remembered that fine sand saturated with water behaves almost like a liquid, and that sandy soils of porous character are readily affected by running water.

In some places sand is so waterlogged as to bring it into the category of semi-liquid soils, which are never desirable, but must often be utilised for supporting foundations. Such soils, whether composed of sand, silt, or mud, require special treatment and the exercise of sound judgment. If the layer is too deep to justify removal, foundations can be carried through the semi-liquid material to a firm

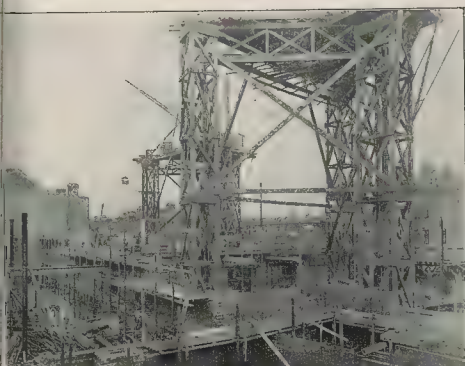


Fig. 8. June 25, 1910.

Messrs. Arding & Hobbs's Building in Course of Construction.

Messrs. J. S. Gibson, Skipwith, & Gordon, Architects.



Fig. 9. July 9, 1910.

stratum beneath, piles may be driven to consolidate the soil, or the pressure may be distributed over a large area by means of a raft foundation.

The safe bearing power of alluvial soils varies considerably with attendant circumstances and local conditions. Those who find it unavoidable to build upon material of the kind should always obtain exact data as to the strata beneath the site, and tests should also be made on selected areas of ample size in order to gain practical demonstration of the loads that may safely be imposed on the surface.

At the present time the most systematic tabulation of safe-bearing capacities for ordinary soils is that printed as an appendix to the paper by Dr. Cortrell, under the title of "Allowable Pressures on Deep Foundations."

Analysis of the data there presented shows that the pressure of stable structures upon various materials in which no settlement was observed ranges between the following limits:—

Fine sand.—2 tons to 518 tons per square foot, with the average of 402 tons per square foot in ten examples.

Coarse sand and gravel.—214 tons to 692 tons per square foot, with the average of 455 tons per square foot in thirty-three examples.

Sand and clay.—223 tons to 758 tons per square foot, with the average of 438 tons per square foot in ten examples.

Hard clay.—178 tons to 712 tons per square foot in sixteen examples.

Hard pan.—268 tons to 107 tons per square foot, with the average of 777 tons per square foot in five examples.

Alluvium and silt.—134 tons to 554 tons per square foot, with the average of 259 tons per square foot in seven examples.

In addition to the foregoing results, Dr. Cortrell found three instances where marked settlement occurred in fine sand, with the minimum load of 161 tons, the maximum load of 625 tons, and an average load of 465 tons per square foot.

For three cases of failure on a mixture of sand and clay the pressures ranged from 143 tons to 66 tons per square foot, with the average of 295 tons. This is very different for the average previously given for ten examples, and serves to emphasise the danger of relying upon general data in the computation of safe foundation loads. Five cases of settlement in London and other clay embody pressures from about 4 tons to 5 tons, with the average of 465 tons per square foot. In alluvial soils two examples of settlement are reported, the loads being 143 tons and 678 tons per square foot—a very marked difference.

The data here quoted are fairly in accordance with generally-accepted value, but, like similar statistics, they are only available for approximate computations. Precise information concerning the safe bearing power of any given site can only be obtained by tests and observations on the spot, and in the interpolation of results so obtained there is ample scope for the exercise of experience and discriminating judgment.

together with thirty miles of standard gauge and twelve miles of narrow gauge railway lines, and a railway terminus in the middle of the camp. The postal authorities are arranging for the equipment of thirty-one branch post-offices, ten telegraph offices, and telephones between all departments of the area. The temporary population will probably be not far short of 250,000 persons, and it is evident that the task of laying out and equipping the vast encampment necessary is one of unprecedented magnitude.

Austrian Ministerial Regulations for Plain and Reinforced Concrete Construction.

THE new regulations issued by the Austrian Ministry of Public Works relate to concrete structures, whether reinforced or not. They are divided into two parts; the first part applies to buildings generally and first defines the nature of the works coming within the scope of the regulations, as well as the conditions governing the design of such structures, the weight of various building materials, the live loads permissible, the weight of snow on roofs, the force of wind pressure, and stresses due to temperature variations. Then the regulations indicate the methods to be adopted in performing static calculations, and state the permissible working stresses for the materials employed. The succeeding chapter discusses the composition and testing of cements, sand, aggregate, iron, steel, and concrete, and lays down rules for the construction of concrete and reinforced concrete buildings and the tests to be applied after completion. The second part of the regulations contains similar information and instructions for the guidance of those designing and constructing highway and railway bridges. It will be seen that the regulations are far more complete than anything of the kind suggested in this country.

A New Torsion Testing Machine.

AS HITHERTO designed, testing machines only make provision of stress-strain diagrams being taken from the test specimens when tested under direct stress of a particular kind, while stress-strain diagrams under reversed or alternating stresses cannot be obtained from them. A new machine recently invented by Professor W. E. Lilley, D.Sc., makes provision for overcoming these defects, enables tests to be conducted under direct or alternating stresses, and differs essentially from existing torsional testing machines in the respect that stress-strain diagrams can be obtained from it. It is probably the first testing machine of its kind which enables this to be done.

As represented in the accompanying drawing, the machine consists of a circular plate A, fixed to a bench, and through which is fixed a hollow steel cylinder B for holding the test specimen C, one end secured by the key D, the other end passing through a ball bearing E, and secured by the key F to the lever G H I. Attached to I by J is a light arm K carrying the recording pencil L, which moves on the circular table M, capable of being rotated on the plate A. On H is a recording pointer O for measuring small torsional

strains when determining the modulus of rigidity or shear.

At present the machine is more or less in its initial stage, and may be capable of improvement in points of detail. We understand, however, that it has been used for practical purposes by Professor Lilley, who finds that the results obtained differ very little from those given by the specially-built type of torsion testing machine, while for determination of the modulus of rigidity his machine gives more consistent results than the large appliance, and is far simpler to use.

Waterloo Station.

FOR more than seven years the work of extending and remodelling the Waterloo terminus of the London and South-Western Railway has been in progress, and it is probable that operations will continue for two or three years more. The new station has been in use for a considerable period and now that the company have obtained Parliamentary sanction for removal of the obsolete single line connecting with the South-Eastern Railway Station of Waterloo Junction the roof of the centre station is being continued in compliance with the arrangement adopted for the south station. This work has involved the temporary closing of two main line platforms and the modification of running arrangements. Every effort is being made to push forward the work as rapidly as possible, and after its completion the north station will be taken in hand. An interesting announcement has recently been made to the effect that a new road which has been under construction for several years will shortly be opened to the public. Commencing near the railway bridge over the Westminster Bridge-road, the thoroughfare in question passes under the railway lines and encircles the entire area of Waterloo Station and is connected to branch roads with Lower Marsh and the south-east side.

New Water Supply Works.

A SCHEME inaugurated a few days ago for increasing the water supply of Birkenhead includes two masonry dams to be built at Pont-y-Alwen, in Denbighshire, at a cost of about 1,250,000. Only one dam has been commenced, the reservoir formed having sufficient capacity to increase the supply by some 11,000,000 gallons daily.

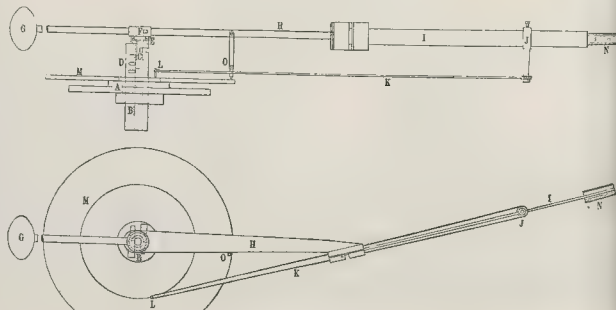
The last portion of the new works for improving the water supply of Devonport was completed this month by the opening of a new storage reservoir at Crownhill, with the capacity of 21,300,000 gallons. The complete scheme included a storage reservoir at Douland, a 5½ pipe line thence to Roborough, in addition to the new reservoir mentioned, which has been three years in construction.

At Shanklin an auxiliary water supply has recently been put into service. The source is well 45 ft. deep with two horizontal adits, one 45 ft. and the other 90 ft. long. Water is pumped to a reservoir of 150,000 gallon capacity by machinery in a new pumping station, the whole of the mechanical plant being in duplicate to avoid the risk of interrupted services.

ENGINEERING NOTES.

The Delhi Durbar Camp.

THE temporary extension of the Delhi Durbar Camp, for the forthcoming Coronation Durbar will provide for a population considerably greater than the capacity of the city, as well as for spectators of the Durbar and various tournaments to be held. Accommodation will be established for guests of the Indian Government, for native potentates, and for other visitors. Some of the camps are to be equipped with buildings and others with tents. Camp hospitals and dispensaries will be included, and also a dairy under the control of the Director of Military Farms. The water supply installation will comprise two services, one of filtered water for drinking purposes, and the other of water from the canal system. Electric light is to be installed throughout the temporary city, current being supplied from a central generating station to be established on the site. Many miles of new roads are to be constructed,



New Torsion Testing Machine.

THE BUILDING TRADE.

THE INDUSTRIAL COUNCIL.

THE Government scheme "for settling and for shortening industrial disputes," as set forth in the text, printed in our last issue, of the official document issued from the Board of Trade is likely to be welcomed as a recognition of the national need of some happier method of dealing with industrial disputes than at the present time, and whatever may be the chances of success of the new bill the scheme may be regarded as an attempt to deal with a difficult and important question. It must be inferred, from statements issued, that the Board of Trade is fully aware of the difficult nature of the problem, and that they do not cherish the hope that the scheme will result in the absence of strikes and lock-outs altogether, but a successful scheme for strengthening and improving the existing official machinery for settling disputes will certainly be a great gain to the general public who are "adversely affected," but to the industries directly concerned. But while we are prepared to welcome the Council, composed of employers' and workmen's representatives, meeting to consider the purpose of considering, and settling into matters referred to them in trade disputes, they are likely to arrive at a speedy and peaceful solution of a dispute, it is not to be inferred that they possess larger powers than those of any conciliation board, for it is expressly stated that the Council will have no compulsory powers. The difficulty foreshadowed by the scheme is not that the employers' and workmen's representatives will fail to agree, but that they will fail to agree to themselves the right to regulate the industry. As we understand the situation, there is a growing dislike by the wage-earners to the existing methods of settling disputes, and it is this dislike and the tendency to go over the heads of the leaders that has given some of the disputes their alarming and dangerous character. It seems to be supposed that labour has more to lose than gain from arbitration, and that the machinery of arbitration is set up for the purpose of stemming the increasing power of the wage-earners. If this belief is at all general, the Industrial Council, however representative it may be, will stand in much the same position as conciliation boards which have no compulsory power. Any attempt to invest the Council with such power would be doomed to failure, for we doubt if the trade unions have anything to do with any compulsory powers.

Any body possessing compulsory powers being the question, it does not follow that the Council will be unable to do much valuable work, but we must wait for fuller particulars of the working of the scheme, of the "situation" that is to be taken, and of any advantages which will make the Council an improvement on existing machinery. One of the advantages of the scheme as it strikes us is that all disputes affecting one trade will not be considered by those interested in that trade, but by the representatives of all the trades—some of them directly affected, it may be, and all indirectly; and it may well be that the united decision of a body of able men representing the principal industries of the country, invested with a sort of public authority, will have a powerful influence upon the trades generally; a sort of moral force will work which cannot fail to be for good. However, if the Council act with promptitude, a dispute is considered without delay, may be done to narrow the dimensions of a strike or prevent it taking place at all. The experiment, which will be watched with considerable interest by the building and allied trades—in fact, by the whole community—will be of great assistance to Sir George Thompson, K.C.B., the Comptroller-General of the Board of Trade, who has worked with such conspicuous success as an arbitrator and intermediary in industrial disputes, in giving him the immediate advantage of the advice and opinions of representative masters and men who have

the respect and confidence of those they represent, and whose opinions, for that reason, should greatly assist in the settlement of disputes. Moreover, the meeting of these selected men on both sides should result in a better understanding, not only on any particular issue, but on points of view generally—an outcome which would be of great value in the adjustment of the relations of capital and labour. Anything that can be done to remove the causes of industrial disputes and do away with strikes altogether will be of the greatest public advantage, and, believing in the value of conference and conciliation in the removal of industrial misunderstanding and the adjustment of differences, we heartily welcome the new Council and wish it every success.

THE EMPLOYERS' PARLIAMENTARY COUNCIL: THE TRADE DISPUTES ACT, 1906.

THE Employers' Parliamentary Council is calling for such an amendment of the law relating to picketing and labour combination "as will bring it into conformity with the wishes of the whole body of employers and traders, and with the opinion of the great majority of the working classes and the general public of the United Kingdom." The Council state that "When the Trade Disputes Bill was before Parliament five years ago, the Employers' Parliamentary Council protested that the measure was one to legalise intimidation, since it permitted persons on strike or persons acting on their behalf to terrorise workmen who were willing to work, and who would not obey the dictates of the labour unions. 'Peaceful persuasion,' it was urged, was a misnomer, the real object and the real act of the 'persuader' being intimidation pure and simple. Deputations representing the Employers' Associations throughout the country waited upon the Minister in charge of the Bill and sought to influence the Government in the direction of modifying the proposed legislation in such a way as would conserve the elementary rights of employers and willing workmen, and amendments with this object in view were moved. The Government, however, ignored all protests and arguments; the clamorous demands of the labour party were acceded to, and the Bill became law. . . . The objects of the Trade Disputes Act, 1906, were (1) to nullify the decision in the case of *Lyons v. Wilkins*; (2) to make a privileged class of labour unions by making them immune as regards responsibility for their actions in trade disputes. . . . Prior to the action of *Lyons v. Wilkins* it was generally assumed that, although violence and intimidation were illegal, the statute allowed workmen who had a difference with their employers to attend at or near the employer's premises with the object of inducing other men, by argument and persuasion, either to leave or to refuse to accept employment with the master whose premises were picketed. The case decided that the words of the Act, 'to obtain or communicate information,' were to be understood literally, and did not cover the totally different procedure of argument and persuasion. . . . The labour unions, forced to the conclusion that there were no means whereby the law relating to picketing and conspiracy could be evaded, resolved, in the words of the President of the Labour Union Congress, 1902, to 'face the facts in a bold and honest manner, and go right out for an alteration of the law.' The agitation culminated in the passing of the Trade Disputes Act, 1906."

The Employers' Parliamentary Council urge that, in the interest of private liberty and public order, picketing should either be rigorously suppressed or the number of pickets should be limited to two; and pickets should be required to carry on their argument in such a place and in such a way as not to be a nuisance to a former employer or his workmen, or the public. As the law stands, they contend, a mob of unlimited numbers may "attend at or near a house or place where a

person resides or works or carries on business or happens to be," and indulge in "peaceful persuasion" until the person is reduced by fear or by violence to subjection. At present the person picketed has practically no remedy whatsoever.

STRIKES AND LOCK-OUTS.

THE twenty-third annual report on strikes and lock-outs has recently been issued, covering the year 1910. The number of workpeople involved in disputes (515,165) was the highest since 1893, whilst the aggregate duration in working days of all the disputes in progress during the year (9,894,331 working days) has only been exceeded on four occasions in the previous eighteen years. The current year seems, however, likely to exceed its predecessor in this respect, for, as we recently pointed out, the loss of working days in the eight months already totals 7,821,800. In his Preface to the Report Sir G. Askwith refers with satisfaction to the increased resort to methods of conciliation and arbitration, the number of workpeople involved in disputes settled by these methods being the highest recorded in the decennial period for which statistics have been prepared, but we fear that the spread of these rational methods of settling disputes will be found to have sustained a severe check when the history of 1911 comes to be written.

In the Report it is stated "The building trades, which for the four previous years had been remarkably free from disputes causing a stoppage of work, experienced even less trouble in 1910, and the number of workpeople involved in such disputes was the lowest on record"—an observation abundantly justified by the figures given in the Report, as but 628 workpeople in this trade were directly involved in disputes.

The building trade, despite its depressed condition, continues to show a good example to other trades, both in the avoidance of disputes and in the adoption of rational means in settling them when they arise.

In this Report it is noticed in connexion with trades generally that the question of wages, the most usual cause of dispute, only accounted for 20 per cent. of the workpeople involved in disputes, whilst 50 per cent. were involved in disputes as to the employment of particular classes of persons. This appears to us a peculiarly unsatisfactory cause of dispute, especially in a time when trade is increasing, and we note with some satisfaction that in the building trade only forty-three persons were involved in disputes arising from this cause.

MANCHESTER BUILDING TRADE.

THE firms and men interested in the building trade of Manchester and Salford are, says the *Manchester Guardian*, still in doubt about the immediate future of the industry. Four weeks ago the builders' labourers in the district asked that the minimum wage should be raised to sixpence an hour, and that several alterations, one of them the inclusion of the time spent in walking from the employers' shop to the job on hand in the day's working hours, should be made in the conditions of their labour. A definite reply to the demand was not given by October 2, the date fixed, but so far the men have not carried out their threat to declare a general strike of all engaged in the building trade in Manchester and Salford.

A new issue is introduced into the dispute by the decision of the members of the Building Trades Federation to take steps to abolish non-union labour, and it now remains to be seen how the committee of the Federation will attempt to give effect to that resolution. It is recognised that the present is not a good time for a general strike, as, in addition to the slackness which generally prevails in the building trade in the winter months, the industry has not recovered from the depression which has afflicted it for several years. Small disputes have occurred from time to time in various parts of the city, and trouble has arisen through painters working in Manchester Corporation libraries refusing to continue at

work while non-union men are also employed, but these disturbances have been regarded as of the first importance. A general strike would be difficult to organise and maintain, for there are many men still outside the different trade unions, and the complaint that a minimum rate of sixpence an hour is not paid is almost entirely directed against a few firms not allied to the Employers' Association. The plasterers, who are as well organised as any section of the workmen, are, as a whole, satisfied with concessions recently obtained, and a strike on their part would break an agreement which provides for the giving of a six months' notice of a demand for a further advance.

The builders allied to the Employers' Association are willing, they say, to meet reasonable demands, but they have no influence over outside firms, so that if a big strike occurs it will lead to numerous negotiations with individual firms and will upset the good relations most of the large firms have established with their employees. It remains to be seen what developments will follow the refusal of painters engaged in the redecoration of three Manchester branch public libraries. Some of the trade union officials believe this strike is the beginning of an extensive movement which will involve carpenters, joiners, painters, bricklayers, and their labourers, plumbers, plasterers, and French polishers.

HULL MASTER BUILDERS' ASSOCIATION.

The monthly general meeting of the Hull Master Builders' Association was held at the Builders' Exchange, Posterngate, recently, the President, Mr. R. Finch, in the chair.

Amongst the trade matters discussed was the increase in the employment of out of town contractors and labour by Hull firms who are known to have an extensive business connexion in the city and district. It is a well-known fact that during the past two years there has been a depression in the building trade, which has been keenly felt by both employers and workmen, yet outside contractors (usually from underpaid districts) are allowed to come in with their own workmen and at the lowest estimate take away 75 per cent. of the payment, while local employers are at a standstill and their workmen out of employment. This deplorable state of affairs is by no means due to the lack of facilities afforded by local trades men, as the building trade of Hull possesses some of the most skilful of workmen and old-established firms of contractors who are thoroughly capable of entering into competition with outside firms with regard to price, design, and workmanship.

Mr. E. Quibell gave a report of the meeting of the Yorkshire Federation of Building Trade Employers, held at Bridlington on September 15, when the National Insurance Bill, Trade Disputes Bill, and the Trade Unions Bill were discussed.

The objections and suggested amendments to the Insurance Bill received from the various branches of the Federation have been forwarded to the Chancellor of the Exchequer and the President of the Board of Trade, together with an emphatic protest against the further heavy burden proposed to be placed upon the building industry, which is already seriously affected by other legislation during a period of abnormal depression.

With regard to the Trade Disputes Bill, the Federation carefully considered the ignoring of directly appointed trade officials during the recent trade disputes, also the ignoring of conciliation arrangements. Resolutions were passed on the and the Trade Unions Bill.—*Eastern Morning News.*

GENERAL BUILDING NEWS.

ABINGTON-AVENUE CONGREGATIONAL CHURCH, NORTHAMPTON.

This church has a frontage to Abington-avenue and Purser-road. The style adopted is decorated Gothic. The church comprises nave with one centre and two side aisles, choir, organ chamber, ministers' vestry, choir vestry, and gallery at the Purser-road end. The total accommodation, 550, is provided as follows, viz.:—Nave, 440; gallery, 72; choir, 38. The nave arcade has five moulded arches on either side, supported on octagonal piers, and the whole is executed in rubbed Bath stone. At the junction of Abington-avenue and Purser-road is a tower, having eight recessed belfry windows with oak louvres: the tower is further utilised for the stairs to the gallery. On both sides of the clearstory are five three-light tracery windows. In the end wall of the choir is a four-light tracery window, and a five-light window faces Purser-road. The walls externally are faced

with local Duston stone, the windows, mouldings, plinths, coping, etc., are of Bath stone. The roofs are covered with red sand-faced tiles. The total cost of the building, boundary walls, paths, etc., will be about 4,500. The contractors are Messrs. E. D. Sharman & Son, Northampton. The architects, Messrs. Ernest R. Sutton, F.R.I.B.A., and F. W. C. Gregory, of Nottingham.

NEW SCHOOLS, ROMFORD AND WALTHAMSTOW.

The Essex Education Committee have just reported that they had considered the report of a local committee in favour of making provision for a boys' secondary school at Romford, and have resolved that the matter be referred to a special committee to confer and report. The Committee also reported that the plan, prepared by Mr. C. J. Dawson, of Ilford, for a new County High School for Girls at Walthamstow for 300 girls, including a caretaker's house, had now been approved by the Board of Education, and tenders will be invited. The estimated cost of carrying out these plans, including latrines, drainage, furniture, fencing, architect's and quantity surveyor's charges, and all other expenses, is 15,195.

UNIVERSITY COLLEGE, EXETER.

Additional buildings of the Royal Albert Memorial University College will be opened by the Lord Lieutenant of Devon, Lord Fortescue, on October 20. The first building, the result of an enlargement scheme which was approved by the Governors in 1904. The present addition has been erected on a site purchased at the rear of the main building of the Royal Albert Memorial at a cost of 8,675, for land and about 16,400, for the building. This occupies only about half of the site acquired. It is intended, when the funds of the College permit, to use the remainder of the land for the erection of a College Hall and a building for the Technical Department. The new buildings are built of brick and Portland stone, and the designs of Messrs. Tait & Harvey. They consist of two blocks—one for the University College and the other for the Day Training College—and they provide the following accommodation:—University College.—Ground floor—General and advanced laboratories, etc.; lecture and staff rooms for the Department of Chemistry, Principal's room, women students' common-room. First floor—Lecture and staff rooms. Second floor—Biological laboratory, lecture and staff rooms. Day Training College.—Ground floor—College library, rooms of Professor and Mistress of Education, common-rooms for men and women students. First and second floors—Lecture and staff rooms.

NEW HOME FOR NURSES, DEARNLEY.

This new home at the Workhouse Infirmary is being erected from the designs of Mr. Herbert Clough, architect, of Rochdale, at a cost of about 5,500. The contract is being carried out by Mr. Robert Kay, builder, of Rochdale, and the building, when finished, will provide accommodation for forty-one persons.

NEW PICTURE PALACE, DOVER.

This building, which is to be known as the "Boyle" has been erected at a cost of 7,500, from the designs of Mr. A. H. Steele, architect, and has accommodation for about 900 people.

NEW DRILL HALL, LOWESTOFT.

The designs for this hall were prepared by Mr. F. W. Richards, architect, of Lowestoft, and the total cost of the building was about 5,000. The contract was carried out by Messrs. Hawes & Sons, of Norwich.

NEW COUNTY BUILDINGS FOR DUMFRIES.

At a meeting of the Dumfriesshire County Council, plans by Mr. J. M. Dick-Feddie, Edinburgh, were submitted of the proposed new County Buildings to be erected in English street, Dumfries, on the site of the present militia barracks, at a cost of 21,000. The plans were approved of.

TRADE NEWS.

Under the direction of Mr. W. H. Bell, architect and surveyor, Newbury, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air mules, has been applied to St. Bartholomew's Grammar School, Newbury. The Bluntisham Church of England School, Hants, has recently been fitted with one of grates, supplied by Messrs. O'Brien, Thomas & Co., Upper Thames-street, London, and Excelsior Works, South Bermondsey.

The Royal Berks Hospital, Reading, is being supplied with Shorland's double-fronted chester grates by Messrs. E. H. Shorland & Brother, Ltd., of Farnworth, Manchester. Messrs. G. A. Williams & Son, blind specialists, have removed from 21, Queen's-road, Baywater, to their more spacious freehold premises, No. 42, nearly opposite.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council the following applications under London Building Acts were dealt with (names of the applicants are given in parentheses).

Lines of Frontage and Width of Way.
Bethnal Green, North-East.—Erection of building on the northern side of Chisenham-road, Bethnal Green, opposite the northern of Kenilworth-road (Messrs. Andrews Peasgood for Messrs. C. Clarke & Co., Ltd. Consent).

Chelsea.—Erection of a projecting clock tower, the King's Picture Playhouse, King's-road, Chelsea (Greenwich Time, Ltd., for Electric Palaces, Ltd.).—Consent.

Chelsea.—Erection of enclosures to a plot in front of No. 133, Church-street, Chelsea (Messrs. Elms & Jupp).—Consent.

Clapham.—Addition to the vestry at Luke's Church, Thurlough-road, Clapham (J. T. Riley for Mr. R. W. Nickson himself).—Consent.

Clapham.—External iron balcony in front of Nos. 51, 53, and 55, Clapham Park-road, Clapham (Mr. A. Sykes for Mr. W. Penny Consent).

Dulwich.—One-story shops on the western side of Crystal Palace-parade, Sydenham, southward of Parkside-road (Mr. L. Livesey for the London, Chatham, and Dover Railway Company).—Consent.

Dulwich.—Addition at the rear of No. 10, Lordship-lane, Dulwich, next to Hebert's (Mr. F. A. Payne).—Consent.

Fulham.—Iron and glass addition over porch at No. 12, Ongar-road, Fulham, abutting upon the southern side of Sedlescombe (Messrs. J. West & Sons).—Consent.

Fulham.—Three one-story shops on the north-western side of Fulham-road, Fulham, northward of No. 626, Fulham-road (Mr. Coddington for Mr. Potts).—Consent.

Fulham.—Iron and glass hood over entrance to No. 22, West Kensington-mansion, North End-road, Fulham (Messrs. Giles Stevenson).—Consent.

Fulham.—Bay windows and porches to proposed houses on the northern side of Crabtree-lane, Fulham (Mr. F. L. Poole for Messrs. Allen & Norris).—Consent.

Hackney, Central.—Building upon the site of No. 18, Darnley-road, Hackney (Messrs. R. Landis & Co.).—Refused.

Hackney, North.—Conservatory at No. 10, Amhurst-park, Stoke Newington, abutting upon Bethune-road (Mr. T. H. Dey).—Consent.

Hampstead.—Erection of a building upon site of No. 18, Avenue-road, Hampstead (Mr. M. H. Bailie Scott for Sir Beverton Redwood Baronet).—Consent.

Holborn.—Iron and glass shelter over entrance to the Chancery-lane tube railway station, High Holborn (Mr. E. P. Grove for the Central London Railway Company).—Refused.

Holborn.—Iron and glass shelter in front of the British Museum tube railway station, High Holborn (Mr. E. P. Grove for the Central London Railway Company).—Refused.

Islington.—Erection of one-story shops land in front of the Highbury Station of North London Railway, Holloway-road, Upper-street, Islington (Mr. E. Mackie Consent).

Islington, East.—Erection of a porch in front of St. Paul's Vestry Hall on the southern side of St. Paul's-road, Islington (Mr. H. Kennington for the Rev. W. A. Smith, M.A.).—Consent.

Islington, North.—Erection of a projecting clock in front of No. 17, Highgate-hill, Islington (Greenwich Time, Ltd., for Electric Palaces, Ltd.).—Consent.

Kennington.—Erection of a building on north-western side of Glyn-street, Vauxhall (Mr. G. Thrall for Messrs. H. B. Barnes & Son).—Consent.

Kennington, South.—Erection of a house on the southern side of No. 21, Addison-road, Kennington (Messrs. Gale, Dulacher, Emmett for Mr. D. Grant).—Consent.

Lewisham.—Projecting porches in front of Nos. 224, 226, 228, 230, and 232, Verdun-lane, Lewisham (Messrs. Norfolk & Prior for Mr. J. Hughes).—Consent.

Lewisham.—Four houses with bay window oriel windows, porches, and hoods on the north-eastern side of Manwood-road, Lewisham (Mr. J. Nicholls).—Consent.

Marylebone, East.—Retention of a porch front of No. 27, Avenue-road, Hampstead (Mr. A. F. Faulkner for Mr. W. Willett).—Consent.

Marylebone, East.—Projecting balcony front of Nos. 167 and 169, Great Portland-street, St. Marylebone (Mr. R. Angell).—Consent.

Marylebone, East.—Erection of buildings on the northern side of Devonshire-street,

lebone (Mr. A. F. Faulkner for Mr. W. W. Cook).—Consent.

Ham Picture Playhouse, High-street, Peckham (Greenwich Time, Ltd., for Electric Co., Ltd.).—Consent.

Plur.—Erection of a wooden porch in front of the Presbytery, Canton-street, Poplar (Mr. J. J. Taylor for the Rev. T. Doyle).—Consent.

Paneras, North.—Erection of a building with a bay window on the south-western side of the road, St. Paneras, next to the northern side of Leighton-grove (Mr. G. W. Cook).—Consent.

and.—Projecting metal and glass illuminated sign in front of No. 83, Haymarket (Messrs. E. Pollard & Co.).—Consent.

and.—Two illuminated signs on the front of the London Hippodrome at the corner of Charing Cross-road and Cranbourne-street, Westminster (Mr. H. A. Hawkins for Empires, Ltd.).—Consent.

and.—Shop front at Nos. 13 and 13A, Spur-street (Messrs. Smee & Houchin).—Consent.

and.—Projecting sign at No. 23, Northumberland-avenue, Westminster (Nevill's Turkish Baths, Ltd.).—Consent.

and.—Projecting clock in front of No. 46, Er-street, Westminster (Greenwich Time, for Rushmore Lamps, Ltd.).—Consent.

and.—Projecting window and doorway in front of No. 76, Jersey-street, Westminster (E. E. Fitch for the London and Provincial Turkish Bath Company, Ltd.).—Consent.

and.—Erection of a cycle shed at 22, Richmond-road, Balham, to abut upon the western side of Cloudestale-road (Mr. H. J. Ham).—Consent.

and.—Porches at Nos. 52, 54, 55, 56, Longley-road, Tooting (Mr. A. J. J. J.).—Consent.

and.—One-story office and garage on the eastern side of Streatham-hill, Isworth (Mr. J. J. Taylor for Mr. R. H. R.).—Consent.

and.—Bay window at No. 200, Upper-road, Upper Tooting, next Nottingham-street, W. F. Penfold, jun.).—Refused.

and.—Alteration to the entrance to 59, Victoria-street, Westminster (Mr. T. Murray for the National Penny Bank).—Consent.

and.—Erection of a projecting brick porch in front of Nos. 49 and 51, Hall Bridge-road, Westminster (Messrs. Grove & Papworth).—Consent.

and.—Illuminated sign at the Metropolitan District Railway Company's St. Paul's Park Station, York-street, Westminster (Mr. A. Cooper).—Consent.

and.—Iron and glass porches in front of Nos. 2 and 4, Dunvegan-gardens, Dunvegan-Eltham (Messrs. H. C. H. Minns & Canal).—Consent.

and.—Bay windows and projecting porches to thirteen detached houses on the eastern side of North-park, Eltham (Messrs. Ler & Worge).—Consent.

and.—Erection of a building on the eastern side of the footway leading out of the side of Fitzjohn's-avenue (Mr. S. C. Widge for Mr. J. Russell).—Consent.

and.—Buildings on the northern side of head-street, Bethnal Green, westward of No. 20, with bay windows and forecourt (Messrs. G. Billings, Wright, for Messrs. J. Webster, Sons, & Co.).—Consent.

and.—Building at the Grove-depot of the St. Marylebone Metropolitan Council on the northern side of Richmond-street, St. Marylebone (Mr. T. W. Alder for the St. Marylebone Metropolitan Council).—Consent.

and.—Erection of buildings to abut Durward-street, Fulbourne-street, Cross-street, and Queen Anne-street, Whitechapel (Messrs. W. E. & Sons for Messrs. Kearley & W. E.).—Consent.

and.—Buildings upon the site of Nos. 22 (even numbers only) inclusive, Denmark-trixton (Mr. H. C. Constantine).—Consent.

and.—Conservatory at the rear of No. 1, Clapham-common, north side, to abut upon the lane (Messrs. H. & E. Norton).—Consent.

and.—Two external balconies at the rear of Nos. 23 and 25, Bevelton-street, Hoxton, next Wood's mews (Messrs. Lovegrove & Papworth).—Consent.

and.—Addition at No. 1, Phillimore-gardens, Kensington, next to the walk (Mr. F. S. Chesterton).—Consent.

and.—Iron balconies and ledgers and a bay window on the Warwick House-frontage of Nos. 13 and 13A, Cockspur-street and No. 16, Warwick House-street (Messrs. Smee & Houchin for Messrs. T. Cook & Son).—Consent.

and.—One-story building on the northern side of Page-street, Westminster, at the rear of No. 10, Grosvenor-road (Mr. F. Billerey).—Consent.

and.—Addition to the Institution of Mechanical Engineers, Birdcage-walk, Westminster, to abut upon Great George-street, Princes-street, and Old Queen-street (Sir Alexander Stenning & Partners for the Institution of Mechanical Engineers).—Consent.

and.—Retention of a temporary sign-board on the forecourt in front of Nos. 2 and 4, Ferndale-road, Clapham (Messrs. F. W. & E. Bloor).—Consent.

and.—Temporary wood and glass building in front of No. 44, Stamford-road, Hackney (Messrs. Hockley & Richards).—Consent.

and.—Wood and glass showcase on the forecourt of No. 54, Mare-street, Hackney (Mr. W. E. Hinton).—Consent.

and.—Temporary wood and iron building at the "Corner House," No. 44, Elsworth-road, Hampstead (Mr. S. C. Lathbridge).—Consent.

and.—Iron and glass shelter at the Pellam-street entrance to the South Kensington tube railway station (Mr. W. E. Mandel for the London Electric Railway Company).—Consent.

and.—Temporary wood and iron motor shed at the rear of No. 332, Brownhill-road, Catford, next to Broadfield-road (Mr. J. Brandon).—Consent.

and.—Temporary greenhouse upon a site eastward of Glengall House, on the southern side of Codrington-hill, Lewisham (Mr. J. Crighton).—Consent.

and.—Temporary wooden building in front of No. 45, Peckham Rye, Peckham (Mr. S. Earl).—Consent.

and.—Iron and glass shelter in front of the Chesterfield-street entrance to No. 11, Euston-road, St. Paneras (Mr. H. T. Cook for Messrs. Stewart & Wight, Ltd.).—Consent.

and.—Leant-to roof over a passage at the Poplar Metropolitan Borough Council's disinfecting station on the southern side of Yeob-street, Bromley (Mr. H. Heckford for the Poplar Metropolitan Borough Council).—Consent.

and.—Temporary wooden addition to "Oakhurst" within the prescribed distance from the centre of Ravenscourt-lane, Ravenscourt-park, Hammersmith (Mr. A. Strahan).—Consent.

and.—Temporary iron building at Union Dock Wharf, on the western side of Bridge-road, Poplar (Messrs. Croxson & Co., Ltd., for Messrs. Fletcher, Son, & Fearnall, Ltd.).—Consent.

and.—Erection of buildings upon the site of No. 242, Battersea Park-road, Battersea, next to Battersea Bridge-road (Mr. A. C. Wheeler).—Consent.

and.—Erection of an addition at the rear of No. 14, Hampstead-road, St. Paneras (Mr. M. W. Matts for Mr. J. Rossdale).—Consent.

and.—House on the southern side of Troughton-road, Greenwich, with its flank abutting upon Rathmore-street, and four houses on the southern side of Troughton-road, eastward of Rathmore-street, with regular open spaces at the rear (Mr. R. G. Abbott).—Consent.

and.—Retention of a further division wall at No. 52, Trundley's-road, Deptford (Messrs. Burch & Stevenson for Messrs. Peck Brothers & Wiche, Ltd.).—Consent.

and.—Reconstruction of a party floor at No. 50, Ledbury-road, Bayswater (Mr. P. Snow for Mr. J. H. Snow).—Consent.

and.—Retention of a building upon the site of Nos. 23 and 30, Great Peter-street, and Nos. 2, 4, and 6, St. Ann's-lane, Westminster (Messrs. Perry & Co. (Bow), Ltd.).—Consent.

and.—Alterations at No. 3, Williams-mews, Belsize-lane, Hampstead (Mr. A. F. Faulkner for Mr. W. Willett).—Refused.

and.—Retention of a further division wall at No. 52, Trundley's-road, Deptford (Messrs. Burch & Stevenson for Messrs. Peck Brothers & Wiche, Ltd.).—Consent.

and.—Reconstruction of a party floor at No. 50, Ledbury-road, Bayswater (Mr. P. Snow for Mr. J. H. Snow).—Consent.

and.—Formation of new streets for carriage traffic on the Crabtree Farm estate, Fulham Palace-road, Fulham (Messrs. Allen & Norris).—Consent.

and.—Formation or laying out of a new street for carriage traffic to lead from Providence-place to Skeene-street, Hammersmith (Mr. F. H. Wits for Messrs. T. H. Kingler & Sons).—Consent.

and.—Formation or laying out of a new street for carriage traffic to lead from Denny-street to Chester-street, Kennington (Mr. G. Bartlett for the Duchy of Cornwall).—Consent.

and.—Formation or laying out of a new street for carriage traffic to lead out of the western side of Verdant-lane, Catford (Mr. J. Everington for Mr. H. W. Forster, M.P.).—Consent.

and.—Formation and laying out of a new street, for foot traffic only, to lead out of the western side of West Ferry-road, Millwall (Messrs. H. Hooper & Co.).—Consent.

and.—Formation or laying out of a street for foot traffic only out of the eastern side of Queen's-row, Walworth (Mr. G. Jackson for Mr. F. Savage).—Refused.

and.—Formation or laying out of two streets for carriage traffic out of the eastern side of Roehampton-lane, Putney (Messrs. G. W. & W. Smith).—Refused.

and.—Proposed street, to lead from Tothill-street to Princes-street, Westminster (Messrs. Drivers, Jonas, & Co.).—Consent.

and.—Provision of iron doors on one side and hardwood doors glazed with fire-resisting glazing on the other side of each of the south-eastern staircases; formation of a window opening in the division wall between the main rear block and the one-story western rear block; and erection of two external reinforced concrete lift enclosures at the warehouse of Messrs. Lilley & Skinner, Ltd., Pentonville-road and Winchester-street, Finsbury (Mr. A. Sykes for Messrs. Lilley & Skinner, Ltd.).—Consent.

and.—Erection upon a site abutting upon Fulham-road, Lucan-place, Leader-street, and Sloane-avenue, Chelsea, of a building (Michelien Tyre Company, Ltd.).—Consent.

and.—Addition to a bakery at the premises of the Royal Arsenal Co-operative Society, Ltd., Powis-street, Woolwich (Mr. T. G. Arnold for the Royal Arsenal Co-operative Society, Ltd.).—Refused.

and.—Iron sheathed doors in lieu of iron doors to staircase openings in division walls at the buildings at the rear of Nos. 5 to 27, Old-street, Finsbury, and to openings at the end of a covered way at the fourth floor level (Mr. H. O. Ellis for Moreland's Buildings, Ltd.).—Consent.

and.—Uniting of openings in division walls at the premises of Messrs. John Barker & Co., Ltd., Kensington High-street, of larger size than specified in the said section and with double roller steel shutter (Messrs. John Barker & Co., Ltd.).—Consent.

and.—Uniting of Nos. 199, Westminster Bridge-road, Lambeth, with No. 1, Pelix-street, by means of an opening at the first floor level (Messrs. Bartlett & Ross for Messrs. Drako & Gorham).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

and.—Uniting of Nos. 57 and 59, Regent-street, by openings at the second, third, and fourth floor levels (Messrs. Emden, Egan, & Co., for Messrs. Swan & Edgar).—Consent.

Cubical Extent and Uniting of Buildings.

Kensington, South.—Erection upon the site of Nos. 25 to 35, Hans-road, Kensington, of a division of a building to form an extension to the premises of Harrod's Stores, Ltd. (Mr. C. W. Stephens for Harrod's Stores, Ltd.).—Consent.

The recommendations marked † are contrary to the views of the metropolitan borough councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Extensions to Messrs. J. & W. Henderson's premises, Market-street (2,200l.); Messrs. Jenkins & Marr, architects, 19, Bridge-street, Aberdeen.

Alderney.—Hospital (3,000l.); Mr. S. J. Newman, Surveyor, Poole Town Council.

Bainsford (Stirlingshire).—Extensions to foundry (7,000l.); Engineers' Department, Messrs. Currys Company, Bainsford.

Barbury.—Forty houses (6,100l.); Mr. N. H. Dawson, Surveyor, Banbury Town Council.

Bantry.—Ten houses (1,295l.); Messrs. Barnett Bros., builders, care of the Town Clerk, Bantry Town Council.

Barnoldswick.—Store, shop, and house, Gisburn-road, for the Co-operative Society.

Barrow-in-Furness.—Police station, courts, etc., Market-street (16,000l.); Mr. A. Race, Surveyor, Barrow-in-Furness Town Council.

Birmingham.—Proposed extensions to baths, Kent-street (2,282l.); Mr. J. Cox, Engineer, Baths Department, Birmingham Corporation.

Blandford.—Territorial headquarters; Mr. F. T. Maltby, architect, South-street, Dorchester.

Boole.—Proposed extension of nurses' home; Mr. J. Clark, Clerk, Boole Board of Guardians, Broughton-in-Furness.

Brookfoot (Bradford).—Extensions to dye-works (1,800l.); Mr. Elliott, Engineers' Department, Bradford Dyers' Association, Bradford.

Chester.—Extensions to infirmary (12,500l.); Board of Management, Chester Infirmary, Chester.

Cleckheaton.—Shops, offices, etc., Northgate, for the Cleckheaton Co-operative Society.

Clydebank.—Extensions to engineering works, North Elgin-street (4,000l.), for Messrs. Dawson & Downie.

Conway.—Reconstruction of Guildhall; Mr. F. A. Delemotte, Surveyor, Conway Town Council.

Dartford.—School, Maypole Estate, Dartford Heath; Architect, care of Mr. F. W. Crook, Secretary, Education Committee, Kent County Council, Caxton House, Westminster, S.W.

Donholme.—Additions and new buildings, Erling's Quarry, for Messrs. A. Bryant & Co.

Denton.—Premises, Gorton-road, for the Denton and Haughton Equitable Co-operative Society, Ltd.

Devonport.—Post-office; Mr. A. N. Coles, builder, New Town-chambers, Old Town-street, Plymouth.

Douglas.—Workmen's houses (3,430l.); Mr. F. Cottle, Surveyor, Douglas Town Council.

Dudley.—School; Mr. G. Balfour, Secretary, Education Committee, Staffs County Council, Stafford.

Dundee.—Proposed improvements at work-house laundry (630l.); Clerk, Board of Guardians, Dundee.

Dunoon.—Additions to post-office (1,850l.); Mr. John Breingan, architect, 22, Queen-street, Edinburgh.

Edinburgh.—Extensions to engineering works (3,000l.) for Messrs. James Milne & Co., Ltd., Milton House Works, Edinburgh. Six houses (6,000l.); Messrs. Menzies & Cockburn, architects, 33, York-place, Edinburgh. Extension to Chalmers' Hospital, Lauriston-place, also additions to No. 4, Heriot-row (4,000l.); Mr. A. F. Balfour Paul, architect, 16, Rutland-square, Edinburgh.

Fence Houses.—Extensions to premises for the Chester-le-Street Co-operative Society.

Fermoy.—Four houses (765l.); Mr. D. Creedon, builder, Rathely-road, Fermoy.

Folkstone.—The following plans have been passed:—Eight houses, Shorncliffe Station-road, for Mr. W. Davis; four houses, St. George's-road, for Mr. C. Rootes; three cottages, Peter-street, for Mr. G. Mortlock; Mr. H. Videan, architect.

Forfar.—Headquarters, etc., for Territorials, Brechin-road, Messrs. Gavin & Soutar, architects, 42, East High-street, Forfar.

Harwich.—Headmaster's house at County High School (1,010l.); Mr. J. H. Nicholson, Secretary, Education Committee, Essex County Council, Chelmsford.

Hayward's Heath.—King Edward Memorial

cottage hospital; Messrs. Wheeler & Godman, architects, Bank-chambers, Horsham.

Howden-le-Wear.—Improvements to parish church (450l.); the Vicar.

Hull.—Fishermen's school (10,000l.); Mr. J. H. Hirst, City Architect, Hull Town Council.

Hulme.—Cottages, Barrack-street site (7,615l.); Mr. Henry Price, architect, Manchester City Council.

Hyde.—Police offices and court rooms (4,500l.); also public hall (8,500l.); Mr. J. Dingle, Surveyor, Hyde Town Council.

Ilkeston.—School, Bennerley-street (3,650l.); Mr. A. Earnshaw, builder, Burr-lane, Ilkeston.

Keighley.—Oil engine works (2,500l.); Messrs. Moore & Crabtree, architects, Cavendish-street, Keighley.

Kingswear.—Railway station; Mr. Harold Smith, Great Western Railway Office, North-road, Plymouth.

Kingswood (Bristol).—Science school; Mr. R. S. Phillips, architect, The Cross, Gloucester.

Kirkby Lonsdale.—Hospital (1,000l.); Mr. J. Russell, Surveyor, Kirkby Lonsdale Urban District Council.

Lamberhead Green.—School, Woodford-street (200 places); Mr. J. W. Horne, Secretary, Education Committee, Wigton Town Council.

Lancaster.—Isolation hospital; Mr. W. D. Ball, Clerk, Board of Guardians, Lancaster.

Leith.—Additions to works for Messrs. Bertram & Sons, engineers, Leith Walk, Leith.

Manchester.—Proposed extensions to Royal Exchange, Bank-street (500,000l.), for the Royal Exchange, Ltd.

Marple.—Picture palace, Union-road, for the Palatine Theatre Company.

Muthill.—Extensions to public baths (2,000l.); Mr. Charles Ewing, Crief.

Nelson.—Weaving shed off Brunswick-street for the Marsden Mill Company, Ltd.

Newcastle (Ireland).—Seven houses (990l.); Messrs. W. J. Campbell & Sons, builders, Carlton House, Carolan-road, Belfast.

Newcastle-on-Tyne.—Proposed baths; Mr. W. J. Steele, Engineer, Newcastle Town Council.

Newport (Mon.).—Remodelling, etc., front portion of baths: Architect, Newport Town Council, House, near Newport (2,500l.); Mr. A. G. Babbage, Clarence-chambers, Pontypool.

Newquay (Cornwall).—Pavilion (750 places); Mr. John Ennor, jun., Surveyor, Newquay Urban District Council.

Newry (Co. Down).—Seven houses, Church-street (990l.); Messrs. W. J. Campbell & Sons, builders, Carlton House, Carolan-road, Belfast.

Patrick (Glasgow).—Alterations to tramway depot, Hayburn-street; City Architect, Glasgow City Council.

Plymtree.—Rectory (2,000l.); Mr. Harbottle Rees, architect, 12, Castle-street, Exeter.

Pontymoile.—School (2,275l.); Messrs. Turford & Southward, builders, Ludlow.

Radcliffe.—Additions to infirmary (21,000l.); Mr. E. Warrin, architect, 20, Bedford-square, W.C.; Messrs. Woodbridge & Simpson, builders, Oxford.

Rhos Brithdir.—School (3,600l.); Mr. G. Hitchens, architect, Welshpool.

Rochford.—Infants' home; Mr. W. J. Wood, architect, 26, Alexandra-street, Southend-on-Sea.

Romford.—Cottages on sewage farm (1,000l.); Architect, care of Mr. J. Turvey, Surveyor, Romford Urban District Council.

Rufford (Manchester).—School (600 places); Mr. C. J. Bristowe, Secretary, Education Committee, Notts County Council, Nottingham.

Rugby.—Children's home (740l.); Mr. Perkins, builder, care of Mr. J. W. Pendred, Clerk, Board of Guardians, Rugby.

Shawclough (Rochdale).—Offices, etc., for the Rochdale Asbestos Company, Ltd.

Smethwick.—Extensions to works, Bridge-street, for the Smethwick Steel Company.

Southampton.—Shelter, convenience, store, and mess-room (520l.); Mr. W. Buck, jun., builder, care of Mr. J. A. Crowther, Engineer, Southampton Town Council. The following plans have been passed:—Alterations and additions, No. 102, St. Duns-road, and two houses, Ampthill-road, for Messrs. Weston & Burnett; school, Oak Mount, Brookvale-road, and two houses, Newlands-avenue, for Messrs. Jurd & Sanders; motor garage, Brookvale-road, also thirty-three houses, Bond and Dimond roads, for Mr. J. Smith.

Stoke-on-Trent.—School of science and technology; Architect, care of Mr. W. L. Copeland, Secretary, Education Committee, Stoke-on-Trent Town Council.

Sunderland.—Extensions to foundry for Messrs. John Lynn & Co.

Swansea.—The following plans have been passed:—Four houses, Cecil-street, Manselton, for Mr. Henry Rogers; two houses and shops, Penvelion-road, for Mr. D. Thomas; fifteen houses, Maesteg-street, St. Thomas, also extensions of premises, Maesteg-street, for Mr.

D. W. A. Saunders; additions to Build Arms, Oxford-street, for the Swansea Unit Breweries; eighteen houses, Ysgol-street, for Mr. E. Murphy; four houses, Ysgol-street, for Mr. S. Govier; eight houses, Prince of Wales-road, for Mr. C. Gustavus.

Tibshelf.—School (5,000l.); Mr. G. Widdowson, architect, St. Mary's-gate, Derby.

Twickenham.—A plan has been passed, additions to No. 12, Walpole-gardens, Messrs. Collinson & Co. A plan has been lodged for rebuilding a shop and house, Heath-road, for Mr. G. Stark, ironmonger.

Wallsend.—Club, Coronation-street; Architect, care of the Secretary, Wallsend S.C. Club.

Warrington.—School (13,000l.); Mr. T. Buttery, architect, Queen-street, Marle.

Messrs. J. Dolan & Son, builders, Warrington.—Wattsville (Mon.).—School (7,500l.); Messrs. Bailey Bros., builders, Pontypool.

Wimborne.—Territorial headquarters; Mr. F. T. Maltby, architect, South-street, Dorchester.

Woodside.—School (2,750l.); Mr. W. Cowdell, architect, Alloway-chambers, Ayr.

Yarmouth.—School of art, Trafalgar-road, also school for boys at Cobholm; Mr. Cockrill, Borough Surveyor, Town Hall, Great Yarmouth.

York.—Houses, Alma-terrace; Mr. F. Spurr, Surveyor, York Town Council.

THE LONDON BUILDING TRADE.

It is stated that a movement is on foot among the members of the London Building Trades Association to endeavour to secure a revision of the hours and wages which are in force at present. There are eighteen sectional unions concerned with the trade in the metropolis, and these are federated together with the London Building Industries Federation, the total membership being upwards of 20,000. No definite decision has yet been arrived at, but the members are being balloted with a view to ascertaining the general opinion of the members in regard to the proposed alteration. The general rules in force, agreed upon between the men's union and the Master Builders' Association, provide that the hours of work are fifty in the summer and forty-four in the winter, and the wages ranged from 7d. an hour for a labourer to 11d. in the case of skilled mechanic. The complaint of the men is that wages have not risen in proportion to the increased cost of living.

PATENT SPRINGLESS LOCK.

Messrs. Chubb & Co. have recently introduced a lock design on a new principle. It is only in its without springs, but without substitutes for springs, such as weights. The object of the design is to press the tumblers or their equivalents in one direction, so that they may be in contact with the key as it is being used, and return to rest when the key is removed. Without a spring, a tumbler or another lock might get into what is called an open position, and remain there, which would be enough to prevent the proper locking from opening the lock. In this new Chubb lock the detainers are not tumblers, level pins, or discs, as in other locks, but are shaped something like the letter U, with the ends of the U pieces at right angles to the sides of the U. The U pieces slide laterally in a channel fixed to the bolt, and when locked one arm of each pin is in front of the end of the rim to prevent inward movement of the bolt. The key, made of flat metal, is stepped on both edges, and distance across any pair of opposite steps equal to the distance between the parallel sides of the U. The key enters between the sides of the U, and as it is turned the longer step moves the U pieces their required distance one way or the other, from the centre of the key, so that the step opposite to each of the U pieces is in contact with the side of the U, causing the movement checks overmovable from momentum or gravity. When the key is at right angles to the sides of the U, the pieces all the steps on both sides of the U are in contact with the sides of the U, and the ends of the U pieces are just clear of the ends of the rim, so that they now form an obstacle to the movement of the bolt. At the moment, if the key be further turned, the bolt begins to move by the action of the revolving carrier, which is taken round by the key. Just before the movement of the key and U is completed, and the key steps are leaving the U pieces, the scatterer begins to act. The scatterer is a part of the carrier, and is shaped as to move the U pieces in both directions into positions very different from those at which the lock will open. The important factors of security are present. Undoubtedly lifting and overlifting are possible, as in good locks, and take place, when an attempt is made to pick the lock of a wrong key used. If undetected, a U piece catches at the end on the rim, and if overlifted on the other

* See also our list of Competitions, Contracts, etc., on another page

Mr. Munroe, in opening the case, explained that the appeals related to the erection of bank premises in the Wimbledon Park-road, at the corner of Augustus-road. The bank purchased land in 1907, and it consisted of 236 square yards. It was simply an open space, and the bank had not yet erected any partially erected bank premises. The new building between Southfields Station and the county boundary. The appellants had no intention of building until the place was ripe for a bank; but they were informed that it was the intention to build a row of small houses in Augustus-road, and that in order to fix this might fix the building line in Augustus-road, the bank buildings were commenced on March 27. The building had proceeded very slowly, and had reached the first floor. Dealing first with the position in Wimbledon Park-road, the appellants had gone a considerable distance of over a mile in order to find the building line; but he had not been content with that, because instead of going straight on when he got to the bank premises, he "slewed" the line round, and cut off the bank's land. He submitted that, firstly, the appellants had taken the line, and secondly, that he had then skewed the line round and destroyed the whole value of the bank's frontage. The reason for this was obvious. At some time the County Council would wish to bring tramways to Wimbledon Park-road, and the appellants would then be in a position to say whether they should buy the land at its market value or sterilise the land.

and buy it at its sterilised price. As the matter stood, the bank would only be able to build on two-and-a-half square yards out of 236 square yards of land. He might say that the bank did not want to make anything out of it, and would hand the whole thing over to the County Council at cost price. With regard to the Augustus-road, the Superintending Architect had gone across the Wimbledon Park-road and had taken the buildings in Ripplingham-road as fixing the building line for Augustus-road. He contended that the County Council had, in taking such an extraordinary long length in Wimbledon Park-road, done the very thing which was denounced by Mr. Justice Wills in cases which came before him in 1894.

Mr. Horace Cheston, architect, of Union-court, Old Broad-street, said he was called in on April 7 with regard to the erection of the bank. He visited the site on April 9 and found that certain work had been executed on the site by Messrs. Turtle & Appleton, builders, under the direction of Mr. Lee, the superintendent of works for the appellants. He prepared plans, and a contract was signed by Messrs. Johnson & Co. for the erection on May 7, and they commenced work on May 12. With the exception of the work done by Messrs. Turtle & Appleton the site was an open field, and there were no signs of building in Augustus-road.

Mr. Macmorran said he was going to contend that the question of Augustus-road was one for the magistrate. The Superintending Architect was called in by the Wandsworth Borough Council to fix the building line, and he went down and fixed the line from the buildings then standing.

Mr. Munroe said the point was whether the appellants were to be permitted to go on with their building?

Mr. A. A. Hudson (the Chairman): We are not going to fix the building line. We are only going to fix so far as we can see the general line of buildings.

Witness proceeded to give evidence as to the progress of the building and of the cottages erected in the Augustus-road, and was cross-examined as to whether the cottages were not started before the bank buildings.

Mr. Lee, superintendent of buildings for the appellants, gave evidence as to instructing Messrs. Turtle & Appleton to erect part of the brickwork boundary walls on the site in question, and Mr. H. Smith, representing this firm of builders, stated that he commenced the work on March 27 and that it was finished on April 5.

Cross-examined by Mr. Young, witness said he did not give notice of the work. That was not that he did not consider it a building, but because he thought the architect had given notice.

Mr. F. Boxall, a foreman of Messrs. Johnson & Co., the builders who contracted to do the work under Mr. Cheston, stated that he set out the site on May 12, and gave the District Surveyor notice on May 13. He used part of the brickwork which had been put in by Messrs. Turtle & Appleton. When he started the work, he was sitting on the adjoining land in Augustus-road; but there were no bricks on the site. On May 15 the men began to excavate for the cottages, and they got up to the first floor in about a week.

In cross-examination, witness denied having ever stated that he did not use any of the brickwork put in by Messrs. Turtle & Appleton.

The hearing was adjourned till Tuesday, when Mr. Dady addressed the Tribunal. He said that with regard to the suggestion that the Superintending Architect had gone too far from the general line of buildings, he would point out that had someone built a row of houses in the Wimbledon Park-road, on the part now unbuilt upon, the bank would have been in a very different position. It was quite clear that the bank could have come in 1907 and got the building line determined.

Mr. Slater (a member of the Tribunal) pointed out that the Superintending Architect could not define the building frontage where there were no houses.

Mr. Dady said the appellants bought with the chance that houses would come in one part of the road or another, and it was their own fault if they built without getting a decision. There were two suggestions before the Tribunal with regard to Wimbledon Park-road. The Superintending Architect said it was a homogeneous road of much the same nature all along its length, and that *prima facie* the general line of buildings should be governed from the whole of its length by some houses which are already put up in the southern part of it. The contention of the appellants was that the building they proposed to put up could not be described as being in the road—meaning the whole length of the road—and, therefore, discrimination must be

used, and in some way or another the road should be divided up; and it should be said that the bank building was in a different part of the road from the part in which there were existing houses. The appellants said there were no houses in the southern part of the road; but they would never have erected the building if they thought that other houses would not be built. Then it was said that a perfectly straight line had not been taken, but that the Superintending Architect had allowed for the gradual curve in the road.

Mr. Hudson said their difficulty was that they were not dealing with the building line, but with the general line of buildings. It had no relation to the width of the street or other things, but must be the general line of buildings. He could see cases where they might prolong the line of buildings, but he doubted if they could follow it into a curve. There could be no dispute that on June 12 there was a building 5 ft. above the ground on the bank site, and therefore when the Superintending Architect fixed the line he must obviously take into account the bank building, which was the only building.

Mr. Dady said Augustus-road was the meaning of "taking into account." He admitted that it was within the power of the Tribunal to stop the general line of buildings at Augustus-road; but the Superintending Architect said the whole road should be taken into account. If it was said that they were not to carry on the line of buildings from an existing set of houses in nothing but a perfectly straight line, then, of course, the objection of his friend was fatal.

Mr. Hudson said they could not lay out the general line of buildings simply to improve an estate, but they had to make the general line deduced from the buildings already there, and it might be that the buildings as existing were in a curve. Hence it all depended on the particular case.

Mr. Dady said the Tribunal had to find in what road the bank really was. The Superintending Architect had found that the building was in Wimbledon Park-road, meaning the whole length of the road. With regard to Augustus-road, he thought it would be agreed that the work done by Messrs. Turtle & Appleton was in the nature of staking out a claim. His submission was that the Superintending Architect in fixing the general line of buildings must take into account the buildings there when he fixed the line.

Mr. Hudson said they had to ascertain if there was any general line of buildings in the street at the time the appellants put up their building. If there was a general line, and the bank came in front of it, then that building would be unlawfully there. He admitted that his view used to be that they had only to take into account the buildings which were there; but the decision in regard to Euston-road has shaken his views, because it was held that they must take into consideration only buildings which were lawfully present, and this might mean going back to 1700.

Mr. R. E. Smith, District Surveyor for Wandsworth, stated that on April 1 the builders called on him and stated that they were putting in a boundary wall on the site. He saw the work being done, and reported to the Superintending Architect on April 5 that work of a more substantial kind than a boundary wall was being done. He received a notice from Messrs. Johnson & Sons, the builders, of their intention to build on May 9, and their foreman brought the plans round to him on May 15. He viewed the building operations, and came to the conclusion that the building line was being infringed, and on May 15 he wrote to the builders stating that they would be carrying on the work at their own risk. To the best of his belief the whole of the work done by Messrs. Turtle & Appleton was taken out. The work of setting out the adjoining villas was done on May 16, and concreting went on on May 22.

In cross-examination, witness said that, rightly or wrongly, since April 5 all parties knew that the work done by Messrs. Turtle & Appleton was intended for the external walls of the bank.

Mr. W. Lane, builder, of East Sheen, stated that he and his partner owned seven plots of land in Augustus-road, and had built six pairs of villas. The first pair were 20 ft. 6 in. from the street to the bay windows. Each pair of villas dropped back a foot. They commenced clearing the site for the first two houses on May 9. They started pegging out on May 15, and on the 16th they started digging, and went on continuously. They commenced the brickwork on May 22 or 23, and this was above the ground level of concrete. He believed he commenced building his houses before the bank had a brick on the site.

Mr. Wright Miller, Sanitary Inspector, gave

evidence of the progress of the works on bank site, and said that Boxall told him the whole of the brickwork put in by Messrs. Turtle & Appleton was taken out.

Mr. A. Milford, assistant, of the Superintending Architect's Department, expressed the view that the general line of buildings should be fixed by the existing buildings.

Mr. Peter Dodd, Engineer and Surveyor of the Wandsworth Borough Council, was called by Mr. Young, and put in a notice received from Messrs. James & Lano of their intention to build seven houses on May 9, and that were disapproved. They sent in amended plans on May 22, and these were approved by the Highways Committee on July 1. Messrs. Johnson & Sons gave notice of their intention to build on May 13, and these were also disapproved on account of the drains. Amended plans were submitted on June 7 and approved on July 4.

Mr. Courdope Munro addressed the Tribunal. He reiterated his contention that the appellants, in starting on the bare fact established a building line. If it was to be held that the houses erected in Augustus-road were to govern the building line, it would be agreed to any owner who wished to proceed in a proper way with his building, by consulting an architect and so on, would be caught in a trap if someone came along and rushed up a row of houses in a few weeks.

The Tribunal reserved their decision.

WESTMINSTER CITY COUNCIL.

At the sitting of this Council on Thursday, October 12, the following, amongst other matters, were dealt with:—

Piccadilly Circus Rebuilding.—It was reported that the London County Council had agreed to the application of Mr. John Munro for the re-erection of buildings in Regent-street, Piccadilly, and Glasshouse-street, certain lines, and subject to certain conditions. This building line agrees with that approved by the City Council on July 6 last.

Hotel de France Site.—The Highways Committee reported having received a notification from the London County Council, dated September 13, of a resolution allowing a modification of the provisions of sect. 41 of the London Building Act, 1894, with regard to open space about buildings, so far as relates to the proposed erection of an hotel building on the site abutting upon Glasshouse-street, Aldersgate, Brewer-street, and Sherwood-street, shown on the plans submitted with the application of Messrs. W. J. Ansell and H. Tamm, jun., subject among other conditions to the following:—That before the commencement of the erection of the building the whole of the land cross hatched red on the block plan left open for the use of the public for the term of the lease from the Crown. Within the boundaries of the proposed site is King's Arms Yard, in regard to which serious and vexatious ownership have been performed by the Highway authority, including the paving of the yard in 1896. It was agreed to inform the architects that the yard will be claimed as a public highway vested in the Council.

LAW REPORTS.

Minter v. Waldstein.

MR. MUIR MACKENZIE, the Official Referee, has fixed: Friday (to-day) for delivering judgment in this case.

It will be remembered that the action was brought by Mr. F. G. Minter, a builder and contractor, against Dr. Charles Waldstein, Professor of Art at Cambridge, from whom he claimed 2,750l., the amount payable in respect of a certificate of Mr. Frederick Wm. Foster, an architect, and in respect of a contract made between the plaintiff and the defendant for the carrying out of alterations and additions at Newton Hall, Hartson, near Cambridge.

Defendant alleged that the work was defective, and counterclaimed against the plaintiff for 10,000l. damages.

The case was reported in the issues of *The Builder* of July 14, 21, 23, August 4, 11, 18, and 25.

HIGH COURT OF JUSTICE, CHANCERY DIVISION. (Mr. Justice Eve).

Schworer v. Bethnal Green Borough Council. Infringement of Ancient Lights.

In this case the plaintiff, Joseph Schworer, claimed damages from the Bethnal Green Borough Council for damages for infringement of the ancient lights in his premises situate at 20, Patriot-square, Bethnal Green.

defendants denied that their building had any loss of light which would amount to nuisance, and pleaded that there was a plentiful light in the room for all reasonable requirements. They also alleged that a room belonging to Messrs. Colmans, & Co., to the south and south-west of the plaintiff's premises, interrupted to a considerable extent the access of light.

Mr. Jessel, K.C., and Mr. St. John Clarke, for the plaintiff, and the defendant were represented by Mr. P. Ogden, for the defendant, and Mr. J. T. Prior, for the plaintiff.

Mr. Jessel, K.C., in opening, said that the plaintiff was the owner of the premises, 20, Finsbury-square, and was in receipt of the rents and profits. In 1909 the Council took over and erected on the site, and on adjoining land, a Town Hall, at a lateral distance of 16 ft. 6 in. therefrom. The plaintiff's house consisted of a basement and three floors, and rooms at the back (south) were lighted by windows, one in each of the sloping sides of a bay. The windows on the western side were inclined at a comparatively small angle to the eastern wall of the Town Hall. The basement and ground-floor windows to the south were most affected by loss of light.

The plaintiff purchased the house in 1906 for £1,400, and it was let at 15s. 6d. per week. In 1909, shortly after the defendants commenced the new Town Hall, in consequence of complaints as to the diminution of light, the rent of the premises had to be reduced to 10s. 6d. per week.

Correspondence took place between the solicitors, but no arrangement was made, and consequently the present proceedings had to be commenced.

Mr. Justice Eve: At what sort of figure do you estimate the damage?

Mr. Jessel: The loss of rent is just over £100 a year, and I submit that, as it is a hold house, the loss should be estimated at 10 years' purchase.

Mr. Jessel proceeded to explain the details of the premises with the aid of a model, and in answer to his Lordship said that the side of the Town Hall facing the plaintiff's house was not glazed with white bricks. A line drawn at right angles from the sills of the plaintiff's windows fell on the defendants' buildings. The plaintiff did not claim any injunction.

His first witness was Mr. Reginald Arthur Rix, A.R.I.B.A., a member of the firm of Messrs. Rix & Wilkins, of Budget-Row, E.C. In answer to Mr. Jessel, he said that he owned the plaintiff's premises in January, 1909, and had been the plaintiff's agent on behalf of the plaintiffs. He considered there to be a distinct loss of light owing to the erection of the Town Hall, which was considerably higher than the previous erections on the site. As the plaintiff's windows faced the west, the new building shortened the light from the windows at the sill would be at a much earlier hour than before. That would be particularly felt in the winter, and the consumption of artificial light would be greater. Before the erection of the Town Hall the angle of obstruction of light from the ground-floor windows at the sill would be slightly under 22 deg.; at the present time, being the light at right angles from the sill the ground-floor windows, the angle of obstruction was 55 deg.

Mr. Justice Eve: An increased obstruction of light?—Yes.

Continuing his evidence, Mr. Rix said that his second visit there was a material situation in the amount of light coming to the basement and ground-floor windows. The existing fence round the property darkened the basement window somewhat, but the new building had materially lessened the light.

Cross-examined by Mr. Lawrence, K.C.: He did not before seen such an extraordinary obstruction as the plaintiff's building. He agreed that the plaintiff's windows on the western side had a remarkably clear and open view for that part of London. He did not see the floor area of the rooms, but agreed that the figure of 178 sq. ft. suggested by the Counsel was approximately correct. He did not consider the excellent light enjoyed by the western windows of the upper rooms estimating the loss of light, but had confined his attention to the amount of light which was prevented from reaching the windows.

Mr. Lawrence, K.C.: I suggest that the defendant's room is an exceedingly well-lighted room?—When I was last there, on a day I thought it was only a fairly-lighted room. Did you try the ordinary test of reading any of the room? No.

Did you tell me the day and hour when you last visited the premises?—Witness could not fix the date.

Mr. Justice Eve: Do you consider this Court a well-lighted room? As a court, yes. Applying the same standard to the plaintiff's premises, do you consider the ground-floor room well lighted?—It was fairly well lighted on a bright day.

Mr. Lawrence, K.C.: Because some direct sunlight is taken away you consider the value of the room is considerably depreciated?—Yes.

Mrs. McEwen, the tenant of the premises, said that when she went to live there before the Town Hall was built, the ground-floor room was well lighted; but it had not been so since the Town Hall was finished. The people in the house had complained to her, and she herself had not been able to do her work as a boot machinist with the same comfort. She had also to use artificial light earlier than was the case before.

[The case was proceeding as we went to press.]

LONDON COUNCILS.

Acton.—Application is to be made to the Local Government Board for permission to borrow £500 for resurfacing Greatfield-road with tar macadam, and £900 for resurfacing a portion of Warpleway with granite sets. Plans submitted by the Surveyor for culverting the open ditch in Bello-lane, at an estimated cost of £1,400, have been approved.

Barnet.—The following plans have been passed:—Mr. George Hunt, four shops, Upper Richmond-road; Mr. Sidney Pacey, fourteen houses, Gerard-road; Mr. L. G. Clayton, motor garage, Lonsdale-road; Mr. Henry A. Jones, motor garage, Barnet-road.

Bermondsey.—The tender of Messrs. B. Finch & Co., Ltd., 82, Belvedere-road, S.E., has been accepted for the erection of an animal in Redriff-road. Plans have been passed for Messrs. G. Parker & Sons, 124, Summer-road, Beckenham, S.E., on behalf of Messrs. Hepburn, Gale, & Ross, Ltd., Grange-road, Bermondsey, for a warehouse on the west side of Wright's-buildings, Grange-road.

Barking.—At the last meeting of the Town Council the Works Committee reported that the Borough Surveyor had sent four notices to builders since the last meeting of the Committee, calling attention to the use of inferior building materials. Councillor Johnson said it had come under his notice that the foundations of some houses had crumbled away on account of bad material being used. It seemed very disconcerting to owners to be called upon to underpin their houses through that sort of thing, and that, in his opinion, the time had arrived when the Council should stamp out this kind of business. He expressed the intention of attending the next meeting of the Works Committee and to make a few suggestions regarding their by-laws.

Baker and Dittons.—£500, is to be spent on the improvement of various footpaths in the district.

Barnet.—Plans have been lodged by Messrs. Root & Sons for rebuilding brush works in Roman-road.

Bendon.—The following plans have been passed:—Mr. A. W. Elkington, for Mr. T. Elkington, eight houses, Cannon's-lane, Pinner; Messrs. Clark & Co., for Mr. C. Carrington, six houses, Pinner View; Mr. H. G. Assister, for Mr. J. S. Anthony, shop and house, Harrow Weald.

Holborn.—The Council have decided to make objections to the proposed building scheme of the Pearl Life Insurance Company, Ltd., on the site of Nos. 248-250, High Holborn, plans of which are now before the London County Council, on the ground that with regard to the block of buildings which extend from the Holborn Empire to Holborn-place, the proposed re-erection of the building line would be at the expense of the public way, which, in their opinion, was not justified.

Marylebone.—Instructions have been issued to the Assistant Surveyor to recast the roadway of Upper Gloucester-place. Repairs are to be carried out to the macadam roadways of New-street, Brynston-street, New Cavendish-street, Upper Marylebone-street, and Paddington-street.

Richmond.—Plans have been lodged by Mr. W. A. Lewis, on behalf of Mr. W. R. Waters, for alterations to the Star and Garter Hotel, Richmond.

Richmond.—Plans have been passed by the Urban District Council for Messrs. Salter & Co., Ltd., for extensions to the Bottling Works at the Rickmansworth Brewery.

Southwark.—The tender of the Patent Victoria Stone Company, Ltd., has been accepted at 14s. 14s. for providing and fixing new drains to the steps of the underground convenience at St. George's-road, Elephant and Castle. Plans submitted by the Borough Engineer have been approved for the alteration and decoration of the Blackfriars-road

District Library, and tenders are to be obtained for carrying out the work.

Stepney.—Electricity mains are to be extended in New Gravel-lane, Shadwell, and St. Anne's-street, Limehouse.

Tottenham.—The following plans have been passed:—Messrs. J. H. Clark & Co., additions at factory, Fountayne-road, for the Mills Equipment Company; Messrs. Lavington Bros., Atheneum-road, Whetstone, eight houses and shops, High-road; Mr. G. L. Wilson, care of Mr. H. S. Couchman, 520, High-road, Tottenham, six houses, Antill-road.

Tring.—An offer of £422 from the Road Board for converting certain flint roads into granite roads is to be accepted.

Wandsworth.—The following plans have been passed:—Messrs. C. W. Boris & Co., Ltd., on behalf of the Cunard Motor and Carriage Company, Ltd., alterations and additions to White Lodge, Lower Richmond-road, Putney; Messrs. Holloway Bros., four houses, Burntwood-lane; Mr. J. H. Harvey, additions to Cedarcroft, corner of Portsmouth-road and Heathfield-gardens, Putney Heath; Messrs. Yeoman, Spriggs, & Co., motor garage, Heathfield, North Drive, Streatham Park.

Watford.—Plans have been passed by the Rural District Council for Mrs. Ackerman for three houses at the Swillett.

West Ham.—The Education Committee have instructed the architect to prepare draft plans providing for a school for about 1,500 children, and alternative plans for a school for about 1,600 children in four departments, on the Sophia-road site. The Committee have accepted the tender of Mr. A. E. Symes, at £5,200, for extensions to the Education Offices.

OBITUARY.

Sir W. J. Crossley, Bart.

Sir William John Crossley, of Glenfield, Altrincham, and Pull Woods, Ambleside, who died on October 12, aged 67 years, was head of the engineering firm of Crossley Brothers, of Openshaw, Manchester, motor and gas-engine makers. He was the son of Major Francis Crossley, of Dunmurry, Co. Antrim, and was educated at the Royal School, Dungannon, and at Bonn. He then entered Sir W. G. Armstrong's works at Elswick, and in 1867 started in business with his brother, the late F. W. Crossley, in Manchester. Sir William Crossley was elected M.P. in 1906 for the Altrincham Division, Cheshire. The baronetcy conferred upon him in 1909 descends to his eldest son, Kenneth, Chairman of Crossley Bros., Ltd.

Mr. H. Broadhurst.

Mr. Henry Broadhurst, M.P. in 1880-96, was born in Littlemore, near Oxford, in 1844. On quitting school at the age of twelve he found employment in a blacksmith's forge for two years; he then worked at his father's trade as a stonemason, and as a journeyman, laboured several years in and around Oxford, chiefly upon collegiate and ecclesiastical buildings. Coming to London in 1865, he worked as a mason upon the clock tower of Westminster Palace, the Abbey, Royal Albert Hall, Burlington House, Guildhall, and the Government offices, including the Home Office, where, in 1866, he held the position of Under-Secretary of State. In 1872 he relinquished his trade upon becoming a member of the Parliamentary Committee of the Trades Union Congress; in the next year he was appointed Secretary of the Labour Representation League, and in 1875 Parliamentary Secretary to the Trades Union Congress, which post he retained for an aggregate of fifteen years. He sat as M.P. for Stoke, 1880-5; Bordesley, 1885-6; West Nottingham, 1886-92; and Leicester, 1894-6. Mr. Broadhurst served upon the Royal Commissions on the Housing of the Working Classes and the Condition of the Aged Poor.

SCHOOL, ABERBARGOED.

A new elementary school for boys was opened at Aberbargoed recently. The school is situated near the main road from Aberbargoed to Pengam, and has accommodation for 400 boys. It has a central hall and eight classrooms. A manual instruction room has been built in the playground. The external walls are of local stone. The building is heated by open fireplaces and a low-pressure heating apparatus, installed by Mr. E. Porman, Newport. The building was erected by Messrs. Williams & Sons, contractors, Bargoed and New Tredegar, at a cost of £1,149, from designs by Mr. J. Bain, F.R.I.B.A., architect to the Monmouthshire Education Committee. The clerk of the works was Mr. G. E. Pettit, Fleur-de-Lis.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vii. x.; Public Appointment, xvii.; Auction Sales, xxvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

OCTOBER 28. — **Salford**. — Extension of office accommodation on workhouse site at Eccles New-road. Premiums 200, and 100. Particulars from the Board of Guardians, Salford, Limited to architects practising in Salford and district only.

OCTOBER 30. — **Holland**. — STAINED GLASS WINDOW. — Designs are invited for a stained glass window to be erected in the University at Groningen. See advertisement in issue of June 9 for further particulars.

OCTOBER 31. — **Bristol**. — ALTERATIONS IN THE GRAND HOTEL. — Particulars from Mr. F. A. Jenkins, 44, Corn-street, Bristol.

OCTOBER 31. — **Glebebone**. — NEW MUNICIPAL BUILDINGS. — Premiums of 100l., 75l., and 50l. The assessor is Mr. Henry T. Hare, F.R.I.B.A. See advertisement in issue of July 14 for further particulars.

NOVEMBER 1. — **City of St. Petersburg**. — MONUMENT TO ALEXANDER II. — Particulars in our issue of August 13, 1910.

NOVEMBER 17. — **Nottingham**. — BAPTIST CHURCH AND PREMISES. — Limited to Nottingham architects. Assessor, Mr. H. W. Willis, A.R.I.B.A. Particulars from Messrs. Horke & Jackson, solicitors, King-street, Nottingham.

NOVEMBER 30. — **Cardiff**. — TECHNICAL INSTITUTE. — The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to other competitors. Mr. J. S. Gibson, assessor.

NOVEMBER 30. — **Hastings**. — EAST SUSSEX HOSPITAL. — The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, assessor.

DECEMBER 2. — **Glasgow**. — DESIGN FOR A BRIDGE. — Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 500, and 200, are offered. See advertisement in issue of December 24 for further particulars.

JANUARY 1, 1912. — **Roehdale Infirmary**. — EXTENSIONS. — Limited to Roehdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 29, 1912. — **Montevideo**. — GOVERNMENT PALACE (Premiums 2,125, and 850). — and town improvement scheme (premiums 1,000, 600, and 425). Conditions may be seen at the Board of Trade, 7, Basinghall-street, E.C.

JANUARY 31, 1912. — **Australia**. — DESIGNS FOR FEDERAL CAPITAL CITY. — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars.

JULY 1, 1912. — **Dusseldorf**. — A plan for the extension of the City of Dusseldorf. Premiums of 1,000, to 375. Conditions on application to the Chief Burgomaster, Dusseldorf.

NO DATE. — **Armadale**. — Public hall and offices, to cost 2,500. Premiums of 150, and 100.

NO DATE. — **Bolton**. — Miners' Federation Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 500, and 250. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernihough, 7, Fold-street, Bolton.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 21. — **Ebbw Vale**. — REPAIRS, ETC. — For repairing and painting the Draynor Arms Hotel, Tirphill, and the Duke of Wellington Inn, Ebbw Vale. Specifications with Mr. T. Rederick, architect, Clifton-street, Aberdare.

OCTOBER 21. — **Liverpool**. — OPERATING DEPARTMENT. — Erection of an operating department at the Workhouse, Brownlow hill. Plans with the architects Messrs. Haigh & Thompson, 2, Exchange-street, E., Liverpool.

OCTOBER 23. — **Cardiff**. — HALL. — Erection of museum hall at the City Hall. Drawings and specification seen, and quantities from the City Engineer, City Hall, Cardiff.

OCTOBER 23. — **Denton**. — GREENHOUSE. — Erection of a greenhouse at the Denton Cemetery. General conditions and information from the Surveyor, Town Hall, Denton, near Manchester.

OCTOBER 23. — **Stalybridge**. — WAREHOUSE. — Erection of a new warehouse in Hartop-street

and Chapel-street. Plans and quantities from Mr. Edward Garlick, architect, 3, Portland-place, Stalybridge.

OCTOBER 23. — **Stockport**. — REPAIRS. — For repairs at the cottages, Nos. 48, 50, and 52, Bramhall Moor-lane, Hazel-grove. Specification seen, and particulars from Messrs. Peirce & Son, architects, 24, Petergate, Stockport.

OCTOBER 23. — **Tondu**. — VILLAS. — Erection and completion of two semi-detached villas at Coyrahen. Plans and specification with F. W. Barnist, architect, Tond Clain.

OCTOBER 24. — **Pettigo**. — ADDITION. — Erection of an addition to the Peltigo Co-operative Agricultural and Dairy Society. Plans and specification with Mr. F. G. Townsend, A.M.Inst.C.E.I., architect, Ballyshannon, Ireland.

OCTOBER 24. — **Winchester**. — SCHOOL. — Erection of a new elementary school on the Danemark Estate. Names to the architect, Mr. A. H. Johnson, Winchester, Post 48, of 21, 28.

OCTOBER 24. — **Windsor**. — SEEDS. — Erection of cart-sheds at new yard in Queen's-road, Sunning-hill. Plan and specification with the Surveyor, Mr. W. Menzies, Englefield Green.

OCTOBER 24. — **Woodgate**. — SCHOOL. — Erection of a new Council school. Plans and specifications with Messrs. Crouch, Butler, & Savage, architect of 39, Newhall-street, Birmingham. Deposit of 10, 1s.

OCTOBER 25. — **Guildford**. — WALLS, ETC. — For pulling down and removing certain buildings in North-street, the re-erection of certain walls, and making good property disturbed. Plan and specification seen, and form of tender from the Borough Surveyor, Mr. C. G. Mason, A.M.Inst.C.E.I., Tuns Gate, Guildford.

OCTOBER 25. — **Kirkheaton**. — HOUSE. — Erection of a dwelling-house. Plans seen, and quantities from Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

OCTOBER 25. — **Loughinstown**. — ANNEXES. — Erection of sanitary annexes at the Fever Hospital. Plans and specification with Mr. G. T. Moore, C.E., 1 and 2, Foster-place, Dublin.

OCTOBER 25. — **Newington-by-Sea**. — HALL. — Erection of a lecture hall. Plans and specification seen, and quantities from the architect, Mr. G. Bell, 34, Blackett-street, Newcastle-on-Tyne.

OCTOBER 25. — **Sheffield**. — EXTENSION. — For the extension of the male sanatorium at the Union Hospital, Fair Vale. Plan and specification and quantities from Mr. G. D. Baxter, Clerk of Works, Fair Vale Workhouse.

OCTOBER 26. — **Cleckheaton**. — OFFICES, ETC. — Erection of shops and offices for the Cleckheaton Industrial Co-operative Society, Ltd. Plans and specifications seen, and quantities from Messrs. R. Castle & Sons, architects, London City and Midland Bank-chambers, Cleckheaton.

OCTOBER 26. — **Dewsbury**. — ADDITIONS. — For erection of additions to business premises. Drawings and specifications seen, and quantities from Messrs. Joseph Firth & Son, architects, 67, Vulcan-road, Dewsbury.

OCTOBER 26. — **South Horncchurch**. — COTTAGES. — Erection of six cottages on Breton's Farm. Plans and specifications seen, and form of tender from Mr. Herbert T. Ridge at the Council Offices, Market-place, Romford.

OCTOBER 27. — **Broughton Pictet**. — SCHOOL. — Erection of a semi-permanent school building. Mr. W. D. Wiles, County Architect, 424, High-street, Wrexham. Deposit of 10, 1s.

OCTOBER 27. — **Mesbury**. — REPAIRS. — For building cross walls and repairs at the bridge. Specification from Mr. H. Michelmore, Clerk of the Council, Castle of Exeter.

OCTOBER 27. — **Bonford**. — ALTERATIONS. — For alterations to the Council Offices. Specifications and drawings with the Surveyor, Market-place, Romford.

OCTOBER 28. — **Bathpool**. — IMPROVEMENTS. — For improvement works at Wallford Corner and Down House, near Bathpool. Drawings, specification, quantities, and form of contract from Mr. H. T. Chapman, County Surveyor, County Surveyor's Office, Wells, Somerset. Deposit of 20, 2s.

OCTOBER 28. — **Portsmouth**. — EXTENSION. — For extension works at the Tramway Dept. Plans, specification, and conditions on deposit of 30, 3s., from the Borough Engineer, Municipal Offices, Southampton.

OCTOBER 28. — **Sturminster Newton**. — SCHOOL. — Erection of elementary school. Plans, specifications, and forms of tender at the County Offices, Dorchester, and at the offices of Messrs. Fletcher, Son, & Bro. Wymers, Dorchester.

OCTOBER 28. — **Trelewis**. — HOUSES. — Erection of twenty-six houses on the Bontnewydd Farm. Plans and specification with Mr. Roderick, architect, Clifton-street, Aberdare.

OCTOBER 30. — **Douglas**. — DWELLINGS. — Erection of a block of dwellings. Plans, specifications,

and conditions from Mr. F. Cottle, C.E., Borough Surveyor, Borough Surveyor's Office, Town Hall, Douglas, Isle of Man.

OCTOBER 30. — **Maesteg**. — ADDITIONS, ETC. — Alterations and additions to the Town Hall buildings. Specifications and plans seen, and forms of tender from the Architect and Surveyor, Mr. Samuel J. Harpur, M.Inst.C. and M.E.S., Commercial-street, Maesteg. Deposit of 50, 5s.

OCTOBER 30. — **Mereworth**. — COTTAGES. — Erection of six cottages at Kent-street. Specification and plans seen, and information, on deposit of 10, 1s., from Mr. Frank J. Allison, Clerk, County Offices, West Malling, Kent.

OCTOBER 30. — **Ogmore Vale**. — HOUSES, ETC. — For the erection of 100 houses, making an forming streets, sewers, and drains at Ogmore Vale for the Lewis-Merthyr Consolidated Co. Plans and specifications with Messrs. H. Dawkin Williams & Son, architects, Blackmill, Glam.

OCTOBER 30. — **Uxbridge**. — LAVATORY. — Erection of a public lavatory at the Market House. Plans and specification with the Council's Surveyor, Mr. W. L. Eves, F.R.I.B.A., F.S.I., 54, High-street, Uxbridge.

OCTOBER 30. — **Waltham Cross**. — EXTENSION. — For the extension of Waltham Cross Post-office. Drawings, specification, and form of contract with the Engineer at Waltham Cross Post-office. Quantities and forms of tender at H.M. Office of Works, Storey's-gate, S.W. Deposit of 10, 1s.

OCTOBER 31. — **Edinburgh**. — BLOCK. — The Commissioners of H.M. Works and Public Buildings invite tenders for the erection (main contract) of the new administration block at the Royal Scottish Museum, Edinburgh. Drawings, specification, and form of contract seen, and quantities and forms of tender at H.M. Office of Works, Parliament-square, Edinburgh. Deposit of 10, 1s.

OCTOBER 31. — **Flymouth**. — QUAY. — For reconstruction of portion of the east quay at the Western Docks for the Great Western Railway Company. Plans and specification seen, and quantities from the Engineer at North-road, Station, Plymouth.

OCTOBER 31. — **Tywardreath**. — FARMS. — Erection of three farmhouses, three sets of farm buildings, and adaptations of existing buildings, walls and fences. Plans and specifications with Mr. W. H. Hill, County Land Agent, Public Rooms, Truro.

* OCTOBER 31. — **Wokingham**. — COTTAGE HOMES. — The Wokingham Guardians invite tenders for Cottage Homes, Oxford-road. See advertisement in this issue for further particulars.

* NOVEMBER 1. — **Nottingham**. — ADDITIONS, ETC. — The Holborn Guardians invite tenders for alterations, additions, etc., to male and female school-rooms at Workhouse, Western-road. See advertisement in this issue for further particulars.

NOVEMBER 2. — **Bedford**. — HOUSES. — Erection of sixteen houses for the "Cin-Cin" Building Club. Specifications from Mr. T. Edmund Rees, architect, Merthyr Tydfil.

NOVEMBER 2. — **King's Lynn Union**. — ALTERATIONS. — The Guardians of the King's Lynn Union invite tenders for alterations at the isolation ward of the Workhouse. Plans, etc., can be seen at Messrs. Jarvis & Son's, architects, Lynn.

NOVEMBER 2. — **London**. — SCREENS. — Supply and fixing canvas screens to the balconies at Common. Forms of tender and specifications from Mr. F. W. Piper, Clerk to the Guardians Union Offices, St. John's-hill, Wandsworth, S.W.

* NOVEMBER 3. — **Rochester**. — POST-OFFICE. — The Commissioners of H.M. Works and Public Buildings invite tenders for erection of new post office. See advertisement in this issue for further particulars.

NOVEMBER 4. — **Tralee**. — CHAPEL, ETC. — Erection of a new convent and chapel. Plans and specifications seen, and quantities, on deposit of 10, 1s., from the architect, Mr. S. F. Hynes, F.R.I.B.A., 5, South-main, Cork.

NOVEMBER 4. — **Windermere**. — CONVENIENCE. — Construction of a public sanitary convenience at Bowness Bay. Plans, drawings, specification, and general conditions at the office of the Council, Windermere, on deposit of 10, 1s., from Mr. J. T. Bowness, Solicitor, Clerk to the Council, Windermere.

NOVEMBER 4. — **Warranand**. — HOUSES. — Erection of twenty-one houses for the Warranand No. 2 Building Club. Plans and specification from Mr. T. Edmund Rees, architect, Merthyr Tydfil.

* NOVEMBER 6. — **Dartford**. — SCHOOL. — The Kent Education Committee invite tenders for new school at Dartford (Maypole Estate). See advertisement in this issue for further particulars.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
OCK, PREMISES, & GOODWILL or LIME, CEMENT, Etc., MERCHANT.—On the Premises	H. W. Smith	Oct. 24
T, UTENSILS, A STOCK OF ROAD & SEWER CONTRACT, SOUTHWALL.—On the Premises	Henry W. Figg & Son	Oct. 24
ALS, BATTERNS, FORDS, TIMBER, Etc., Great Hall, Winchester House, E.C.	Churchill & Sim	Oct. 25
AND OF BUILDERS AND CONTRACTOR, CITY-ROAD, N.—On the Premises	Henry Holmes & Co.	Oct. 26
C & MCHRY, OF FIBROUS PLASTER MANFR, HAMPTSTEAD, N.W.—On the Premises	Salter, Rex & Co.	Oct. 31
LDING LEASE, OLD STREET, E.C. At the Mart	Reynolds & Esau	Oct. 31
ERHOLD LAND, SPITALFIELDS, LONDON.—At the Mart	Reynolds & Esau	Nov. 3
ERHOLD BUILDING SITES, ACTON, W.—At the Mart	Henry H. Collier & Madge	Nov. 6
ERHOLD BUILDING ESTATE, WASHINGTON.—At the Mart	Moran, Barnes, & Clark	Nov. 21
ERHOLD PROPERTY, CITY OF LONDON.—At the Mart	Debenham, Tewson, Richardson, & Co.	Nov. 21
ERHOLD BUILDING SITE, CITY OF LONDON.—At the Mart	Debenham, Tewson, Richardson, & Co.	Nov. 21
ERHOLD BUILDING SITE, ST. MARKS, BRADFORD, YORKS.—Mechanics' Institute, Bradford	Tyler & Co.	Nov. 28

FOREIGN AND COLONIAL.

New Foundling Hospital, Vienna.

Occupying a site of nearly 58,000 square metres, the new Foundling Hospital of Lower Austria, in Vienna, provides accommodation for 450 children, 285 nurses, and a staff of about 70 persons in addition. There are seven buildings, including two administration blocks, three large blocks for children and nurses, one devoted to kitchens and other offices, and one to the power installation. All the buildings occupied by inmates have well-ventilated basements, ground floor, and two upper stories, and contain, in addition to the wards and apartments reserved for the children, nurses, and attendants, an infirmary, operation theatres, clinical department, and an incubator-room. Steam heating is adopted throughout. The kitchens, laundry, and the disinfection and sterilisation departments occupy one building, also warmed by steam where necessary.

Works in Russia.

The following information is from the report by the British Vice-Consul at Liban (Mr. C. J. Hill) on the trade of that district in 1910, which will shortly be issued:—

Plans for the building of a new theatre have been submitted to a committee, the locality having been decided upon—A new cathedral in memory of the late Emperor Alexander III. is to be built and the site has been chosen. A narrow-gauge railway to a place called Bernaten, some fifteen versts (9 miles) from Liban, is in contemplation. It is proposed to erect villas there, the scenery, pine woods, and beach being the attractions.

Works in Spain.

The *Gaceta* of September 28 notifies that tenders will be received up to October 23 at the offices of the "Junta de Aragon, calle de Don Jaime I, No. 61," Saragossa, for the supply of 2,800 tons of Portland cement required for the reservoir works at La Peña. Although the call for tenders is reserved to Spanish firms, it is stated that, in the event of no award being made, foreign firms may then compete; but preference will still be given to Spanish firms, providing their prices are not more than ten per cent. higher than the lowest foreign tender. The same issue of the *Gaceta* notifies that tenders will be received up to November 27 at the "Secretaría del Ayuntamiento de Barcelona," Barcelona, for the construction of a large city slaughter house and cattle market. A deposit of 100,000 pesetas (about 3,700*l.*) will be required to qualify any tender, to be increased to 500,000 pesetas (about 18,500*l.*) by the successful tenderer. The *Gaceta* of September 29 notifies that tenders will be opened on November 16 at the offices of the "Junta del Común de Regantes," Liria, for the construction of a hydraulic cement water main, 2 metres wide, 1 metre high, and 2,861 metres long, designed to carry water from the San Vicente spring to Arriba. The upset price is put at 55,905 pesetas (about 2,000*l.*), and a deposit of 5 per cent. of this amount will be required to qualify any tender.

Although the two foregoing contracts will doubtless be awarded to Spanish firms, nevertheless the carrying out of the works may involve the purchase of some materials out of Spain.

Hotel and Theatre, Debreczin, Hungary.

The *Zentral-Anzeiger*, Vienna, of October 8, states that a company has been formed in Debreczin, with a capital of 1,000,000 kronen (41,500*l.*), for the erection of an hotel and theatre at Debreczin (Hungary); also that a company, presided over by Dr. Friedrich Parkány, of Budapest, has been formed with a capital of 800,000 kronen (33,500*l.*), for the purpose of building an hotel at Sídók (Hungary).

Labour in Capetown.

We have received the following particulars from the Government Labour Bureau of the state of the labour market in the Cape during August:—

The conditions of employment in the stone-dressing trade are still very good, and employment is readily obtainable for all qualified men belonging to the masons' society who make application. Upwards of eighty granite masons are employed at the New Law Courts, and seven or eight freestone dressers at the channelling building. Cutters of kerb and monumental masons were also fairly busy, and masonry is only fair, very little new work being in hand. Competition is keen for work such as repairs and alterations, but the general prospect for the trade are considered to be good on account of the numerous tenders recently invited.—Painting and decorating is in a very dull condition; work continues to be intermittent and wages low. Many painters are

at present employed as casual labourers.—Fibro-plaster and cement working continues in a dull condition, with no demand for additional hands. A few plasterers are unable to secure employment.—Bricklaying is moderately busy. Regular employment is not, however, readily obtainable, although the present outlook is good in view of the considerable number of plans for new buildings now in preparation.—Shop fitting is fair to good.—As to joinery, with the exception of the box-making section, in which a number of men were working on short time, all branches of this trade were moderately busy. Carpenters in the building trade appeared to be more fully employed than during July, generally in connexion with the execution of minor works and contracts.

PATENTS.

APPLICATIONS PUBLISHED.*

17,067 of 1910.—Henry Harris: Portable stove, also applicable for use as a freighter.
19,315 of 1910.—Sydney Edwin Follett and Albert Arthur Fritchard: Combined door checks and springs, also door checks.
22,161 of 1910.—Edwin Malley and James Robinson: Construction of fire-doors for boilers, ovens, and the like.
22,222 of 1910.—Alexander Asribekoff: Apparatus for sawing logs and the like into planks.
22,769 of 1910.—Gerda Bruneau: Gas burner or stove.
23,000 of 1910.—Thomas Eustace Baralett and the Parkinson Stove Company, Ltd.: Combined gas and water taps and geyzers.
23,435 of 1910.—Frank Goldie Engholm: Reinforcing concrete.
23,698 of 1910.—John Law Garsed: Chimney tops or pots.
25,391 of 1910.—Albert Ernest Pullan: Kitchen and other ranges, stoves, and the like.
25,111 of 1910.—Edwin Greenwood: Paving or building blocks or compositions.
28,515 of 1910.—Joseph Sunlight: Combination living-room and cooking fireplace.
28,622 of 1910.—John Bousfield: Rollers for sliding doors.
443 of 1911.—Thomas William Twyford: Water-closet basins and the like.
664 of 1911.—John Robert Terrington: Fire-grate screens and the like.
4,918 of 1911.—Samuel James Fletcher: Chimneys.
5,230 of 1911.—Harry Bloor: Tile-making machines.
17,573 of 1911.—James Patrick Murnane: Window structures.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

October 2.—By HENRY MAXLEY & SONS.
Barbridge, Cheshire.—Stoke Hall Estate, 383 acres, f. 120,000. 415,160
October 3.—By G. F. BROWN & SONS.
Leicester.—12 and 14, High-st., f. 1, y. 38*l.*
October 9.—By FLOO & SONS.
Kilburn.—Kingsgate-rd., f. g. rents 21*l.* 2*s.*, reversion in 70 and 78 yrs. 450
Meaden-av., f. g. rents 14*l.* 1*s.*, reversion in 74 yrs. 335
Cottingham-rd., f. g. rents 11*l.* 11*s.*, reversion in 81 yrs. 265
Fulham.—Goodson-rd., f. g. rents 7*l.*, reversion in 57 yrs. 170
Canterwell.—Lothian-rd., f. g. 5*l.*, reversion in 58 yrs. 130
Holloway.—7, Magdalen-rd., f. w. 38*l.* 390
By HAROLD GRIFFIN.
Paddington.—12A, Chippendale-rd., ut. 51 yrs., g. 8*l.* 5*s.*, w. 82*l.* 4*s.* 385
65, Elgin-av., ut. 51 yrs., g. 10*l.*, gross rental 92*l.* 380
67, Elgin-av. and 48, Chippendale-rd., ut. 51 yrs., g. 12*l.*, gross rental 133*l.* 4*s.* 990
By SEALE & SEALE.
Oxford, Surrey.—Church Way, building land, 14 acs. f. 1, y. 38*l.* 750
October 10.—By C. GERBER & CO.
Battersea.—25, 27, 60, 62, and 72, Carpenter-st., ut. 60 yrs., g. 21*l.* 10*s.*, w. 130*l.* 415
Norwood.—38, Crowther-rd., ut. 78 yrs., g. 8*l.*, w. 31*l.* 4*s.* 215
163 and 165, Albert-rd., f. p. 215
Norwood.—89, Gipsy-hill, ut. 54 yrs., g. 30*l.* 10*s.*, p. 260
Clapham Common.—106, North-st., ut. 64 yrs., g. 24*l.*, p. 300
By H. HOOKER & CO.
Tottenham.—High-rd., f. g. rents 32*l.* 10*s.*, reversion in 94 yrs. 800
Park-lk., f. g. rents 11*l.*, reversion in 86 yrs. 260
By J. H. MELLESFIELD & SONS.
Orpington, Kent.—Orchard-gr., The Cottage, f. y. 45*l.* 500

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

By DEBENHAM, TEWSON, RICHARDSON, & CO.
Bexhill-on-Sea, Sussex.—Turkey-rd., building land, 17 a. 2 r. 10 p. 20 p. f. 1, y. 38*l.*
October 11.—By BAXTER, PAYNE, & LEPPE.
Shortlands, Kent.—Kingswood-rd., Oakhurst, and 1 a. 0 r. 27 p. f. 1, y. 38*l.*

By EDWIN FOX, BOUSFIELD, BURNSTETTS, & BADDELEY.
Tottenham, Bencoushild-rd., f. g. 6*l.*, reversion in 65 yrs.

October 12.—By C. C. & T. MOORE.
Leytonstone.—26 to 30, Connaught rd., ut. 53 yrs., g. 21*l.*, w. 153*l.* 2*s.*
Clapton.—33, Walsingham-rd., f. y. 29*l.*
Mile End.—34, Grafton-st., ut. 31 yrs., g. 4*l.* 10*s.*, y. 39*l.*

By ALFRED SATTEL & SONS.
Little Thurrock, Essex.—Pasture and arable land, 74 a. 0 r. 16 p. f. 1, y. 38*l.*
West Thurrock, Essex.—High-rd., three cottages, f. w. 31*l.* 4*s.*
Improprietate title rent-charge 27*l.* 3*s.* 6*d.*

By STIMSON & SONS.
Peckham.—41, 43, and 45, Lower Park-rd., f. w. 123*l.* 10*s.*
Waltham.—114, Westmoreland-rd., ut. 41 yrs., g. 4*l.* 5*s.*, w. 83*l.* 4*s.*
Streatham.—129 to 137 (odd), Brockwood-rd., ut. 68 yrs., g. 7*l.*, w. 52*l.*
City-rd. No. 316, ut. 31 yrs., g. 8*l.*, e. 45*l.*

By NEWBORN & SHEPHERD.
Kensish Town.—129 to 137 (odd), Brockwood-rd., ut. 68 yrs., g. 37*l.*, y. 45*l.*
30 and 30A, Highgate-rd., ut. 47 yrs., g. 3*l.* 10*s.*, y. 183*l.*
28 and 30, Fulham-rd., ut. 49 yrs., g. 4*l.* 1*s.* and e. 82*l.*
11 and 13, St. Paul's-cres., ut. 39 yrs., g. 4*l.*, y. 82*l.*
31, Belmont-st., ut. 51½ yrs., g. 61*l.* 10*s.*, y. 38*l.*

Holloway.—154, High-rd. (even), Holloway-rd. (s.), f. y. 243*l.* 10*s.*
Islington.—Cloudesty-st., f. g. rents 170*l.*, ut. 5 yrs., g. 36*l.*
October 13.—By JAMES EVANS & SONS.
Fulham.—The Broadway (Swan Tavern, etc.), f. g. 120*l.*, reversion in 52 yrs.

By ALEX. PHILLIPS.
Willesden.—154, High-rd. (s.), ut. 70 yrs., g. 6*l.*, y. 52*l.*
21, Limore-rd., ut. 82 yrs., g. 7*l.*, y. 40*l.*
Bromsbury.—11, Calcutt-rd., ut. 75 yrs., g. 4*l.* 8*s.*, e. 10*l.*
Kilburn.—25, Birchington-rd., ut. 63 yrs., g. 3*l.*, y. 55*l.*

Contractions used in these lists.—F. g. for freehold ground-rent; l. g. for leasehold ground-rent; r. for reversion; f. for freehold; e. for leasehold; p. for possession; g. for estimated rental; w. for weekly rental; q. for quarterly rental; y. for yearly rental; ut. for unexpired term; p. a. for per annum; yrs. for years; la. for lease; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gds. for gardens; yd. for yard; gr. for garage; b. h. for barnhouse; p. h. for public-house; o. for offices; s. for shops; ch. for court.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to subscribers in any part of the United Kingdom at the prepaid rate of 1*l.* per annum, with delivery by post. To Canada, post-free, 5*l.* 8*s.* per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 5*l.* per annum. Subscriptions payable to J. MORRIS should be addressed to The Publisher of "THE BUILDER," 25, Abchurch-lane, W.C.

PRICES CURRENT OF MATERIALS.

* Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices, and which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.		Picked Stocks for Facings		Per 1000, Delivered at Railway Depot.	
Best Stocks	2 4	2 4	2 4	Flettons	1 10
Best Stocks	1 13	2 7	2 7	Best Fareham	1 10
Picked Stocks for Facings	2 7	2 7	2 7	Best Bed Pressed	3 12 0
				Ruabon Facing	5 0 0
				Best Blue Pressed	5 0 0
				Staffordshire	3 15 0
				Do. Bulhouse	4 0 0
				Best Stourbridge	4 0 0
				Fire Bricks	4 0 0
				GLAZED BRICKS	
				Best White and Ivory Glazed	10 17 6
				Best White and Ivory Glazed	10 17 6
				Quoins, Bull-nose, and Flats	14 7 6
				Dble Strutchers	10 17 6
				One Side and two Ends	17 6
				Two Sides and one End	18 7
				Splays & Squints	15 17
				Best Dipped Slat	10 17
				Glazed Slat	10 17
				Second Quality White and Dipped Slat	21 5
				per 1000 less than best.	
				Thames and Pitt Sand	5 6
				Thames Ballast	5 6
				Best Portland Cement	30 0 per ton
				Best Ground Blue Lias Lime	10 0
				NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.	
				Grey Stone Lime	13 <i>s.</i> 0 <i>d.</i> per yard delivered
				Stourbridge Fireclay in sacks	27 <i>s.</i> 0 <i>d.</i> per ton at rly dep.

BUSHEY HEATH (Herts).—For proposed alterations and additions to St. Peter's Church. Mr. Geo. H. Fellowes Pryme, F.R.I.B.A., architect, 6, Queen Anne's-gate, Westminster, S.W. Quantities by Mr. R. Henry Hale, P.S.I., 6, Queen Anne's-gate, Westminster, S.W.

E. Brown	£7,724 0 0	Walden & Cox	£7,110 0 0
Holland & Hann	7,640 0 0	W.L. Franklin	7,099 0 0
Presley & Co.	7,516 0 0	Sons	7,076 0 0
C. Miskin & Sons	7,845 0 0	G. & J. Waterman	7,024 0 0
R. Wilkins & Sons	7,329 0 0	Bowman & Sons	6,965 10 10
Webster & Cannon	7,305 0 0	J. Honour & Sons	6,797 0 0
J. Longley & Co.	7,246 0 0	W.J. Dickens	6,778 0 0
Goddard & Sons	7,121 0 0	Ealing, W.	6,778 0 0

Conditionally accepted.

CONWAY.—For erection of a residence, for Sir Frederic Colman, K.C.B. Messrs. R. Davies & Son, L.R.I.B.A. architect, Bangor. Quantities by Mr. B. Lomb, Todmorden, Lancashire. £1,505

DOWLAIS.—For erection of school at Pant:—
E. Williams & Sons, 22, Wyndham-street, Dowlais. £3,347

GLANTON.—For alterations and improvements to church and manse. Mr. G. Reavell, jun., architect, Altwick:—

Masons.			
T. Muckle	£212 3 6	T. Johnston & J. Beattie & Son	£140 18 9
E. Fordy	136 14 6	Son, Glanton*	£140 18 9
Joiners.			
J. Straker	£345 0 0	J. Todd	£290 0 0
Dodds Bros.	305 0 0	M. Pringle & Son,	
A. C. Burn & Son	296 0 0	Eglingham*	£283 7 6
Plumbers.			
Reavell Bros.	£41 15 8	Wilken & Dickman, Altwick*	37 19 0
Slaters and Plasterers.			
J. Younger, Glanton*	£49 9 3	T. H. Darling	34 19 0
Painters.			
A. Robertson & Son	£39 9 0	A. Robson, Wooler*	51 0 0

GUILDFORD.—For the extension of ice factory, Walnut Tree-close, Guildford, for Messrs. E. and H. Colebrook. Messrs. Clemence & Moon, architects, Bank-house, Guildford:—

Contract No. 1.—Foundations.	
Higlett & Hammond, Guildford*	£355
Contract No. 2.—Superstructure.	
Tribe & Robinson, Guildford*	£1,520
[Seven tenders received.]	

LONDON.—For twenty-two workshops and new drainage system, etc., in rear of Nos. 15 to 23, Arcola-street, Stoke Newington-road, N., for Mr. T. Mathews. Messrs. Gordon Wilson & Co., architects, 1, Vaughan-avenue, Goldhawk-road, W.:—

J. Thompson & Son	£2,588 10
Heaps, Willard, & Co.	2,661 0
LONDON. For erection of fencing over southern outfall sewer at Crossness, for the London County Council:—	
Hill & Smith, Ltd.	£291 11 0
Bayliss Jones & Bayliss, Ltd.	344 13 1
W. Bain & Co., Ltd.	297 19 0
Rowland Bros.	292 15 0
T. W. Palmer & Co.	301 4 5
A. & J. Mann & Co., Ltd.	260 9 2
J. Ellwell, Ltd., Birmingham*	212 7 3

LONDON.—For supply and delivery of a chain pump for engine-house at Barkins, for the London County Council:—

Thames Ironworks, Shipbuilding and Engineering Co., Ltd.	£312 0
Seagers, Ltd.	294 0
R. Warner & Co. (Engineers), Ltd.	217 10
J. Cockrill, Barnham*	185 0

LONDON.—For widening portion of thoroughfare at Camberwell New-road, for the London County Council:—

E. & H. E. Higgs	£2,230	Rice & Son	£1,930
H. L. Holloway	2,192	H. Lovatt, Ltd.	1,887
F. Rider & Son	2,011	W. Smith & Son	1,836
LONDON.—For the quadrennial survey and overhaul of the s.s. Bazalgette, for the London County Council:—			
R. & H. Green & Silley Weir, Ltd.	£1,569 0		
Fletcher, Son, & Fearnall, Ltd.	1,549 0		
Row's Dry Dock & Engineering Co., Ltd.	1,540 0		
Mills & Knight	1,457 12		
Gleggall Ironworks, Ltd., Millwall	1,157 0		

PUDSEY.—For erection of a weaving shed, for the Waterloo Mill Company, Pudsey. Messrs. Nelson & Birkinshaw, architects, Leeds. Quantities by Messrs. J. Priestley & Sons, Leeds.

Bricklayers and Masons: T. Throp & Son, Horsforth	£686 6 6
Carpenters and Joiners: C. A. Hamley, Farsley*	
Ironfounder: L. Cooper, Leeds*	
Plumber and Glazier: J. Walker, Pudsey*	
Sider: J. Atkinson & Son, Leeds*	
Painter: J. Nicholson, Farsley*	

WESTMINSTER.—For paving of northern portion of Bursleigh-street, for the Westminster City Council:—

	Hard Wood.	Soft Wood.	Strip Pavement.
£ s. d.	£ s. d.	£ s. d.	
Acme Flooring & Paving Co. (1904), Ltd.	294 0 10	235 9 2	257 0 10
W. Griffiths & Co., Ltd.	258 15 10	206 5 10	264 17 6
Improved Wood Paving Co., Ltd.	—	197 9 2	229 16 8
J. Mowlem & Co., Ltd.	322 0 0	256 10 0	—
W. Muirhead & Co., Ltd.	—	308 15 0	346 0 0

SOLIHULL.—For manager's house, Solihull, Warwickshire, for Solihull Gas Company. Messrs. Osborn, Penberton, & White, architects, 40, Bennett's-hill, Birmingham:—

J. Moffat & Sons	£703	T. & G. Perry	£285
F. J. Briley	616	C. Branyan	580
T. & W. Thompson	598	A. R. Gaskin	559
C. Reeve & Sons	595	Bragg Bros., Solihull*	550

[Architect's estimate, £230.]

J. J. ETRIDGE, Jr.
SLATE MERCHANT'S. LTD.

EXPERTS IN
**SLATING,
TILING.**
BEST WORK ONLY.

Telephone 2685 Wall, or write
BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

TOTTEN.—For erection of a drill hall, for Southampton Territorial Force Association. Messrs. Hair & Bucknall, architects, Southampton. Quantities by architects.

Mackintosh Bros.	£1,590	Dyer & Sons	
Stevens & Co.	1,469	A. J. Colbourne	
G. R. Long	1,390	A. E. Jones & Son	
Jenkins & Sons, Ltd.	1,343	F. Creighton	
G. I. Britten	1,328	Tottol	

Recommended for acceptance.

WEYBRIDGE.—For house in Beechwood, Otlands Park. Messrs. Crickmay & Sons, architects, 13, Victoria-street, Westminster, S.W., and Weymouth, Dorset.

Jarman & Co.	£1,950	G. Jarvis	
Gaze & Sons	1,785	E. J. Crocker	
E. Potterton	1,775	H. J. Nicholson	
Drowley & Co.	1,715	Weybridge*	
W. A. Amett	1,660		

Ham Hill Stone, Doulting Stone, Portland Stone.
The Ham Hill and Doulting Stone Co., Ltd. (Incorporating the Ham Hill Stone Co. and G. Truak & Co. The Doulting Stone Co.)
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

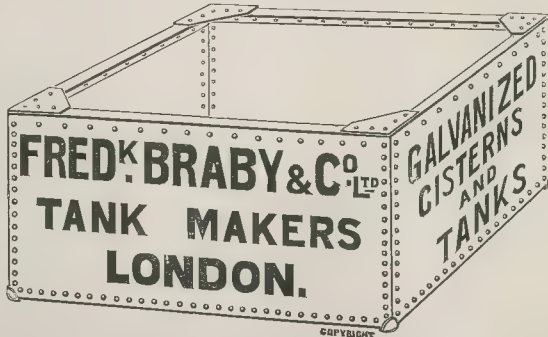
SPEAGUE & CO., Ltd., LITHOGRAPHERS.
Employ a large and efficient Staff especially Bills of Quantities, &c.
4 & 5, East Harding-st., Fetter-lane, E.C.

JOINERY,
of every description and in any kind of wood.
CHAS. E. ORFEUR, LTD.
ESTIMATES ON APPLICATION.
COLNE BANK WORKS.
COLCHESTER.
Telephone: 5186. Telegrams: "Orfeur, Colchester."

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.
Polonceau Asphalte
PATENT ASPHALTE AND FELT ROOFING ACID-RESISTING ASPHALTE.
WHITE SILICA SAND.
SEYSSSEL ASPHALTE (Direct from the Mine)

ALSO AT DEPTFORD,
LIVERPOOL, BRISTOL,



GLASGOW, FALKIRK,
BELFAST, & DUBLIN

Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

VOL. CL—No. 3586.

OCTOBER 27, 1911.

PAGE

MANAGEMENT OF OUR MUSEUMS.....	467
METHOD OF MEASURING THE VITIATION OF AIR.....	468
NINTH INTERNATIONAL CONGRESS OF ARCHITECTS, ROME.....	470
MICROSCOPICAL EXAMINATION OF ARCHITECTURAL MATERIAL (WITH ILLUSTRATIONS).....	471
THE BULGARIAN MONUMENTAL ARCHITECTURE.....	472
THE ARAB ARCHITECTURE.....	473
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	474
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	475
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	476
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	477
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	478
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	479
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	480
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	481
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	482
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	483
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	484
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	485
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	486
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	487
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	488
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	489
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	490
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	491
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	492
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	493
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	494
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	495
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	496
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	497
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	498
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	499
THE ARAB ARCHITECTURE, CHURCHES (WITH ILLUSTRATIONS).....	500

MONTHLY REVIEW OF CIVIC DESIGN:—	
A NOTABLE PARIS IMPROVEMENT (WITH ILLUSTRATIONS).....	181
SCHONBERG, ELKRIC RAILWAY (WITH ILLUSTRATIONS).....	42
NOTES (WITH ILLUSTRATIONS).....	42
THE BUILDING TRADE:—	
THE RAILWAY COMMISSION REPORT.....	428
DUTIES ON LAND VALUERS: REPORT OF COMMISSIONERS.....	483
THE LONDON BUILDERS' ASSOCIATION.....	483
LONDON MASTER BUILDERS' ASSOCIATION.....	483
REINFORCING CONCRETE IN UNDERPINNING (WITH DIAGRAM).....	483
GOVERNMENT CONTRACTS.....	486
GENERAL BUILDING NEWS.....	487
1884 TO 1890.....	487
1890 TO 1899.....	487
PROJECTED NEW BUILDINGS IN THE PROVINCES.....	487
METROPOLITAN AYSLAMS BOARD.....	487
SANITARY PLUMBING.....	487
TEXAS EXHIBITION AWARDS.....	487

PAGE

LEGAL COLUMN	181
LAW REPORTS	189
LONDON COUNCILS	191
TRADE CATALOGUES	192
FOREIGN AND COLONIAL	192
PATENTS	192
SOME RECENT SALES	492
LIST OF "OMPHITIONS," CONTRACTS, ETC., OPEN	493
PRICES CURRENT	494
TENDERS	495

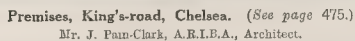
NO. 31, MORTIMER-STREET, W. MESSRS. W. & E. HUNT,
ARCHITECTS.

BUSINESS PREMISES, GRAY'S INN-ROAD. MESSRS.
HART & WATERHOUSE, ARCHITECTS.

BRUGES: LA TOUZE DES HALLES. FROM A DRAWING
BY MR. MALCOLM OSBOURNE, R.E.

PRESBYTERIAN CHURCH, UMBALLA. MR.
JAMES RANSOME, F.R.I.B.A. ARCHITECT.

CHURCH OF ST. JOHN THE BAPTIST, KENSINGTON.
MESSRS. JAMES BROOKS, SON, & ADKINS, ARCHITECTS.



DISCUSSION now in progress in the columns of the *Times* cannot fail to be of interest to all who in any way concerned with the design arrangement of a museum. For the time past it has been only too clear that our great collections fail lamentably in exercising the educational influence that they should.

general public who visit these collections with a vague notion that they will find them amusing and interesting, and make it obvious to the observer, by their listless and aimless air, that their desires in this direction are not being fulfilled.

The system of informal lectures and the somewhat similar one of official guides have been devised to meet this drawback, and are undoubtedly of value. All the same, there is more to be done than this, and it has been widely realised that the objects housed in a museum

should, as far as possible, be made to tell their own story.

We must remember that for the purpose of the student, who, as the real worker, has the best right to consideration, it may be desirable to adopt an arrangement quite different from that suited to the general public. The three bases for possible arrangements are geographical, chronological, and technical, and while these can be combined the whole question resolves itself into which of them is to predominate.

For the student the technical grouping on the basis of craft is unquestionably the one most desirable, while for the untrained public it is quite the least instructive. For them the combination of works of one period and locality, so as to enable them to resuscitate the mode of life in such a place at such a date, conveys much more than the same objects to be viewed separately in a dozen different sections. This aspect of the case has been recognised in Germany as governing the design and arrangement of the museum to a much greater extent than it has with us, and in the German museums it is usual to give a large proportion of the space available to a number of rooms, completely fitted up, made to illustrate in every detail the typical room of a specified district and period.

Nearly all our leading museums have here and there made an attempt to realise something of such a system, but the claims of other methods have limited these efforts.

As a realisation, within one definite period, exceptionally complete in its character and highly provocative of public interest, we may cite the exhibition prepared this year in the Castle of St. Angelo, Rome, in which the rooms were restored as far as possible to the condition in which they existed in the XVIth century.

There can be no question that, if the public only are to be considered, the aim should be to reconstruct all that has survived into a complete picture of the life of the past, using all the components of this picture in their normal relationship to each other, even including wax models for the display of action and costume, such as are to be seen in the groups representing the Indian Tribes in the Museum at Washington.

While the case of Natural History is not exactly on parallel lines, it presents sufficient points of similarity to make the same principles applicable; the chronological element is only present in some branches, the geographical is of definite importance, but we find genus and species replacing the crafts. With these modifications in our initial definitions, much of what has been claimed in regard to the Technical and Ethnological collections applies also to those of the various branches of Natural History.

The conclusion to which we are brought, by examination of the entirely different demands made on a museum by the student and the general public, is that it is surely best to recognise the impossibility of reconciling these demands. If instruction is to be conveyed in a popular form the arrangement employed will not be a convenient one for the student, while if the student alone is to be consulted the public will not be much edified. Now neither claim may be denied, so that we are forced to the conclusion that we should provide what would be in effect two museums.

This view was held by those responsible for the conditions laid down in the recent competition for the National Museum of Wales, though no definite opinion was expressed as to differences of character in the public and students' sections, and the general schedule did not suggest any variation from the type of arrangement usual in this country.

It might be thought that this duplication would materially increase the demand for space, and such an increase would undoubtedly be necessary in the public section if the presentment is to be in the form suggested here. On the other hand, collections for the use of students can take up less room than if they had to be fixed in position and properly seen without the possibility of removal from one place to another.

Again, the general public do not require to see a full and complete collection exhibiting every shade of variation; for them the general impression is the important factor, and a few typical examples of each kind utilised in the groups before referred to are quite adequate. These can even be supplemented with good reproductions, if necessary, more on the lines of the architectural courts at the Crystal Palace, though, of course, not in the rather crude and slap-dash manner there adopted.

The recent enthusiasm for pageantry gives us a hint as to what might be done in popularising the museum; but numerous refinements of arrangement and detail would suggest themselves to anyone making a serious study of this question, and the linking up of the popular and students' departments would give further fruitful sources of interest to the planner. For instance, the students' collections may be arranged over, or under, or around the public collections belonging to the corresponding race and period, while the work of a particular craft, such as the smith, the weaver, or the woodworker (or, in the case of Natural History collections, the genus with its subdivisions), could follow out a line taken horizontally in one direction or another, linking up the various sectional groups.

All these problems are before us, and so far it does not appear as if any really logical attempt has been made to evolve an organic form of museum. Even the possibility or otherwise of such a form is not yet a settled question, and there is ample scope for the architect and the curator of the future to devote their attention to the means we should adopt in obtaining the utmost possible educational value for all classes from our important public collections.

EMPLOYMENT IN THE BUILDING TRADE.

According to the Board of Trade *Labour Gazette*, employment during September was fair on the whole, though not so good as a month ago. It was better than a year ago. Returns received from 1,137 firms employing 59,247 people at the end of September showed that as compared with a month ago there was a decrease in the total number employed by them of 7.2 per cent. in the London district, and of 1.4 per cent. in other districts. Compared with a year ago, there is an increase of 18 per cent. in London, and of 0.7 per cent. in other districts. Bricklayers, masons, painters, plasterers, and labourers showed a decline in employment, compared with a month ago, while carpenters, joiners, and plumbers showed an improvement. The increase common to all branches. The percentage of trade union carpenters and joiners unemployed at the end of September was 22, as compared with 31 a month ago, and 72 a year ago. For plumbers, at the same dates, the percentages were 5, 7.8, and 10.1 respectively. For London, the trade union returns show that the percentage of carpenters and joiners unemployed was 3.3, as compared with 3.6 a month ago and 5.7 a year ago; the corresponding figures for plumbers were 7.9, 10.1, and 8.

NEW METHOD OF MEASURING THE VITIATION OF AIR.

HITHERTO the customary method of gauging the vitiating power of confined air has been to ascertain the proportion of carbon dioxide contained therein, and to express the relative purity of the air in terms of carbon dioxide, pure air being considered to contain four parts of that gas in 10,000 parts of air. This method lacks precision, because the quantity of carbon dioxide indicates the degree of ventilation rather than the degree of vitiating, and it in no way reveals organic impurities which are deleterious constituents.

Granting that pure air is always oxidised and that emanations from the lungs, through the skin of human beings, and animals are all reductent, the measure of the reducing properties of the air should be furnished by numbers directly proportional to the vitiating due to the proportion of foreign substances contained in the air. These being chiefly of organic nature are condensable by means of water vapour.

Based upon these considerations is a new method of measuring the vitiating of air proposed by MM. Henriët and Bouyssi at a recent meeting of Académie des Sciences.

The method comprises three operations:—(1) To collect by condensation a given volume of water vapour from the air to be examined; (2) to measure the corresponding volume of air; (3) to determine the reducing properties of the substance in the water of condensation collected.

For the purpose of condensation the authors employ a cylindro-conical receiver, with the capacity of 3 litres inside which is introduced a similar vessel containing ice and salt. The vapour condensed forms in the outer vessel, and is removed in liquid form, the quantity collected by the authors being always 5 grammes by weight.

The corresponding volume of air is readily computed by the usual rule after the pressure of the mixture of air and vapour and the tension of vapour have been ascertained by the use of an hygrometer and thermometer.

In testing the reducing substance collected the following is the procedure. In a flask of 50 cm³ capacity introduce 5 cm³ of the condensed water, and 10 cm³ of a solution containing per litre 316 mg of potassium permanganate and 425 mg of chromic acid (pure and free from sulphuric acid). Boil for 10 minutes and, after cooling, add 10 cm³ of a solution containing per litre 10 g of ammonium ferrous sulphate, and 10 cm³ of pure sulphuric acid at 66 deg., the liquid then taking a greenish tint. Into it is added by means of a burette a weak solution of potassium permanganate (of 0.05 per cent. concentration of the normal solution containing 158 g per litre) until the appearance of a rose tint. The difference between the reading and the standard reading obtained by repeating the operation without the condensed water gives the quantity of permanganate reduced by the substances occurring in the air under examination. The corresponding weight of oxygen is then deduced, and the results are stated in milligrammes per 100 cubic metres of air.

The following are some results obtained by the authors:—

Source of Air Examined.	Degree of Vitiolion.
Parc Montsouris	1
Quartier de l'Hôtel de Ville	10
Room occupied by guinea-pigs, rabbits, and monkeys	13
Printing works	13
Office, badly ventilated	14
Dark passage, badly ventilated	17
Dressmaker's workroom	21

In the last example the workroom, measuring 104 cubic metres, was occupied by twenty women, and the windows had been kept closed for twenty-four hours exceeding the collection of vapour.

Although the method described cannot be applied so readily as tests for carbon dioxide, it possesses the advantage of indicating directly the influence of noxious constituents in the atmosphere, which can only be guessed at from the results of carbon dioxide tests, and it could be found of considerable value to those engaged in the study of hygienic workshops and other places where healthfulness is a matter of supreme importance.

NOTES.

Indian Art and Archaeology. "East is East, and West is West," especially in art and kindred matters. Mr.

B. Havell, late Principal of the Government School of Art, Calcutta, and the author of several important works on Indian art, is convinced that the Public Works and Educational Departments as now maintained for propagating European architectural ideas and methods of art teaching have been slipping for the last fifty years the foundations of Indian art and architecture." He suggests, therefore, that India would be in it this Department were reduced, and he agrees, of course, with Lord Curzon, to whose reproaches we referred two weeks ago (p. 410), that the termination of the appointment of Mr. J. H. Marshall, Director-General of Archaeology, is greatly to be deplored. The fact is, the importation of European ideas into India has been no more successful in relation to artistic matters here than the similar influence has been in Japanese art. A Western mind is not able to grasp the symbolism of native art, and academic conventions cannot be applied with advantage to the art of the hereditary craftsmen of India. Part of the usefulness of the Archaeological Department lies in the help it gives in directing native talent, the outcome of special traditions; and to minimise its power is to defeat the ends of true progress.

The Crystal Palace. We have considerable sympathy with the object of the representative and influential Conference of public bodies held at the Mansion House on Monday to consider the question of the acquisition of the Crystal Palace and its grounds for the use of the public. The Palace is in itself a structure of considerable interest, which is endeared to countless thousands of people by memories of happy days spent under its glittering roof and within its beautiful precincts; and to know that it was to be pulled down and the

site built upon would cause no little regret to many of us. One of the difficulties, after that of raising the money for the purchase, is to know which of several schemes to adopt for its future management and control, and we hope that the Committee which has been appointed to consider the most practical scheme will be able to prepare one which will be generally acceptable. It is interesting to know that Sir Douglas Fox & Partners have made a careful examination of the Palace building, and they find that, as far as the main structure is concerned—the columns, foundations, and everything—it is good for another sixty, eighty, or 100 years, if put into proper condition.

Changes at the Admiralty. THE shuffling of seats in the Cabinet does not usually possess any special interest for the architect, but the appointment of a new First Lord of the Admiralty opens up an interesting question. We understand that when the new processional arch on the Mall was designed it was the original intention that the buildings on either side should form residences for the First Lord and for the First Sea Lord, respectively. As the building neared completion the First Lord is reported to have expressed his intention of continuing to occupy his present house in Whitehall. Someone, who evidently did not realise that First Lords, being political, are here to-day and gone to-morrow, appears to have given orders that the house should be turned into offices. This apparently was done at some considerable expense, presumably not to the advantage of the building. The interesting question now arises: Will the new First Lord desire to live in the new house provided by an appreciative nation for the custodian of its first line of defence, and, if so, what will be done? Will the alterations be again altered? And will this process be gone through at every change of Ministry or general post in the Cabinet if the new incumbent happens to have different ideas from those of his predecessor as to what constitutes a desirable town residence?

The Architect as "Decorator." MR. FARROW's letter to the *Journal of the Institute* with reference to the lack of any recognition in the Institute examinations of the necessity for adequate knowledge of interior decoration calls attention to a matter of some importance. That architects occasionally lose commissions from ignorance of this subject is no doubt true, but we cannot say that we think it would be to the advantage of architecture if they were all to endeavour to be experts in the Louis XVI., the Adams, the old English, L'Art Nouveau, and the rest of the different styles which make up the stock-in-trade of the "decorator." The decoration of a house should be the outcome, the logical conclusion, of its structure and general character. There are, we think, plenty of architects competent to deal with it in this way, although they could not, and would not if they could, produce such a finished effect in any particular style foreign to their structure as their client might wish and obtain from a firm of decorators. If the Institute took the

matter in hand it would, we believe, strengthen the tendency to treat decoration architecturally. This, however, might not help the architect financially so long as clients look upon decoration as "applied ornament," and prefer to have it in a different style in each separate room of the house.

Wimbledon Common Extension. We feel sure that the appeal issued by the Lord Mayor of London, Dr. Longstaff, and Sir Kenneth Anderson, on behalf of the fund for the extension of Wimbledon Common, will meet with the approval and support of the public. Their appeal makes the point that Wimbledon Common concerns London as a whole; that London benefits by it, but has paid nothing for it; that the Common has been secured and kept up by local residents; and that it is time now that London came to their assistance to help them to secure the land of Kingston Vale before it is too late. We have already dealt with this question in our Monthly Review of Civic Design, in which we pointed out that buildings were rapidly spreading along the new tram route from Wimbledon to Kingston, so enclosing this district in the town area. There is no doubt of the urgency of the question, and that it is one which should receive immediate support. As an old building is often best preserved by finding a use for it, so this district may possibly be most easily secured by making some practical use of it which does not destroy its character. Such a project as a sports centre might enlist the support and the subscriptions of people who are not particularly interested in open spaces, as such, or who think—as the Wandsworth Councillor thought about Streatham Common—that Richmond Park and Wimbledon Common are already large enough.

The Railway Commission. THE findings and recommendations embodied in the Report of the Railway Commission are too voluminous to be discussed here, but it may be remarked that the existing machinery for the settlement of disputes is regarded as inadequate. Various amendments are suggested, procedure modified (in the direction of "speeding up"), and concessions made which should tend to improve an admittedly unsatisfactory state of affairs. In view of the nature of the evidence given at the inquiry, and the tone of the speeches at meetings already held to consider it, it is to be feared that the Report will not be accepted as entirely satisfactory to either side; but if it leads to a better understanding and to more amicable relations between the companies and their employees it will be all to the good. It is noticeable that the remarks in this column at the outset of the strike (as to the futility of industrial bargains in the absence of loyal observance by each side) are fully endorsed by the Commissioners in their Report:—"It is clear that, however satisfactory the machinery may be, however reasonable the settlement, all goes for nothing if a contract once entered into be not loyally observed." We can, with equal readiness, endorse the

Commissioners' conviction that "if railway men will only place the call of duty above and before every other consideration they may confidently rely upon the British public to support them in any fair claim fairly put." The crucial point will be whether or not the new scheme incorporated in the Report will admit of claims being "fairly put" from the point of view of both parties; and it may be regarded as the most hopeful feature of the Report that it has been unanimously agreed to by men thoroughly representative of each side. At the same time, it is already evident that there is a widespread hostility to the Report; and although this attitude may be somewhat modified when its terms are better understood, the outlook is, at present, very disquieting.

LORD ROSEBERY, with a disturbing gift which is his own among our public men, has upset the general and absurd equanimity with which we are apt to regard the accumulation of books both in our national and general libraries. Speaking broadly, we should say that the preservation of books published prior to 1830 (to fix a perfectly arbitrary date) should be maintained, and that those published subsequently should be subjected to a rigorous revision. The respect with which printed matter in book form is usually regarded is altogether out of proportion to its importance. Out of the enormous number of books now published every year the vast majority have no permanent value whatever; indeed, it is scarcely too much to say that a large number of them have no value of any kind. Works of fiction, facile works of travel, biographies, or memoirs published merely for family purposes, might all very well be excluded from collections which aim at any kind of permanence. We do not agree with Mr. Edmund Gosse, whose regard is mainly for belles-lettres, that all possible requirements in the way of a library might be contained "within the drawing-room of a small house in London." Far from it. But we have no hesitation in saying that books of the type which we have indicated are a useless burden to the shelves of any library, whether public or private.

THE NINTH INTERNATIONAL CONGRESS OF ARCHITECTS, ROME.

At the twenty-seventh annual general meeting of the Society of Architects on the 19th inst. the Report of the Society's official delegate at the Congress of Architects in Rome, i.e., Mr. R. G. Lovell, a member of Council of the Society, was presented and adopted. In the course of his Report Mr. Lovell says:—

"I was able to attend the five sessions of the Congress in the Congress Hall and offices adjoining the Castle of S. Angelo. A translation of the subjects discussed and the resolutions carried is appended."

Subject VI.—The desirability of a dictionary of comparative architectural terminology.—This was made clear, and the comprehensive nature of the proposed international dictionary will be realised by referring to the trial sheet herewith. The Congress resolved that the Permanent Committee should undertake this work, and that the text should be supplemented by illustrations.

Subject IV.—Considerations as to modern architecture.—Several papers were read of

widely divergent views; but the expressed and unexpressed opinions of the members were so varied and antagonistic that it was found impossible to formulate any resolution.

Subject III.—The technical and artistic education of the architect and the architect's diploma. The exercise of his profession beyond the limits of his own country.—Considerable interest and excitement was created during the discussion following the paper read by M. Albert Louvet (author of the *Grand Palais des Beaux-Arts*). M. Louvet's views were embodied in five resolutions, the first one being to the effect "that the right to practise architecture should be free in all countries." This appeared to be entirely opposed to all ideas of registration. Neither the paper nor the resolutions had been printed or translated, and the necessity of following the discussion in four languages made it very difficult for the bulk of the members to properly appreciate the importance of this proposal. Your delegate was supported by Mr. W. B. Riley, the delegate of the London County Council, and strenuously opposed any voting being taken that day until members had had an opportunity of properly understanding the resolutions. Although M. Louvet was willing to delete this first resolution, there was a considerable number of members who insisted upon a vote being taken. Fortunately, however, we were able to maintain our objection by a small majority, and the contentious clause was struck out. It will be noted that this resolution did admit of another construction, namely, that an architect should be free to practise his profession beyond the limits of his own country; but the discussion was so involved and the wording so ambiguous, that the British and American contingents considered that it was more prudent to adopt the course we did. During the whole of this very important discussion, which referred principally to the education of an architect, I heard no reference whatever made to the necessity of any form of commercial training!

Extra Subject: Copyright.—The resolutions were passed practically without any discussion. They had been carefully formulated by M. Doumet, the honoured President of the Permanent Committee, M. J. M. Poupinel, the Secretary-General, and M. Georges Harmand, Advocate and member of the Permanent Committee. The work already done in England appears to entirely cover these resolutions.

Subject I.—Reinforced concrete.—Several interesting papers were read, including one by Mr. W. E. Riley, F.R.I.B.A., which was very well received, but it was felt that the study and development of this material from an æsthetic standpoint had not made sufficient progress, and it was decided that the Congress should record no vote on the subject.

Several papers were read on:—**Subject II.—The duties of the architect with regard to his employer.**—A very heated discussion arose when it was urged that under certain conditions an architect should be permitted to accept payments from the builder. Mr. John Slater, B.A., F.R.I.B.A., made it quite clear to the Congress the strong views existing in our country upon this point. There appeared in other countries to be a certain justification for this custom. For instance, it was shown that in Spain the responsibility for the stability of a building was fixed by law upon the builder, consequently it was usual in big buildings for him to employ an architect to protect his interests, while the property owner employed another architect, who was usually responsible for the design and also for the foundations. The discussion brought to light so many varied views that the Congress only voted upon the main issue, namely:—"That the architect should under no pretext receive fees except from his employer." The further study of this important question was referred to the Permanent Committee.

Subject VII.—Foreign academies in Rome.—Although the American, Spanish, and French delegates shortly described the work which their academies were doing (principally that of research), no announcement was made as to the great work for the establishment of a British Academy in Rome. This scheme Mr. J. W. Simpson has been working at for some time, and, although his efforts appear to be on the point of realisation, he considered it more prudent not to imperil the ultimate success of the enterprise by any premature disclosure.

Subject V.—The carrying out of architectural work for the State or other public bodies.—This proved possibly more contentious than any of

the other subjects. The matter had been exhaustively discussed and a decision arrived at at the last International Congress in London. The London resolution was attacked, on the one hand, by those members who desired to have a distinction drawn between the architect and the engineer, and, on the other hand, by those who wished to have a distinction drawn between the official architect and the private architect. The bulk of the British members had considered it wiser to support the resolution of the London Congress, and to ask that a fresh vote should be taken, but, upon it being decided to take a vote, they felt free to follow their individual opinions, and most of them considered that "All public works of a monumental character should be open to public competition, and not be designed by the official architects." A great deal of confusion arose in framing the various resolutions and amendments and in properly translating into the four languages; consequently, in recording the various votes the resulting resolutions are somewhat involved, although they represent what your delegate and the bulk of the British and Americans voted for. The official architects were naturally opposed to the last resolution, and, in the confusion, a protest was lodged with the President, objecting to this resolution on behalf of the British members. I am quite satisfied, however, that the bulk of them did vote and approve, and do now approve, the resolution as it stands at present, namely:—

"That with the object of obtaining monumental buildings embodying all the essentials of art the schemes in all cases must be prepared by qualified architects, and before the work is put in hand the schemes must be submitted to the approbation of an institution such as the Academy des Beaux-Arts, or to Committees, the majority of whose members are architects."

Earthquake Commission.—The resolution asking the Government of Italy to take the initiative in this matter was passed without any discussion.

Next International Conference.—It had been exhaustively discussed by the Permanent Committee and decided that the next Conference should take place at St. Petersburg in 1914. A cordial welcome was promised by the Count de Suzor, the delegate from the Russian Government, to all those who would go. It is suggested that the Conference should take place in the winter during the period of the high season at St. Petersburg. The general meeting of the Congress unanimously confirmed the decision of the Permanent Committee.

We were given to understand that only about 500 members and Associates had inscribed no official list was forthcoming before we left Rome. The British numbered about seventy, and we believe they were the most numerous being closely followed in numbers by the Germans. It is said that many absentees were occasioned by the exaggerated reports of the seriousness of the plague in Italy, and in addition many Roman Catholics declined to attend a Congress held as part of a festival to celebrate the fiftieth anniversary of United Italy and the abolition of the Papal temporal power.

It was evident on all sides that our hosts and *confères*, the Italian architects, did everything in their power to render our stay agreeable and entertaining. Possibly we Britishers were too exacting in requiring the Congress meetings to be of a more formal character. It was repeatedly stated that the London International Congress and the Town Planning Congress were so excellently organised that it made it almost impossible for any other city to approach them. On the other hand, we found that the generous hospitality of our hosts filled up every moment of our time to overflowing, and certainly there appeared to be more to be learnt outside than inside the Congress Hall. I therefore refer to some of the functions that your delegate was privileged to attend.

In his subsequent remarks Mr. Lovell said:—**Commandatore Boni**, who is the curator, and is in charge of the excavations of the Forum, gave an interesting lecture, with slides, on the "Forum of Trajan—the highest development of Roman art." He described his discovery of the grave of Trajan at the base of the column, and the method he had adopted for determining the exact length of the Roman foot, 100 of which represent the height of the column, including the pedestal. This also represented the depth of earth removed from between the Quirinal and Capitoline Hills. Professor Boni has found that 27.702 metres represent the

not length of 100 Roman ft., roughly, 91 English ft., instead of about 97 English ft., previously supposed. Professor Stübben also gave a lecture, with slides, on "Town Planning" similar to the one he gave at the London Town Planning Conference. He described the garden cities of England as the apogee of domestic life, but claimed that in Germany they were doing great advances in the planning of towns.

The Ethnographical Exhibition is a most comprehensive collection of typical buildings from each Italian province, correct in every detail, both inside and out. To an architectural student there is gathered together in the Piazza Armi samples of all the motifs and details of Italy to discover. It is generally admitted that where has better reproductive work been done.

The following is a translation of the resolutions passed and referred to by Mr. Lovell:—
First Meeting, October 4: Subject VI.—The irrefragability of a dictionary of comparative architectural terminology.—The following resolution was passed:—The Congress recognised the desirability of a dictionary of comparative architectural terminology, and resolved that the Permanent International Committee of Architects should organise an international Commission, on whom all continue the work commenced and present work at the next International Congress.

The Congress is of opinion that drawings and sketches should accompany the text in order to make the definitions clear.

Subject IV.—Considerations as to modern architecture.—On this subject the Congress was of opinion that no resolution should be voted.

Second Meeting, October 5: Subject III.—Physical and artistic education of the architect and the architect's diploma. The exercise of his function beyond the limits of his own country.—The Congress carried these resolutions:—

1. That the right to use the title of architect should be reserved to those who have obtained as a result of a proper examination passed by an artistic technical and scientific education.

2. That the title of architect should be held in the same rank as the title Master of Science, Doctor of Medicine, etc.

3. That the schools of architecture may be varied in different countries, while adhering to the same general rules.

4. That students should not be able to enter schools of architecture until after having gained in previous schools the same general culture, or a similar culture, to that which is required in the other professions.

Extra Subject.—Copyright.—The Congress was of opinion, on the one hand, that the provisions on copyright made during the last thirty-four years at the International Congresses of Architects and also at the International Congresses of Literature and Art, notably at Madrid in 1904, at London in 1906, and at Vienna in 1908.

The Congress draws attention, on the other hand, to the progress accomplished during the last thirty-four years in European legislation for the protection of architectural works, notably the Spanish law of 1879, the French law of 1902, the German law of 1907, and the Convention of Bern, 1886, and by the Convention of Berlin of 1908; and the Congress draws attention to the resolution made at the International Art Congress held in Rome April, 1911, when uniform protection was considered legitimate for all works of art, including architecture, during the life of the author at least for fifty years after his death.

The Congress resolved:—

1. That architectural work should be protected in all its artistic aspects.

2. That architectural designs, including the designs of exterior and interior façades, the plans, sections, and elevations, and the decorative details, constitute the first evidence of the thought of the architect and of the architectural work.

3. That the building is only a reproduction, on the ground, of the architectural design.

The Congress confirms the resolution that architectural work and all the designs which compose it, together or separately, also that the construction and all other reproductions, should be in all international laws and conventions be protected during the life of the author and during a minimum period of at least fifty years after his death, in the same manner as all artistic works of painters, sculptors, and others.

Third Meeting, October 7: Subject I.—Reinforced concrete, the mode of using it in different countries, and how it may be applied to great buildings as regards the technical and the decorative point of view.—On this subject the Congress determined to pass no resolution.

Fourth Meeting, October 9: Subject II.—Duties and rights of the architect with regard to his employer.—First resolution: The Congress decided that the architect should under no pretext receive fees except from his employer—State, town, administration or individual.

(2) The Congress decided to refer the further study on this subject to the Permanent Committee.

Subject VII.—Foreign Academies in Rome: Their history, the studies and works of the pupils, their influence in their respective countries.—No resolution was passed.

Fifth Meeting, October 10: Subject V.—The carrying-out of architectural works for the State or other public bodies.—The Congress repeated and confirmed the resolution made in London in 1906. The Congress considered that it was necessary to carefully observe in principle a very clear division between the practice of the art of the architect and that of the engineer, and consequently the following resolutions were passed:—

1. That architectural works intended for the State, municipalities, or other public bodies should only be entrusted to qualified architects after competitions or otherwise.

2. That with the object of obtaining monumental buildings embodying all the essentials of art, the schemes, in all cases, must be prepared by qualified architects, and before the work is put in hand the schemes must be submitted to the approbation of an institution such as the Académie des Beaux-Arts, or to Committees the majority of whose members are architects.

Extra Proposition:—The Congress begs the Government of Italy to take the initiative in the formation of an International Commission of representatives of countries subjected to earthquakes in the following manner:—

(a) To unite all the studies and the works which have been made and are being made in all that concerns earthquakes, and also the stability of buildings in earthquake countries.

(b) To elaborate general regulations and local regulations for constructions to be built in these countries. And to require the representatives of the foreign countries present at the ninth Congress of Architects to ask their respective Governments to create seismic stations where they do not yet exist.

And to ask that the Earthquake Commissions should be composed not only of learned geologists, but of architects and engineers, in order that these Commissions may, by their work, contribute to the technical and artistic solution of the question of stability of the constructions in earthquake countries.

THE MICROSCOPICAL EXAMINATION OF ARCHITECTURAL MATERIAL.

At the second meeting of the Glasgow Architectural Craftsmen's Society, which was held on October 13, the President, Mr. Jas. S. Boyd, being in the chair, a lecture on "The Microscopical Examination of Architectural Material" was delivered by Mr. John S. Glen Primrose, A.G.T.C., A.Inst.M.M., Lecturer on Metallurgy at the Glasgow Technical College.

The speaker said that, during the past decade, perhaps more than in any other, there had been developed the science of examining and paying minute attention to "little things," and in the doing of this a very widespread interest had been taken in practical microscopy. We are beginning to realise how very true it is that things "are not what they seem," and although it is highly problematical if we shall ever be enabled, by even the highest development of ultra-microscopy, to contemplate "the mighty atom," or to watch the migration of "ions," still we get sufficiently near to the proximate composition and structure of things with the high powers now attainable with the microscope and modern lenses that new and vast fields have been opened up to us in a way which was not deemed possible a very short time ago.

For a long time past microscopy has been regarded rather in the light of an agreeable pastime than as a subject capable of yielding any information of practical value, but the science of microscopy had steadily emerged from the systematic examination of almost all material coming under the practical man's purview, until now we find it regarded as almost the last word to be said in the scientific investigation of "something gone wrong," which cannot be elucidated satisfactorily in any other way. This is true, not only of structural and engineering materials from the metallographic point of view, but also of many other substances too numerous to name. Like most other methods of analysis, however, it is not capable of universal application, but, even recognising the limitations which must still be set, its worth is very great in many directions which are not commonly recognised.

The author explained that he did not wish to be understood as desiring to teach the architect or the builder how to set about their business, or insist that they must go through life with a microscope at their elbow, but hoped to demonstrate how often it would help to solve some of their difficulties, not necessarily by their own use of it, but by their understanding the report of a specialist trained in its use. It is perhaps just a little unfortunate that these experts are inclined to follow the lead of most very technical individuals, and use terms and a phraseology which is very like Greek to the person untrained in their particular branch, and thus much which is of real practical service is either lost or overlooked from want of proper comprehension.

Analysis of Stone.

The branch of microscopy with which he was most familiar, had to do with the structures of metals and their alloys, but, before considering this important section now called metallography, he showed some interesting photo-micrographs made at comparatively low magnifications of different varieties of stone and sands, such as are commonly used in building construction.

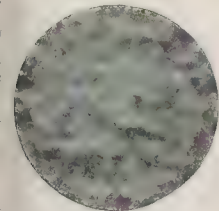


Fig. 1. Polmaise Sandstone. Normal dressed surface. Magnified 30 diameters.

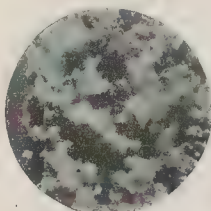


Fig. 2. Polmaise Sandstone. Decayed edge. Magnified 30 diameters.

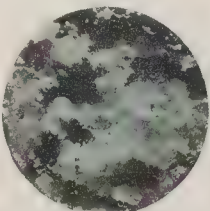


Fig. 3. Polmaise Sandstone. Acid treated. No. 1. Magnified 30 diameters.

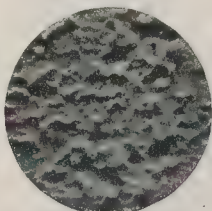


Fig. 4. Portland Stone. Normal dressed surface. Magnified 30 diameters.

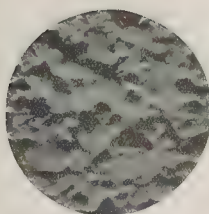


Fig. 5. Portland Stone.
Acid treated.
Magnified 30 diameters.

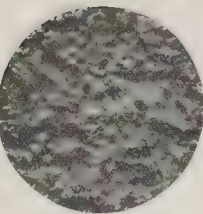


Fig. 6. Closeburn Red Sand-
stone. Normal surface.
Magnified 30 diameters.

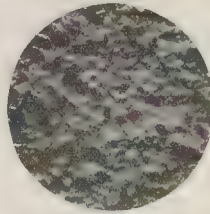


Fig. 7. Closeburn Red Sand-
stone. Acid treated.
Magnified 30 diameters.

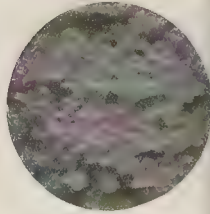


Fig. 8. "Black Pasture" White
Sandstone. Normal surface.
Magnified 30 diameters.

The first investigation was undertaken in conjunction with Mr. Samuel Smith, formerly clerk of works to the College, and dealt with experiments connected with the important point as to the durability of various sand and artificial stones when exposed to town atmosphere, particularly a distinctly acid one, such as obtains in Glasgow and most large manufacturing centres. Fig. 1 shows the surface of a dressed portion of Polmaise sandstone, which is of fairly close texture, and shows clearly the sand particles or aggregate held together in their matrix of binding material, which is of a yellowish shade. Fig. 2 illustrates the appearance of the fractured edge of a piece of this stone, taken from the Glasgow Municipal Buildings, and which has been exposed to the air of the city for a comparative short time. It is evident that the matrix containing over 10 per cent. of carbonates has to a very considerable extent been dissolved or eaten away, leaving the sand grains almost unsupported, and in such a condition that rapid wearing away or surface erosion may take place. This effect is said by some authorities to be due to a large extent to the action of bacteria; but, whilst that may be so in certain cases, it would appear much more probable in this instance to attribute the result to the action of acid from the atmosphere. Proof of this may be drawn from Fig. 3, showing a portion of the freshly-dressed stone after being treated with only a few drops of dilute sulphuric acid, when the same pitting effect due to the dissolving away of the matrix is observable.

Fig. 4 gives the surface micrograph of a piece of Portland stone, which has been polished as well as possible to produce a smooth face, in which there are still cavities large enough to show as black patches under the side or oblique illumination used, the small holes being really out of focus of the microscope objective. Keeping the specimen in position on the stage a few drops of acid were dripped on to the stone, when in a few seconds it was found necessary to refocus the instrument, and the very much altered structure shown in Fig. 5 was observed, evincing what might almost be called the absurdity of using such material in Glasgow, where it is not much used. Both the aggregate and binding matrix in this stone are composed of carbonate of lime, which is readily soluble in dilute acid.

Figs. 6 and 7 show the normal and acid treated surface of the same piece of Closeburn red sandstone, such as was used in the building of the Technical College, and it is remarkable how very closely these resemble

one another. Not only were several drippings of dilute acid placed on the stone, but finally a little warmed acid was tried, and even then no appreciable difference was noticeable. The only other example worth quoting is that of a similar test applied to a sample of a white sandstone, known as the "Black Pasture," from Northumberland, which has recently been used in the construction of two large buildings in Glasgow, viz., the Wellington-street Post Office and the Mitchell Library. This stone also, like the Closeburn, possesses a very high acid resisting power, as shown by the comparison of Figs. 8 and 9. These show very slight difference between the normal smoothed surface in Fig. 8, and the same spot acid treated, as seen in Fig. 9.

Although sands which are used for mortar and other purposes are not commonly examined under the microscope, it is frequently a very useful adjunct to other physical or chemical tests. The chemical analysis would actually in this case seem to be for most practical purposes subordinate to the merely mechanical one of grading, since the less uniform the size and shape of the particles the better they seem to bind and set with the admixed material. Figs. 10 to 13 show interesting comparisons of different types of sand in common use. The sea

sand, Loch sand, such as the Belfast red, usually quite sharp enough, but rather fine and often too clayey. Crushed sandstone shiv is quite a good substitute if the grinding has not been too thorough, in which case the particles are too small and uniform to be much use. The figure giving the average degree of fineness is a very useful thing to know, and is easily ascertained by weighing the portions of a definite quantity of sand left after shaking on a set of sieves. (Multiplying the weight of the particles passing by the number of meshes per linear inch, and dividing the total by the weight of material taken, the average of the grades is expressed as a percentage. Extremely fine sands show a value from 100 to eighty-five, good medium sands from eighty-five to seventy, coarse sands from seventy to fifty-five, and extra coarse material from thirty to fifty-five.)

The following table shows an interesting comparison of the four types of sands mentioned above, and it will be seen that the weight of any particles large enough to remain in the twenty-mesh sieve is added in direct proportion to the weight of sand lost in sieving is added to the weight of sand passed through the sixty-mesh sieve. It is of value to note the proportions of the total weight left on each sieve:—

Grade of Sand.	Sea.	Clyde River.	Silver.	Belfast Lough.
Not through 20 mesh	10 = 1	14.2 = 14	0.4 = 1	1.6 = 2
Through 20 mesh	10.5 = 210	40.5 = 810	9.7 = 194	0.5 = 130
Through 40 mesh	35.2 = 1,168	29.0 = 1,180	25.0 = 1,000	3.5 = 140
Through 60 mesh	40.0 = 2,160	8.1 = 504	29.2 = 1,732	4.0 = 240
Through 80 mesh	9.3 = 744	2.1 = 168	9.2 = 736	2.6 = 208
Through 100 mesh	5.0 = 500	4.3 = 490	25.5 = 2,550	81.0 = 8,100
Lost (<60)	1.0 = 60	1.5 = 90	1.0 = 60	0.8 = 48
	100	5,323	100.0	8,868
Average degree of fineness	= 53	32	= 63	= 80

sand, even when perfectly clean, which is not often the case, does not show the needed "sharpness" to give it strong binding powers, as most of the particles are water-worn and more or less rounded at the edges and corners. Silica sand is better in this respect, and is especially free from clayey particles, whilst most of the grains are extremely angular; it is sold as silver sand, but ordinarily it is too expensive. River sand, as shown in the sample taken from the Clyde, does not contain much mud or clay, and the grains are only moderately rounded, but, as a rule, the average fineness got on grading is low, indicating that it is an extra coarse

Now that cements are so largely used in various types of building, the ordinary testing is judged incomplete without a microscopic analysis of the material at various stages of its setting, and some of the recent books on the subject of testing cements have published photomicrographs for guidance of those interested in the matter practically. The microscope has been valuable in bearing out the latest chemical conclusions that the setting and hardening involve changes, the principal products of which are not due to a crystallising reaction, but to colloidal action brought about by the formation of various "sols" and "gels,"

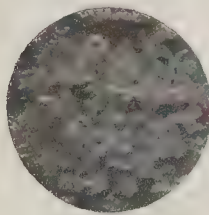


Fig. 9. "Black Pasture" White Stone. Acid treated.
Magnified 30 diameters.

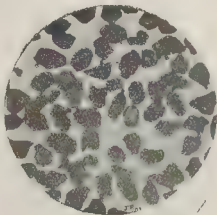


Fig. 10. Sea Sand. Showing uniform grade through 60 mesh with few fine grains.
Magnified 21 diameters.

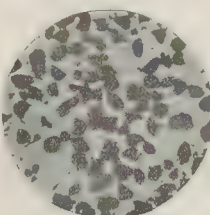


Fig. 11. Clyde River Sand. Showing less rounded particles than sea sand.
Magnified 120 diameters.

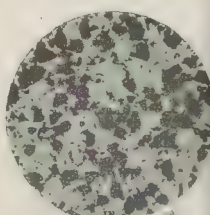


Fig. 12. Silica or "Silver" Sand. Showing very angular grains and good proportion of finer particles.
Magnified 30 diameters.

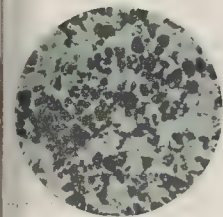


Fig. 13. Belfast Lough Sand. Showing sharp particles, but too many fine particles.

Magnified 20 diameters.

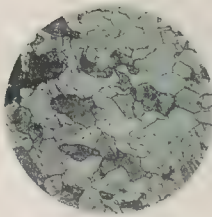


Fig. 14. Pure Iron "Ferrite" in Swedish charcoal iron, showing well oriented crystallites.

Magnified 50 diameters.

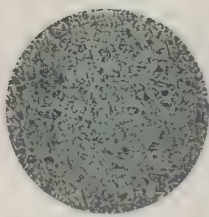


Fig. 15. Mild Steel as Cast, showing "Pearlite" (black) and "Ferrite" (white).

Magnified 50 diameters.

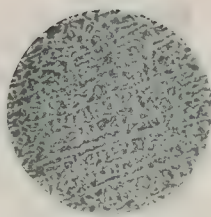


Fig. 16. Mild Steel as Rolled, showing arrangement of the "Ferrite" (white) and "Pearlite" (black) by mechanical treatment.

Magnified 50 diameters.

are termed, and which can be recognised by the microscope. From the foregoing evidence it will be clear that, although the microscope cannot replace chemical analysis of a substance, it is of great service in showing up how the substances present are arranged in the mass, and is of great service where the structure is in any way patchy or not uniform, which is often the case.

The Structure of Metals and Alloys.

It is, however, when we come to examine the internal structure of metals and alloys that the microscope gives us most valuable evidence, since not only can it be made to show the arrangement of the constituents, as they occur in the solidified condition, but in practice it can also furnish a fairly accurate idea of the life history and heat treatment of the metal, also to a great extent its fitness or unfitness for any specific purpose. Correct thermal treatment like wrong or too early mechanical treatment is quite simple to detect, and even in some cases the structure reveals wrong chemical composition, particularly if some of the compounds formed are such that they segregate badly into patches, which thus cause weakness. Cast iron and steel, like most other alloys, are of a comparatively complex structure, since, the solidification goes on, one constituent (usually a solid solution) separates or freezes out gradually into crystallites, leaving the still molten portion enriched in a second constituent, which solidifies in the interstices and the first in the form of a "eutectic" solidified mother liquor, which has the lowest melting point of the series. This "eutectic" is not a chemical compound, though it may have a definite composition, it is itself a mixture of two constituents, which by chemical compounds, very intimately mixed and usually arranged more or less alternately in alternate layers, which are readily recognised under the microscope. Several lantern slides were shown to illustrate the occurrence and structure of different eutectics.

The lecturer briefly detailed the methods of cutting and preparing a metal section for microscopic examination, pointing out that must be free from scratches and then etched for a few seconds in a very dilute (1 per cent.) solution of nitric acid in alcohol. The illumination most frequently employed is oblique, a small reflector being used to direct light vertically on to the specimen on the stage of the microscope. The chief micro-physical constituents were shown to be ferrite, shown in Fig. 14, which is the ground mass of Swedish charcoal iron, wrought-iron, and most of the very mild steels used in structural and structural work. Pearlite was shown as the portions containing the combined carbon, and the modes of its occurrence were illustrated to account for the varying strength of the material. Figs. 15 and 16 show it in mild steel as cast, and also as rolled. The carbon in cast iron is often to a large extent uncombined, having separated out in thin flakes of graphite.

Significance to Architects.

It is not often that an architect is called on to make an investigation of a serious failure occurring in structural material, but, as must often be interested in the result, some slight familiarity with the appearance of

various types of micro structures is serviceable in enabling him to follow with a fuller degree of comprehension the specialised reports often submitted along with the results of a complete investigation. Several examples coming under the author's notice were described and illustrated by lantern slides, amongst others being the case of a wrought-iron angle bar which, through failure, was the cause of a fatal accident a few years ago. The fractured edge of the metal showed a portion not far from the bend in which the crystal formation was noticeably different from the rest, even to the naked eye. Under the microscope the cross section of the metal at this point showed a distinct streak of a highly phosphoric portion. The quality of the metal was not called into question in the inquiry, but apart from the analysis showing too high a percentage of phosphorus, the micro-structure clearly indicated that it was a piece of metal quite unsuited for the purpose to which it had been put. Another instance of the failure of wrought-iron was shown to be due to a considerable proportion of combined carbon having been left in an elongated layer through the metal, thus causing it to be brittle at the point.

Mild steel, such as that used for constructional purposes, is chiefly faulty in respect of either blowholes left from the casting and not completely welded up in the process of rolling, or in having impurities left on account of an insufficient amount of metal having been removed from the top end of the ingot by cropping. These inclusions become considerably elongated in the direction of the rolling, thus weakening the structure very much and giving the metal a tendency to tear or split along such cracks.

A recent case of a roof girder which gave way with serious results was blamed on a defective portion of the metal, but the microscopic examination clearly showed the metal to be sound enough originally, but very badly corroded at the point of failure, due to insufficient care in applying protective coatings. It is not at all frequent to find mild steel in an "overheated" brittle state, but excessive cold working, such as hammering in riveting, occasionally sets up a serious form of brittleness due to the deformation and partial destruction of the crystalline formation. The microscope readily reveals this, and is also able to show how even a slight annealing removes this dangerous state of strain.

Metal which has been subjected to a large number of alternations of stress frequently fails in an alarming manner, and as the fracture shows large facets, the fault is usually put down to the metal having become crystalline. As a matter of fact, it is really the breaking down of the internal crystalline structure which has caused the destruction of the piece of metal due to fatigue, which is brought about by the development of a large number of "slip-bands" usually starting at the outside and working their way in through the metal by the minute quantity of debris formed setting up a grinding action. The cure for this disease in the metal is to allow periods of rest for recovery by renewed growth of the crystals, which effect can be got much more quickly by a short annealing to the correct temperature, but this is only of use if the slip-bands have not got to the stage of forming debris, after which nothing short of remelting puts the metal right again.

As phosphorus is very frequently present

in foundry irons, its influence must be watched in instances where cast-iron is employed for columns or supports. It may enable the iron to withstand a considerable amount of steady pressure, and yet fail utterly if it receives the slightest rough usage. The size and arrangement of the separated flakes of graphite is very important in this same connexion, and instances have been known where too slowly-cooled cast-iron has failed through the flakes being larger than was compatible with the strength requisite for the position in which it was used.

The heat treatment of cast-iron is not often resorted to, except in the case of white iron, which has to be annealed in order to make it malleable for certain purposes. One remarkable instance of the failure of some brackets was investigated by the author, showing that they had been incompletely annealed, thus leaving a considerable portion of the original structure of white iron which was distinctly brittle.

The examination of failures is not the chief use of a microscopical investigation, since in many instances it is capable of being used as a check against the employing of faulty material. This mode of examination is coming to be largely used, not so much in the way of applying more stringent specifications, as in detecting where causes of failure are due to unfair duty having been put upon the metal, which is unfortunately very often the case, or to the use of material which is unsuited to the purpose for which it is introduced. It is only in quite a small proportion of cases that investigations have shown defects arising from inherent weakness or bad manufacture.

In the discussion which followed it was asked if the lecturer could give a decided opinion on the bacteria theory for the decay of stone, or account for the fact that Portland stone stood well in London, especially in old buildings. He was asked to account for the large amount of sulphuric acid occurring in the air of manufacturing cities.

Mr. Primrose, in reply, stated that, although not a bacteriologist, he deemed it highly improbable that any form of microbe could be found to exist in a stone which was exposed to the atmosphere of cities on account of the acid solution which was formed on the surface and permeated the mass. The strength of the solution might at first be very weak, but as it dried, the acid would become stronger, eventually dissolving out the matrix or binding material if it contained much carbonate. The Portland stone which seemed to stand best in the London buildings was that which had been employed in a seasoned condition, or had been erected long enough ago to get a surface skin before the air became even occasionally acid enough to attack it. It was a well-known fact that the amount of acid in the London atmosphere was much less than that usually found in the Glasgow air. The formation of the sulphuric acid was due to the fact that all coal contains a small quantity of sulphur, and when burned this produces the gas known as sulphur dioxide. On coming in contact with moisture in the atmosphere this dissolves readily, forming the unstable sulphurous acid, which in presence of the oxygen in the atmosphere was soon converted into the strongly corrosive sulphuric acid form. The effect of fuming was to form a surface protective, but those



Houses, Blyth: Entrances.
Mr. Edward Cratney, Architect.

stones which contained only small proportions of carbonates, and held, in addition, a small amount of natural alkalies, would perhaps be found best able to withstand the action of city atmospheres.

NOTE.—With reference to the accompanying illustrations, the sandstones are photographed under oblique illumination, the sands by transmitted light, and the metal surfaces by vertical illumination.

HOUSES, BLYTH.

IN our issue of January 6 last, p. 26, we illustrated Mr. Edward Cratney's designs for a pair of semidetached villas in brick and rough-cast. On this page are shown views of the houses in their finished state.

LANDSCAPE ARCHITECTURE.

A LECTURE ON "Landscape Architecture" was recently delivered by Mr. Thos. H. Mawson, Hon. A.R.I.B.A., before the Gloucestershire Architectural Association.

In the course of his lecture Mr. Mawson said—

"That we have lost that fine sense of spacious planning which has given to us modern Edinburgh and so many London squares few will deny. Nor will the travelled man or woman deny also that, whilst we are becoming less spacious in our ways and more trivial in our planning, more individualistic and less communistic in our architecture, other countries are learning the restraint which ever characterises the highest art.

It may be well to offer an explanation for this disparity between our own conditions and those which obtain abroad. It is simply this: that in England when a man acquires wealth he seeks the country and the distractions of sport.

Abroad, as a man acquires education he draws nearer the heart of the city, where he finds art, music, literature, and those other refreshments of the mind which are necessary to his intellectual life. The student of landscape architecture finds that the wealthy Englishman and the educated foreigner both demand beautiful surroundings. The Englishman has his country seat, fine gardens, and expansive domain wherein to take his pleasure. Abroad, the man seeks the city and combines with others in providing beautiful parks and gardens for the use of all and free to all.

As usually understood, landscape architecture conjures up to the mind a slight and partial infusion of colour, neatness, and prettiness into the domain of nature or the surroundings of our homes. Whether these scenes are romantic or commonplace, it conveys no more to the mind than dressed-up improvements. Others, again, think of it as a happy field of *laissez-faire* in which there is no constructive beauty. To them landscape architecture is not an art, but something to play with, which may be taken up or dropped at will. How wrong this is we will seek to show.

The successful landscape architect must not only be able to build up in his mind's eye the whole of the buildings, roads, parks, garden ornaments, and utilitaria into one harmonious comprehensive scheme of which he is able to pre-judge the effect, but must have that intimate practical knowledge which will ensure giving full effect to his dream.

To do this successfully the landscape architect has not only to study architecture in the round, but he must also have a keen appreciation of natural objects and features, and possess the power to weave the natural and the artificial together without discord. This generally conceded to the art in its relation to domestic architecture, and very few architects would nowadays undertake the design of country domain without consulting the man who has schooled himself in these large problems of landscape and garden composition. To this extent we may say the art is recognised in England. How does it stand in relation to town development? Surely, if anything, it is where the landscape architect is absolutely essential.

In both America and Canada the profession of landscape architecture is gaining, and must continue to gain, in public appreciation. The reason for the greater advance made in the profession in America than here is threefold. First, we have the fact that it is a comparatively new country, which is not only less hidebound by tradition and precedent, but one which, by its rapid growth, provides many more opportunities for the effective application of co-ordinated architecture; and, secondly, the absurd pretensions of persons in England, totally unqualified to fulfil its duties, in whose hands many splendid opportunities have been thrown away, thus the minds of those who are capable of estimating the worth of the occasion are filled with a disgust of the whole profession. Lastly, and by no means least, we have in the most unfortunate etymological significance of the term "landscape architecture," which suggests to many persons in this country with unwarranted interference in the realm of nature or a childish attempt to introduce into our towns by little patches of futile gardening. If it were not that the modern significance of the expression is clearly understood both in America and on the continent, and that its use has become general and more or less unalterable, one would be tempted to advise the adoption of some other term which would, by its construction as well as its application, describe and designate the "architect co-ordinator" who



Houses, Blyth: South Front.
Mr. Edward Cratney, Architect.

vince it is to arrange on an effective plan
attached and detached architectural units.
To avoid a misunderstanding, a line of dis-
cussion should be drawn between garden
design, whether called "garden architecture"
or "landscape gardening," on the one hand,
and "landscape architecture" as the term is
understood in America. The first relates, for
the most part, to the creation of those private
gardens of which Englishmen have every-
where been so proud; while the latter, though
it includes the architecture of gardens, has
yet to do with works of a public nature,
including the planning of cities.
It is characteristic of the attitude of the
profession generally to the profession in this country
that in America that, while here few people
wadays venture to lay out a private garden
without professional advice, the municipality
prefers the amateur to the professional
for its undertakings. Abroad, so great is the
importance attached to the art that schools
are not only splendidly equipped, but are
increasing in number. So determined are
Americans to extract the best that the work
can show that they send their professors on
expeditions to Europe to study classic examples
of landscape architecture at first hand, and to
collect whatever literature, ancient and modern,
is to be got together for the use of the students.
Here, however, we are differently placed, for,
withstanding the excellent curriculum pro-
vided by the Liverpool School of Civic Design,
which in many respects is unique, it may yet
truly be said that we are still without a school
where the essentials of the art of landscape
architecture as applied to civic betterment may
be studied.
This brings us to the question, What are the
essentials of the art? And what is the equip-
ment, theoretical and practical, necessary for
practice? First, it may be emphatically
stated that the pupil must start with a liberal
education so that he may be able to exercise
tact, catholicity of tastes, power of association,
and a love of orderly progression and logical
sequence which can only be gained by imbibing
the spirit at least of the classics. On this
foundation must be built a knowledge in the
ground, and sympathetic interest in all the
various branches of architecture, so that he
may be able to meet and sympathise with the
specialist in each branch of the profession,
whether domestic, ecclesiastical, commercial,
municipal, or otherwise.
He is to befit himself to design parks,
residential, and control natural reserves and park-
lands in a way that accords perfectly with the
surroundings—that is, his design is not to be
any sense of the word disjointed, as most of
our English civic parks seem to be. To this
end must be added, or it must be projected upon, a
study of sociology, engineering and architecture,
horticulture and arboriculture, which
kinds, broadly speaking, the full subject of
urban planning, which is in the American mind
incorporated in the term, landscape architect.
He must previously have had an expert
training in surveying in all its branches,
including the modern rapid methods of tach-
ymetric contouring, and must understand the
geologic and other influences which go to make
the different local conditions and the formation
of the various soils to be encountered.
There are other minor affiliated branches
incorporated with these in the Liverpool School
of Civic Design; such as the legal aspects of
urban planning (seeing that we are more bound
by precedent than the newer country), but,
broadly speaking, apart from these national or
local differences, we are at last following the
ways of our countries, although we prefer to
let the art by another name.
For the practice of landscape architecture,
however, much more than this is needed, for,
like other practitioners, the work of the land-
scape architect in city development is not so
much the design and erection of units as the
control and composition of extended areas, and
the harmonising of a multiplicity of features,
natural and artificial; the first differing in scale
and bulk from year to year, and the second
constant and abiding. These features must be
manipulated, with a sound practical knowl-
edge of probabilities in the case of the less stable
factors, so as to make at all periods in their
development a stately or picturesque whole.
Again, while in other branches of architecture
study of linear perspective so far as it relates to
the portrayal of individual buildings or groups
of buildings is necessary in landscape architec-
ture, the fully-equipped practitioner must be

able to make bird's-eye views of the whole city,
not, indeed, with the architect's close attention
to detail, but in order to show a masterly group
of broad areas in mass. Even this does not
exhaust the list of the more obvious essentials of
this branch of the profession of architecture, for
the student must also attain an educated "sense
of locality" which will enable him to grasp the
practical and aesthetic possibilities of the site,
to build up in his mind's eye a picture of the
city to be, and, above all, to present his con-
ceptions to others graphically and pictorially in
such a manner that they, too, may participate in
his vision and become fired with this enthusiasm.
This is a standard of attainment which cannot
be reached either by way of the American School
of Civic Design, even if the student shows a
natural aptitude in these departments, for it
needs the best teaching of each, supplemented
by outdoor studies. This combined course of
study and preparation may not be necessary for
the architect in general practice, on the one hand,
or the landscape gardener on the other; it is, how-
ever, necessary for the practice of city planning.
Drawing a comparison between the profes-
sional standpoint in England and America
on this subject, it may be said, while the English
architect too often imagines that what really
matters is a knowledge of architecture, such as
is demanded under the examination scheme
of the Royal Institute of British Architects
as a sufficient training for the man who designs
both cities and gardens, the professors of land-
scape architecture in America, with equal
sincerity, hold that an expert knowledge of
scientific surveying and contouring, botany,
arboriculture, traffic problems, and a proficiency
in draughtsmanship are sufficient for successful
city planning, and therefore neglect the study
of architecture. In both cases the outlook is too
restricted.
This brief and very incomplete examination
of the necessary equipment of the landscape
architect will show that there is pressing need
for the formation of some association, not
necessarily composed entirely of professional
men, for the study and promotion of landscape
architecture. Assuming for the moment that
we are agreed that a special training is necessary
and the profession an important one, can we find
a sufficient number of men willing to give up
at least six years to academic studies, and have
we the means of imparting the necessary
training? The answer is emphatically, Yes!
But the lack of organisation and co-ordination
so characteristic of our British methods do not
make for the effective collaboration so necessary
if we are to frame any project on the lines
sketched out, and if we are to utilise what at
present exists.
In a country where the practical instruction
counts for so much it may be asked, What are
the prospects? Of course, all admit that the
profession is a delightful one, but what are the
material prospects? We do not know; but
never was a call of service stronger or the need
for missionary zeal more pressing. Our hearthens
are at our doors. Nay, in this cathedral city
of Gloucester, with its rookeries and sordid
squallor, you need awakening to civic con-
sciousness, to the value of your glorious posses-
sions, and equally to the range of your oppor-
tunities to the need of pleasant boulevards,
green spaces, of the restoration of your river
banks, so that your citizens may take the
leisure uninterrupted by those constant
reminders of industrialism from which we all
seek to flee.
Civic art is so utilitarian in its purpose to be
civic first and art afterwards, and yet to love
our city we must make it lovely. This can
only be done by awakening in the soul of the
citizen that high desire for civic art which has
so long lain dormant. This dormant pride can
only be aroused by setting before the people a
tangible vision of what their city is capable of
becoming. The dream of what one's city should
be, and may be, and even some day must be,
will be a special inspiration to those professions
of the fine art upon which the beauty of the
city ultimately depends. It is the work of the
landscape architect to present this dream in its
most alluring form.
Mr. Mawson then showed a number of
extremely interesting lantern slides, among
which were a fine series illustrating his scheme
for the improvement of Bolton; and a charming
set of photographs showing the laying-out of
large private gardens carried out by the lecturer.
A short discussion followed, and a hearty
vote of thanks was accorded Mr. Mawson for his
scholarly and fascinating lecture.

NOS. 81 TO 95, KING'S-ROAD,
CHELSEA.

THESE shops, of which an illustration
appears on our front page this week,
have been built for the freeholder, Mr.
Charles Pettitward, to replace eight old
shops, which were worn out and have
been pulled down. The old irregular line
of frontage has been straightened up, and
a strip of land 5 ft. wide has been thrown
into the road to widen it at this point by
arrangement with the London County Council.
The buildings comprise seven shops, with
living accommodation over for the tenants,
and a motor garage, with workshops, lock-ups,
and office accommodation over. An attempt
has been made to combine the eight shops
into an individual block instead of treating
them as separate buildings.
The fronts are constructed with brown
salt-glazed facings and cream and brown
vitreous salt-glazed terra-cotta supplied by
the Burnmantoffs Company. The contractors
for the work are Messrs. L. H. & R. Roberts,
of Islington, and the architect is Mr. J. Pain-
Clark, of Gray's Inn.

ARCHITECTURAL SOCIETIES.

Nottingham Architectural Society.

The opening meeting of the winter session
of this Society was held at the Society's
Room in St. James's-street on Tuesday.
A letter was read from the Nottingham
Building Trade Employers relative to
"specialists" in contracts, which was
deferred to a future meeting for full
discussion.
Messrs. A. Hendy and W. Shepherd were
elected members and Messrs. C. F. W. Hasle-
dine, T. H. Waumsley, N. H. Pratt, and J.
Warburton were elected Associates of the
Society.
After light refreshments had been served,
the members adjourned to the lecture-room,
where Mr. Harry Gill, M.S.A., a member of
the Council, gave an interesting lecture
entitled "Holiday Rambles in Norfolk."
The lecture was illustrated by a number
of his own lantern views of the buildings
and churches in Norwich, King's Lynn,
Cromer, and the small villages in "Poppy
Land." The lecturer pointed out the special
architectural features of each view, and gave
much useful and interesting information.
The President and Vice-President expressed
the thanks of those present to Mr. Gill.

ARCHAEOLOGICAL SOCIETIES.

Royal Archeological Institute: Art and
History in Westminster Abbey.

An autumn meeting of the Royal Archaeo-
logical Institute of Great Britain and Ireland
was held at Westminster Abbey on the
20 inst., by permission of the Dean of West-
minster. The gathering was under the direc-
tion of Mr. W. H. St. John Hope, and its
purpose was to complete the examination of
the mediæval monuments and furniture.
Sir Henry Howarth said that those awful
fellows, the architects at the beginning of the
Gothic period, thought that everything should
be swept away with the exception of what
was Gothic, but in the Abbey they had a
place where the whole history of sculpture
right down to the latest times could be traced,
a great museum of English art and history
combined, such as was not to be seen any-
where else.
Mr. St. John Hope, by the aid of a plan,
described the mediæval arrangement and use
of the Abbey Church down to 1540. Many
of the mediæval monuments, he said, had
been stowed away into corners to make way
for tasteless piles of marble sculpture. The
Abbey Church was attached more or less to
the Palace; no one had any parochial rights
in it, and when the Abbot claimed the body
of Henry V., who had died at Windsor, it was
because the King was their sole parishioner.
In the middle of the church was the chapel
of the monks, perfectly self-contained, where
they sang the services. At the west end was
a substantial screen, and beyond that, in the
nave, a number of altars. A platform called
the Lower Pavement occupied the whole of
the crossing in the choir between the four

great piers, on which stood another altar, and at times an enormous seven-branched candlestick of bronze, the result of the Judaizing movement of the XIIth century, by which many church ornaments were based on those of the temple. The beautiful mosaic pavement in front of the altar was the work of Abbot Ware, who secured many of the pieces of stone from Italy. The history of the pavement was told in letters of brass, but every one of these had now disappeared. Near by was the Royal pew in which the King sat when he was minded to come from the Palace to hear a service. Mr. Hope also spoke of the extraordinary merit of the early monuments. There was more mosaic work to be seen there than in any other church north of the Alps. The Abbey also contained several examples of heraldic art from 1250 to about 1500, when heraldry fell into decay.

The company then passed into the Abbey. In the nave Mr. St. John Hope explained the heraldry of the carved shields in the spandrels, dating from the XIIIth century, but he regretted that everything was mouldering on account of the London atmosphere.

The party then divided into three groups, and under the several guidance of Mr. Hope, Mr. Peers and Mr. Prior visited the various chapels in the Abbey. Mr. Prior described the Chapel of Henry V. as the apotheosis of chivalry, exhibiting the pride of place, of one who lived his life in a pageant that was not at an end on his death. The Chapel of Henry VII. was described by Mr. Hope, who said that he would argue that the beautiful screen was part of the work of a tomb intended for Windsor, on which considerable sums were spent. Within the screen was a tomb, which had been broken up and replaced by the present one. Although the latter was of Italian workmanship, there were certain English features about it.

The afternoon meeting was held in the Jerusalem Chamber, where Professor W. R. Lethaby, Architect Superintendent of the Abbey, read a paper on "The Confessor's Shrine." The shrine consisted, he said, of a gable-roofed coffin, covered with plates, arcades, and figures, all of gold, set with precious stones. Matthew Paris recorded in 1241 that Henry III. caused a shrine of pure gold and precious stones to be set up; probably it was begun at this time, but it was not completed for full thirty years. The King's favourite man of affairs was Odo, the goldsmith, and from the Abbey documents they might conclude that the shrine was the work of Odo and his son Edward, of Westminster. The marble and mosaic basement on which the coffin rested still remained, one of a number of examples of the Roman mosaic worker. An inscription on the presbytery pavement showed that it was laid down in the year 1268 by Odericus from Rome, and a similar inscription on the shrine basement recorded that it was the work of Peter, citizen of Rome, in 1279. He compared the tomb with that of Pope Clement IV. at Viterbo, and said that the best reading of the facts would be that Oderic and his sons were the most famous mosaic workers in Rome, that Henry III., advised by the Pope, attracted the father to Westminster, that the Pope himself died in the year that the presbytery pavement was finished by Oderic, and his son Pietro Oderic made the Papal tomb. Possibly he had been with his father, and was called back to Rome. Later, when the Pope's tomb was done, Peter came to Westminster to execute the Confessor's Shrine. He had compared the shrine base at Westminster with photographs of the Viterbo tomb, and the similarity between them proved, in his opinion, that they were by the same master. They might accept it as proved that the shrine case and Henry III.'s tomb were the work of Peter, son of Oderic, who made the tomb of Clement IV. at Viterbo.

Mr. E. S. Prior delivered a lecture on "The London Style." London throughout the Middle Ages, he said, led the way in matters of art, and at the background of all provincial styles lay the workmanship, and particularly the art, of the capital. The spread of London's style meant the spread of the "shop" style. Medieval art was peculiarly ecclesiastical, concerned largely with the building of churches and monuments. The bishops were constantly in London, and their monuments and the work ordered by them were sent away to the various

cathedrals. London was also the gate for the entrance of Continental influences. It had no building stone of its own, and had to use imported material, unlike the cities of Durham, Lichfield, and Wells. Stone from Reigate and Caen and marble from Purbeck were used, and London was ready to take any materials that it could get. London also brought in masons from the country who returned home with the ideas that they had gathered in the capital. He discussed various monuments in the Abbey, and said that they contained many details showing that they were "shopwrought," made of separate materials from different parts of England.

The meeting concluded with a vote of thanks to Mr. Hardinge-Tyler, the Secretary, for his work in arranging the gathering.—*Morning Post.*

Surrey Archaeological Society: Visit to Charterhouse.

On Saturday, the 14th inst., a number of the members of the Surrey Archaeological Society visited the Charterhouse. The Master, the Rev. G. S. Davies, explained that, owing to the fact that the Monastery was largely rebuilt during the opening years of the XVIth century, it is often very difficult to tell what is part of the monastic buildings and what Howard House. The gateway and doors are of the XVIth century, but the house above was rebuilt about 1700. The Lay Brothers' Observances were first visited. They were later the servants' quarters of Howard House, and are now known as Wash-house Court, a most interesting red brick Tudor structure.

The Master's Court is mainly post-Dissolution. Three sides have been spoilt by a casing of brick put up by a former Master, but the great hall fortunately escaped. This fine Tudor hall contains a magnificent oak screen, with a fine overhanging gallery along one side, and much beautiful panelling. At first the Guests' Refectory, it was slightly enlarged, the roof raised, and a clearstory inserted to make it the banqueting-hall of Howard House. Later it became the dining-room of Sutton's Hospital.

The great staircase put in by Norfolk was much admired. Up these stairs Ridolphi was led to meet the Duke, and here, later, Norfolk was arrested for complicity in the plot.

The Great Chamber was next visited. It is believed that the upper part of the great fireplace was brought from Italy by Norfolk, and the lower part made to match it in England. There is also some fine tapestry of the same date. The chapel was originally built as a church in which relatives of those who had perished in the Plague might pray for the repose of the souls of the dead. In 1571 it became the chapel of the Monastery. The south side of the building is of this date. A new bay with columns was thrown out to the north by Sutton's trustees, and contains his magnificent tomb. Most of the stalls and pews are of the same date. The pulpit is a fine piece of Jacobean work, and the Communion table is famous as one of the best of its date, c. 1611, still extant.

GENERAL NEWS.

The Society of Architects.

The twenty-seventh annual meeting of the members of the Society of Architects was held on the 19th inst. at the Society's offices at Bedford-square. Mr. G. E. Bond, President, presided. The annual report, part of which was given in our last issue, p. 459, was adopted. Mr. R. G. Lovell read his report as delegate of the Society at the International Congress in Rome, and was accorded a hearty vote of thanks. We print the substance of Mr. Lovell's report on p. 470.

Town Planning at Liverpool School of Architecture.

The syllabus (certificate course) of town planning lectures for the Department of Civic Design at the University of Liverpool School of Architecture has been issued. The following courses have been arranged:—(A) "Outlines of Town Planning"; lecturers, Professor Adshhead and Mr. Atercrombie. (B) "Civic Engineering and Hygiene"; lecturers in engineering, Professor Brodie and Mr. Aman; lecturer in hygiene, Professor Hope. (C)

"Civic Law"; lecturer, Mr. Chaloner Dowdall. (D) "Civic Architecture"; lecturer, Professor Adshhead. (E) "Civic Devotion"; lecturer, Professor Adshhead. (F) "Parks and Gardens"; lecturer, Mr. Thomas H. Mawson.

Repairs at the Houses of Parliament.

During the recess the frescoes in the corridors leading to the lobbies of the House of Lords and House of Commons have been restored under the direction of Professor Sir Arthur Church. The six historical pictures behind the Strangers' Gallery and at the back of the Throne in the House of Lords have been cleaned. The work carried out by the Office of Works since August includes thorough cleansing of the House of Commons. The brasswork and carving has also been repaired. In Westminster Hall, at the south end, the three principals of the roof have been renovated, parts of the wood which had decayed having been removed and fresh pieces of oak bolted in.

Royal Academy of Arts.

The winter exhibition at Burlington House will be devoted to works of Old Masters and deceased British artists, with paintings by the late Josef Israels, Corresponding Member R.A., and of the late E. A. Abbey, R.A. On November 8 election will be made of an Associate to the vacancy occasioned by the death of Mr. Abbey. Unless the King's signature can be appended to the diploma before his Majesty sails for India, Associates can be officially elected during the autumn to fill the places of Mr. W. Bramley and Mr. A. Parsons, recently elected full Academicians.

Tattershall Castle, Lincs.

The Governors of the Manchester Whitechapel Institute have lent for exhibition by the Walpole Society in the Grafton Galleries a large water-colour view of the Castle painted by Thomas Cortin, and first shown by him in the Royal Academy Rooms in 1799.

Preservation of Stone Masonry and Frescoes.

Sir Arthur Church has just retired after more than thirty years' service from the Chair of Chemistry, Royal Academy. He has signalled his term of office by manifold research, and the steps he took for resisting the evil effects of sulphuric acid upon many of our public buildings and paintings. He applied the Baryta process to the walls of Westminster Abbey, Chapter House, and Palace, the Bodleian Library, the Chapel at Holyrood, and Greenwich Hospital, where he restored a decorative painting by Gentileleschi, besides the wall paintings in Westminster Palace. The process is applicable to statuary of bronze and marble placed in exposed situations.

"Nab Wood," Windermere, Westmorland.

The freehold estate known as "Nab Wood," formerly occupied by the owner, the late Geo. A. Pritt, and comprising a modern residence with extensive gardens and grounds on the eastern shore of lake Windermere, has been sold by private treaty by Messrs. Trubshaw & Gibson to Major G. Armitage. Alterations and additions to the house and grounds are now in progress, and are being carried out to the designs of Messrs. Trubshaw & Gibson, who have designed an extensive terrace and garden scheme.

Incandescent Glow Lamps.

The first of the special series of twelve lectures on "Illumination" arranged to take place at Battersea Polytechnic was delivered by Professor J. T. Morris on October 17. On this occasion the lecturer dealt with incandescent glow lamps, laying stress on the enormous progress of the last few years, and the extraordinary difficulties that had been successfully overcome in making metallic filament lamps. The gradual evolution of the carbon filament. Ernest Tungsten, and Tantalum lamps, the method of attaching the filaments, and making allowance for the "sag" were illustrated by a series of lantern slides. The actual filaments used in various types of carbon and metallic filament lamps were mounted intact on one of these slides, and thrown upon the screen in order to show their comparative thinness, and the lecturer subsequently showed that even these fine wires could

support a tension of a 2-lb. weight without snapping. A great variety of the latest types of lamps was also shown, including the test 200 v. 15-c.p. Osram lamp, and the new drawn-wire Mazda lamps. A series of the curves on metallic filament lamps (the test tests of the National Physical Laboratory) also attracted much attention.

Subways in the City.

At a meeting of the City Corporation on the 19th inst. the Streets Committee asked for parliamentary powers to construct a subway for pedestrians across Cannon-street, near the Mansion House Station, at an estimated cost of £16,000. Mr. A. C. Morton, M.P., said it was true that the Mansion House subways are only used by from 12 to 14 per cent. of persons wishing to cross, but even that percentage represented more than 20,000 persons daily, besides those who used the stations. The report was carried. On the recommendation of the Streets Committee the Court sanctioned a subway between the Moorgate-street station of the Metropolitan Railway and the adjacent station in Finsbury-pavement of the Great Northern and City Railway. The Court gave its consent to the introduction of a Bill in Parliament by the London County Council authorising the construction of a tramway in Bishopsgate from the City boundary to Aldersgate-street.

C. S. Rolls Memorial.

The statue erected to the memory of the late Hon. Charles Stewart Rolls, M.A., R.G.S., A.M.I.Mech.E., in Agincourt-square, Monmouth, facing the Shire Hall, unveiled on October 19, was sculptured by Sir W. Goscombe John, R.A. The monument of bronze, 16 ft. high, represents Mr. Rolls habited as in his flight across the channel, and holding in his hands a model of an aeroplane; on the pedestal are bronze reliefs symbolical of aviation, ballooning, and motoring.

MacLagan Memorial Window, Newington Butts.

The Bishop of London will dedicate on October 31 the memorial window to the late Archbishop MacLagan in St. Gabriel's Church, Newington Butts, the church of which the Archbishop was the founder. At the conclusion of his ministrations at St. Gabriel's, his plan for filling the east window was completed only so far as the centre light was executed; in this was depicted, in ascending order, "The Annunciation," "The Crucifixion," and "The Ascension"; exactly what was designed to fill the two side-lights has now been completed. Dr. MacLagan's conception of St. Gabriel took cognisance of the saint's appearance to Daniel and to Zacharias, and these appearances furnish the themes for the lower panel pictures, in the left and right and lights respectively. The upper panels being devoted to the "Agony" and the "Women at the Tomb," occasion has also been taken to fill the two quatrefoils, with angels, which are superimposed, above the two side-lights, and nearly level with the top panel of the centre light, in which is depicted "The Ascension." Messrs. Morris & Sons, Ltd., of 239, Kennington-road, have executed the work.

Art Publications.

The *Connoisseur* announced for publication the 23rd inst. the life and works of Sir Henry Raeburn, R.A., by Mr. James Greig. The volume contains more than fifty illustrations and a catalogue of Raeburn's works. The Christmas Number of the *Art Journal* is devoted to the art of Mr. tanhope A. Forbes, R.A., whose son, by the way, has just entered the schools of the Architectural Association.

Royal Military College, Sandhurst.

The new buildings on the eastern terrace are nearly completed. Six companies of cadets will be accommodated in the two wings of the buildings, which cover an area of almost 1,000 ft. by 200 ft. in extent. The general design is classic in manner; the central block has a Doric portico, with an ionic columnar Order above, and a copper-covered octagonal dome. Covered corridors run the wings to the main block, faced with a granite stone to the first-floor level, and of red brick with stone dressings on the upper two floors; in lieu of the old cubicles the cadets' rooms, thirty-five on each floor, are 1 ft. 6 in. by 9 ft. 9 in., and from 10 ft. to

11 ft. high. The dinner-hall is 156 ft. long, 48 ft. wide, and 24 ft. high to the apex of the domed ceiling. In a vault are four 20-ft. boilers, whose shafts draw all smoke from the furnaces, which heat water for the radiators in the halls and corridors, the pipes in the cadets' and officers' quarters, and the bathing and domestic service systems. The buildings have been erected, at a cost of nearly £50,000, by Mr. T. Rowbotham, of Birmingham, to the designs in every detail of Mr. H. B. Measures, M.V.O., F.R.I.B.A., Director of Barrack Construction, War Office; Mr. E. Peers was chief clerk of the works. The whole interior of the older buildings, erected in 1811-2, is to be reconstructed forthwith.

Faculty Pews.

The holding of faculty pews in our churches is somewhat anomalous in these modern times, but in some churches their removal is to be deprecated, as destroying the character of the church and the stamp of its antiquity; the old oak pews, too, often being removed to give place to less cumbersome modern seating. It is not often, however, that the rights of faculty pewholders are shown to constitute an obstacle to securing the safety of the rest of the congregation. The Vicar and Churchwardens of the celebrated Priory Church at Christchurch have recently applied for a faculty for the removal of the galleries from the north and south transepts and for other improvements, but this was opposed by the holders of certain faculty pews. The Diocesan Architect had made a report that the north gallery, with its narrow staircase, was a veritable deathtrap in case of fire, and the Chancellor, in his judgment, said that unless the owners of the faculty pew in that gallery undertook to repair the gallery and to remove this danger a faculty would be issued for the removal of the gallery, a faculty pew being provided for the holders in some other agreed position in the church. This seems a reasonable condition to impose, and in this case the galleries would appear to offer no advantages, as the report made by Mr. T. G. Jackson, R.A., Diocesan Architect, sets forth that the galleries of early 15th century period are ugly and obstructive, and in the case of the north gallery dangerous by reason of its narrow staircase, and that their removal would greatly contribute to restoring its ancient beauty to the interior of the church. The learned Chancellor granted a faculty for the other objects of the petition, comprising the transfer of the organ-blowing chamber from the south gallery to the transept below, the provision of a second communion table outside the choir-screen, and reseating in the transepts and nave. The costs of the hearing and opposition must, he said, devolve upon the applicants.

BOOKS.

The Cathedrals of Central Italy. By T. FRANCIS BUMPUS. With fifty-one illustrations. (London: T. Werner Laurie, Clifford's Inn, Fleet-street. 16s. net.)

MR. FRANCIS BUMPUS is a voluminous writer, with an evident love for architecture and a keen appreciation of the masterpieces of the art. He writes enthusiastically of work he admires, and though his gossipy narrative is sometimes a little too discursive, it must be admitted that his volume is both readable and instructive. It is intended, we presume, principally for the educated layman interested in the works of architecture, but it contains much that will appeal to the architect. Mr. Bumpus has the right perception of the value of architecture to a nation when he says: "Architecture and the arts subsidiary to it not only throw a lustre on the reign of kings, but in the monuments they erect sum up most completely the cultivation and tendencies of the nation, keep its memory green, and where its glory has departed and all else has been swept away, still point to the greatness and intelligence of the people." There is nothing new in the observation, but the point is worth making whenever opportunity occurs, especially in such a work as this. The first chapter is devoted to "The Journey," the author having a great deal to say in these seventy-eight pages—not always about architecture—that is interesting, giving the

result of careful observation and investigation; and this interest and impression are sustained by a perusal of the subsequent chapters. There are two chapters on the arts subsidiary to architecture:—I. "Stained Glass Painting"; II. "Sculpture"; followed by a chapter on "The Romanesque" and three chapters on "The Gothic." The work includes an index and over fifty illustrations, two or three of which are coloured plates from paintings by Stafford Leake. This is one of the best works which, in our opinion, the author has written, and we are glad to call attention to it.

Practical Mathematics and Geometry. By EDWARD L. BATES and FREDERICK CHARLES-WORTH. Part III. Advanced Course. (London: B. T. Batsford. 1911. Pp. 776. 5s. net.)

THIS book, with Parts I. and II., forms a progressive course of instruction so arranged that students can acquire by easy stages the knowledge necessary for passing the technical examinations of the Board of Education and for assisting them afterwards in practical work. The present volume has been written to cover the extended course resulting from the recent decision of the Board of Education to discontinue Stage I. Examinations in practical mathematics and geometry. The book is very clearly written, well illustrated with diagrams, and excellently produced. It will be found a valuable guide for advanced students.

Mill and Factory Wiring. By R. G. DEVEY, A.M.Inst.E.E. (London: Constable & Co., Ltd. 1911. Pp. 197. 2s. net.)

A very handy little book, written from the practical standpoint and free from all complicated technical matter. The installation of wires and cables by various methods is dealt with clearly, and the numerous diagrams of connexions for all types of electrical machines in general use should enable the wireman to wire and connect to any generator or motor with the necessary auxiliaries.

Practical Advice on Gasfitting. By R. HALKETT. (London: Walter King, Office of the *Journal of Gaslighting*, 11, Bolt-court, E.C. Price 2s. 6d.)

THIS little work is by a man who understands his subject, for Mr. Halkett is Assistant Superintendent of the City of Leeds Gas Mains and Distribution Department. It is a practical little book, the information in which is clearly stated, and the facts, as the author claims, can readily be grasped. The work contains several diagrams, etc., in order to make the author's meaning clear.

Electrical Mining Installations. By P. W. FRENDENACHER, A.M.Inst.E.E. (London: Constable & Co., Ltd., Orange-street, Leicester-square, W.C. 2s. net.)

THIS volume is intended specially for colliery engineers and contractors engaged in the installation of electrical plant for mining purposes. The book includes chapters on generating plant, generating-station switch gear, electric haulage, electric pumping, and electric ventilating. The work contains several explanatory diagrams.

Guide to Patents, Trade Marks, and Designs. (London: J. S. Withers & Spooner, Chartered Patent Agents, 323, High Holborn.)

THIS is the fifth edition of a useful little guide the object of which is to explain to inventors the elementary steps necessary in connexion with the protection of inventions and the registration of trade marks and designs. It is not exhaustive, but deals with points on which inventors often require information.

BOOKS RECEIVED.

ALL SAINTS' CHURCH, HORSEBATH. By Catherine E. Parsons. (London: Cambridge University Press. 5s. net.)

PYROMETRY. By Chas. R. Darling. (London: E. & F. N. Spon, Ltd.)

REINFORCED CONCRETE CONSTRUCTION. By M. T. Cantell, Lic.R.I.B.A. (London: E. & F. N. Spon, Ltd. 4s. 6d. net.)

CHURCH STUDY. By M. M. Penrose. (London: The National Society. 4s. net.)

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White (Chairman) presiding.

LOANS.—A loan of 15,000*l.* is to be made to the Hampstead Borough Council for the purpose of street lighting by electricity in use.

The Kensington Royal Borough Council is to receive a loan of 550*l.* for acquisition of certain property, and a loan to the Guardians of Holborn Union of 4,700*l.* for Poor Law purposes.

SCHOOL, STEPNEY.—It was reported by the Education Committee that the Senrab-street School, Stepney, is to be enlarged to provide accommodation for 1,162 children, and that plans had been approved for that purpose.

SCHOOLS.—The York-road School, Islington, is to be enlarged at a cost of about 1,190*l.* Heating apparatus and electric lighting are to be installed at the Great College-street School, St. Pancras. Various alterations are to be carried out at George Green's School, Poplar.

NEW SCHOOL.—The same Committee also reported that revised plans have been approved for the erection of a new Rural Council School at Dockhead, Bermondsey.

RECONSTRUCTION OF OFFICES.—The girls' offices of the St. Barnabas School, Hanover-square, are to be reconstructed, and the Committee have approved plans for that purpose.

CLOAKROOM.—A new cloakroom is to be erected at the St. Joseph's Roman Catholic School, plans having already been passed for the work.

CHIEF FIRE-STATION.—In a report by the Fire Brigade Committee it was stated that the extension of the chief fire-station has now been completed. The testing ground at this station is being lighted by electricity at a cost of about 55*l.* Electric lighting is also to be installed at the east and north-east blocks of this station at a cost of about 235*l.*

WHITEFRIARS FIRE STATION. Alterations are to be carried out at this station at a cost of 1,555*l.*

DRILL TOWER.—A drill tower is to be erected at the Bethnal Green Fire Station at a cost of about 100*l.*

OLD OAK ESTATE.—In a report of the Housing of the Working Classes Committee it was stated that good progress had been made with the erection of houses on this estate, and that it was proposed to erect eighteen more cottages and three shops on the estate.

LIBRARY, EDUCATION OFFICES.—The Establishment Committee reported that it was necessary to provide additional accommodation for the books in the library at the Education Offices, and that the estimated cost was 113*l.* 10*s.*

ST. PAUL'S BRIDGE.—In a joint report of the Highways Committee and Improvements Committee it was recommended that Parliamentary powers should be sought for the construction of tramways from Southwark-street over the proposed new bridge. It was stated by the Finance Committee that this proposal would require the expenditure of 350,000*l.* towards the cost of widening St. Paul's Churchyard and the construction of tramways and subways.

An amendment was put forward by Mr. J. D. Gilbert asking that a scheme should be submitted for the provision, on the basis of the Home Office suggestion, of a new road in continuation of the proposed southern approach to the bridge.

This amendment was opposed by Lord Alex. Thorne, who contended that it was not wise to construct such a new road until they knew the character and volume of the traffic which would pass over the bridge.

It was also pointed out by Mr. Hayes Fisher that it would probably be six or seven years before the bridge was finished, and experience showed that it was not always an economical policy to buy land in advance of the time when it would be wanted.

Further consideration of the matter was then adjourned.

ADMINISTRATIVE ARCH IMPROVEMENT.—It was reported by the Improvement Committee that terms had been arranged for the acquisition of all interests in the property needed for the Mall and Charing Cross improvement.

CORRESPONDENCE.

The R.I.B.A. and the Society of Architects.

SIR,—In the Report of the twenty-seventh annual meeting of the Society of Architects, published in your last issue, I find the following:—

"The meeting was consequently adjourned, and in due course your Council received an intimation from the Council of the Royal Institute that they proposed to make an application to the Privy Council for a supplemental Charter, which would give the necessary powers to enter into the agreement."

This I believe to be the first information that any ordinary member of the R.I.B.A. has received that such an intimation had been given by the Council of the Royal Institute to the Council of the Society of Architects, and I am astonished that such an arrangement should have been made without consulting the general body, and that it should have been left to the Society of Architects to declare the manner by which they hope to be absorbed. W. H. BURR, A.R.I.B.A.

* * * The report quoted by our correspondent does not exactly cover the state of affairs. We understand that the R.I.B.A. agreed to take steps towards securing a Charter, and the first of these steps would be to obtain the authority of the general body, which has not yet been done.—[Ed.]

The Breaking-up of Landed Estates.

SIR,—The breaking-up of so many landed estates throughout the country will remove an influence which for centuries has been identified with our great landowners in the preservation of natural scenery. This may be seen on all sides in town and country; in London it gave us the 400 garden squares of which we may well be proud, and in the country that influence has preserved the landscape in innumerable places.

As this influence wanes, can we look for another conserving force without the intervention of a public authority? This question appears to me to be answered in the affirmative by a landowner who, in submitting to auction lands in Eynsford and Farningham, bars the erection of objectionable buildings by a condition of sale that each building shall be subject to the approval of the Royal Institute of British Architects. All purchasers being under like restrictions, all are alike benefited, and the community gains.

Those who know the valley of the Darent, with Lullingstone Park, the seat of Sir William Hart-Dyke, and the Elizabethan mansion of Frank's Hall, recently purchased and restored by Earl Bathurst (whose ancestors occupied it in Tudor times), will appreciate this effort to preserve the old-world setting of a valley which owes so much to the celebration of Arbor Day by the annual planting of shade trees in the thoroughfares and fruit-trees in the cottage gardens of Eynsford and Farningham.

This proposal to substitute the influence of the Institute of British Architects for that of the great landowner will, I trust, be cordially supported. MARK H. JUDGE.

White-Lead.

SIR,—You have a "Note" in your issue of the 20 inst. condemning the use of white-lead as a pigment on the ground of its being necessarily injurious to the health of the painter. During forty-five years I employed many thousands of painters, and can say that in point of health and healthy appearance they compared quite favourably with any other class of operative. Some of these men I have known for thirty, forty, and fifty years. During this time there have been a few cases of what is called "painter's colic," which have mostly responded to treatment in a few days; I can remember but one case causing death, and in this case the victim was a zealous, good workman, but personally untidy and careless of himself.

Undoubtedly there are some constitutions "predisposed" to being affected by lead, and these persons should never become painters.

There are certain conditions of work, well understood and for the last sixty years acted on by all good painters and employers, indispensable to the safe use of white-lead; these are personal cleanliness and the invariable washing of hands before meals and before leaving work. It becomes a fixed

habit with the men, and facilities for it are a recognised part of the employer's provision of materials and plant on a painting job, as it is one of the foreman's duties to see that the practice is observed. If it be true that there is lately an increase in the number of cases of lead-poisoning reported, I think this may be explained in two ways:—Firstly, that for cheap contract work many casual hands are taken on who are not trained painters; secondly, that since compensation claims for lead-poisoning can be made on the employer, even after a few days' engagement, "lead symptoms" have become more frequent. Great efforts are made by those interested in "white zinc" manufacture to make the most of the faults of "white-lead," but the latter has qualities for which, in our climate, zinc is no substitute.

It is many years since I have employed any painter, nor have I the remotest interest in lead manufacture, but my own long experience does not confirm this determined outcry against a valuable material. J. D. CRACE.

Architects and Shop Designs.

SIR,—Your correspondent, Mr. Vale, who writes in your issue of September 1, finds shopkeeper clients more difficult to deal with than they are here. The large drapers, etc., who have had considerable experience of London shops say that they gain by setting back the showcase, and form an arcade along the front, as the area of glass can be greater by designing the divisions with recessed bays, and this, they consider, compensates them for the loss of area. Their customers are also able to shop in comfort in all weathers, as they are protected from rain and sun. We experience no trouble from shadows. SINGAPORE. ARCHITECT.

INTERCOMMUNICATION COLUMN.

Church of St. John the Evangelist, Horselydown.

SIR,—Will you oblige by informing me if St. John's Church, Southwark, county of Surrey, is in existence now? I am anxious to know if a monument erected to Benjamin Kidney now exists. It was erected in accordance with his will in the year 1787 or 1788 in the old church. I find that the monument erected to John Gower, who died in 1402, has been removed from the Chantry of St. John, where he had been buried in accordance with his will, and was re-erected in St. Mary's Overies, now St. Saviour's, Southwark.

I find on one map of London St. Olave's Union and a church at the back of the Union, from High-street, Borough, down St. Thomas-street, Crux-street, to Artillery-street; this last street should be in front of this old church, marked on my map. On examining the list of churches I fail to find a St. John, Southwark. You have given us many particulars on churches; can you kindly oblige me? W. INNS BROWN.

* * * Our correspondent's letter relates clearly to the existing Church of St. John the Evangelist, Horselydown, in Bermondsey, built in 1731-2 as one of the "Fifty New Churches." There is no connexion, so far as we know, between that church and the St. John's Chapel, or Chantry, that stood formerly in the north aisle of St. Mary Overies (St. Saviour's), wherein John Gower founded a chantry and was buried, 1408. His monument was removed from St. John's Chapel into the south transept, and repaired and recoloured *ex impensis* the Duke of Sutherland, in 1832; it was returned to its original position fifteen years ago, in the north aisle of the nave, as restored, of Southwark Cathedral. A reply concerning the Kidney monument could doubtless be obtained from the Curate-in-Charge, St. John's Rectory House, Fair street, Horselydown, S.E.—[Ed.]

MORTAR INSPECTION AT FLYMOUTH.

The Borough Surveyor reports that he had examined during the past month four samples of mortar taken from builders. Three of these samples were in conformity with the by-laws, but the fourth was found to be deficient in lime, due to the use of slaked lime instead of unslaked.

EDITORIAL SUMMARY.

The Arrangement of Our Museums" is the title of the leading article, which deals with the question now in progress in the columns of *Times*.

A second leading article dealing with new methods of measuring the vitiation of air appears on p. 468.

In Notes (p. 469) will be found observations: "The Railway Commission"; "The cumulation of Books"; "The Crystal Palace"; "Indian Art and Archaeology"; "Vimbleton Common Extension"; "Changes in the Admiralty"; "The Architect as Decorator."

A report, by Mr. R. G. Lovell, on the Ninth International Congress of Architects, held in Rome at the beginning of the month, was read at the last meeting of the Society of Architects. Mr. Lovell, who was the Society's official delegate at the Congress. An abstract of the report appears on p. 470.

An abstract of a paper on "The Microscopical Examination of Architectural Material," recently read before the Glasgow Architectural Craftsmen's Society by Mr. John S. Glen Imrose, lecturer on metallurgy at the college, given in this issue, p. 471. Some illustrations accompany the report.

An abstract of a lecture on "Landscape Architecture," recently read by Mr. Thos. H. Watson, Hon. A.R.I.B.A., before the Gloucestershire Architectural Association, appears on p. 474.

Archaeological Societies (p. 475) include brief notices of meetings of the Surrey Archaeological Society (Visit to Charterhouse) and the Royal Archaeological Institute ("Art and History in Westminster Abbey").

Book notices (p. 477) include: "The Cathedrals of Central Italy"; "Practical Mathematics and Geometry"; "Mill and Factory Lighting"; "Practical Advice on Gasfitting," etc.

In our Correspondence Column (p. 478) will be found letters on: "Architects and Shop Signs"; "White-Lead"; "The Breaking-up of Landed Estates"; "The R.I.B.A. and the Society of Architects."

The Monthly Review of Civic Design, illustrated (p. 481), consists of: "A Notable Paris Improvement"; "Schöneberg Electric Railway"; and Notes.

The Building Trade Section (p. 485) includes: "The Railway Commission Report"; "Duties and Land Values"; "The Employers' Parliamentary Council"; "Reinforced Concrete in Underpinning"; "London Master Builders' Association"; "Government Contracts"; "Projected New Buildings in the Provinces"; "Applications under London Building Acts, 1904 to 1909," etc.

Some awards accorded to British exhibitors at the Turin Exhibition are given on p. 489.

Law Reports (p. 489) include brief reports of the following cases: "Schworer v. Bethnal Green Borough Council"; "Minter v. Waldstein."

In Legal Column (p. 489) some observations will be found on "Deposits on Contracts for Sale," and "Oil on Roads."

MEETINGS.

FRIDAY, OCTOBER 27.

Glasgow Technical College Architectural Craftsmen's Society.—Professor Gourlay on "The College Diploma and Certificate Courses in Building." 7.45 p.m.

SATURDAY, OCTOBER 28.

Institution of Municipal Engineers. Visit to Brentford Sewage Disposal Works.

MONDAY, OCTOBER 30.

Architectural Association. Mr. H. H. Hill, B.A., on "The A.A. Excursion to the Loire, 1911." 7.30 p.m.

University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "Renaissance Palaces and Villas of Rome." 5 p.m.

University of London (British Museum).—Mr. Panister Fletcher on "Western Asiatic Architecture." Lantern illustrations. 4.30 p.m.

Junior Institution of Engineers (at the Institution of Electrical Engineers, Victoria Embankment).—Annual general meeting, followed by annual general meeting of the Benevolent Fund contributors, 7 p.m., and at 8 p.m. paper, entitled "Notes on Design and Construction in Iron Works," by Mr. George E. Evans, Assoc. M.Inst.C.E.

TUESDAY, OCTOBER 31.

University of London (University College).—Mr. Arthur Barker, B.A., B.Sc., on "The Real Nature of the

Problems in Heating and Ventilation Awaiting Solution by the Engineer"—ILL. 5 p.m.

Battersea Polytechnic.—Mr. J. G. Clark on "Gas Lighting." 7.30 p.m.

WEDNESDAY, NOVEMBER 1.

Royal Archaeological Institute.—Mr. A. Hamilton Thompson, M.A., F.S.A., on "The Registers of John Gynwell, Bishop of Lincoln, for the Year 1349." 4.30 p.m.

THURSDAY, NOVEMBER 2.

Architectural Association. Camera, Sketch, and Debate Club (Ladies' Night).—Mr. Edwin Gunn on "Woman as a Domestic Architect." 7.30 p.m.

ILLUSTRATIONS.

No. 93, Mortimer-street, W.

THE accompanying drawing of this building, photographs of which appeared in the *Builder* of October 15, 1910, shows a treatment for premises planned to contain shops and show-

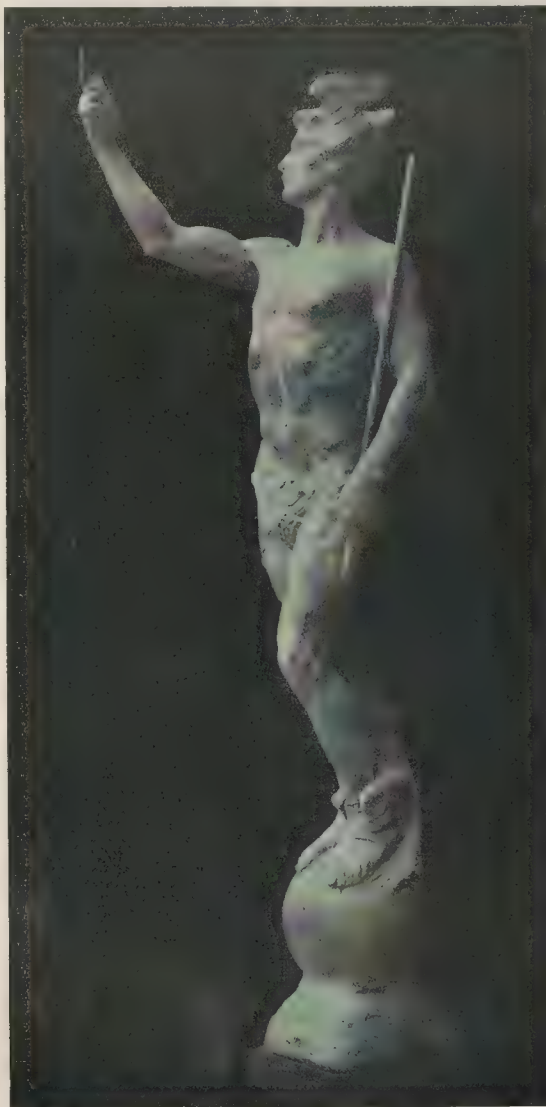
rooms in the front on either side of a corridor leading to a hall in the rear, while a staircase connects a second hall in the basement and office rooms in the upper part of the building.

The elevation is carried out in Portland stone, with bronze wreaths in the frieze, the shield and attendant ornaments and the fanlight over the entrance doorway being also in bronze. The windows are of wrought-iron glazed internally.

Messrs. William & Edward Hunt were the architects, and Messrs. H. & E. Lea the general contractors.

Business Premises, Gray's Inn-road.

THIS building, recently erected by Messrs. Hart & Waterhouse, comprises offices and a board-room, occupying the whole width of the building on the first floor. Lawrence's 2-in. red bricks and Portland stone are employed

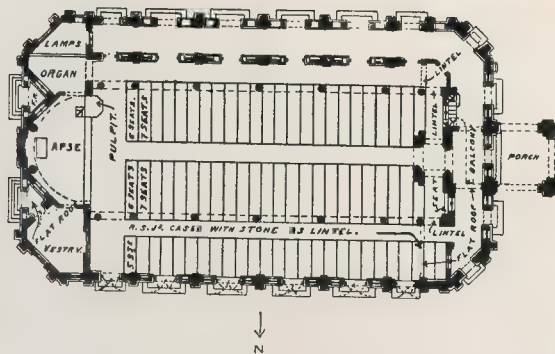


Mercury. By Mr. A. Stanley Young.

Plaster Model, shown at the Royal Academy Exhibition, 1911, of Finial, 7 ft. 6 in. high, erected in teak on business premises in Gray's Inn-road. (See Plates)



Sprague & Co., Ltd., Printers, 48 & East Harding St., E.C.



PRESBYTERIAN CHURCH, UMBALLA.

TYPE OF UNCONSECRATED CHURCH
FOR THE PLAINS OF INDIA.

VIEW AND PLAN.

MR. JAMES RANSOME, F.R.I.B.A., ARCHITECT.

BUSINESS PREMISES
GRAY'S INN ROAD W.C.
DETAIL OF FRONT ELEVATION.

SCALE 1" = 10' 0"



BUSINESS PREMISES, GRAY'S INN ROAD—MESSRS HART & WATERHOUSE, ARCHITECTS



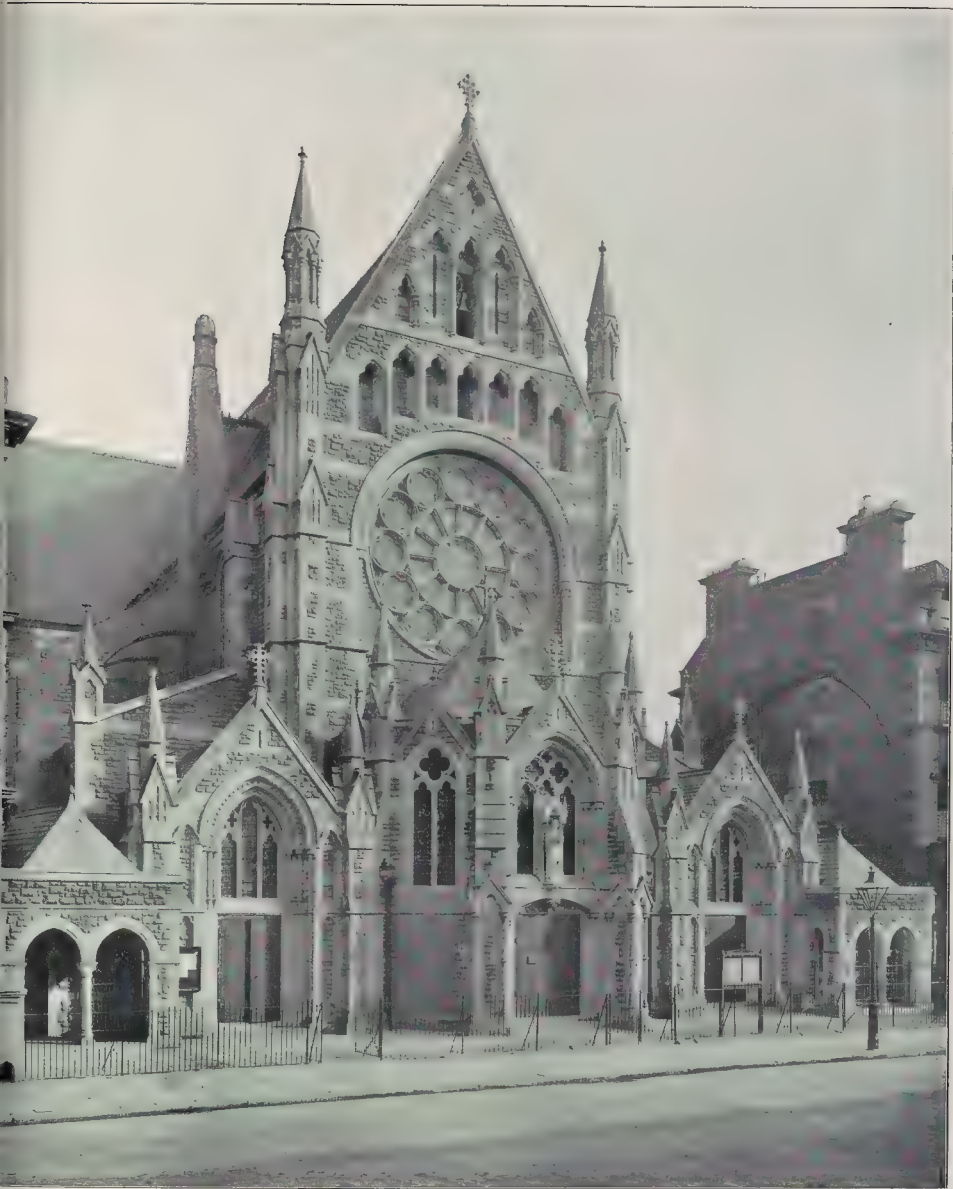
NO. 93 MORTIMER STREET, W.—MESSRS WILLIAM & EDWARD HUNN, ARCHITECTS



BUSINESS PREMISES, GRAY'S INN ROAD. MESSRS. J. & W. WATKINS & CO., LTD.



BRUGES: LA TOUR DES HALLES.—DRAWING BY MR. MALCOLM OSBORNE, R.E



Sprague & Co., Ltd., Printers, 4 & 5 Fleet Street, E.C.

CHURCH OF ST. JOHN THE BAPTIST, KENSINGTON.

MESSRS. JAMES BROOKS, SON & ADKINS, ARCHITECTS.

MONTHLY REVIEW · of · CIVIC DESIGN.



La Chapelle du Val de Grâce, Paris.

[Photo. by Kuhn.]

A NOTABLE PARIS IMPROVEMENT.

UCH measure of poetic justice as circumstances permit is at last being paid to the memory of the greatest artist of the Renaissance in France, the church of the Benedictine Monastery of the Val de Grâce, in Paris, should have been the crowning achievement of the matured genius of François Mansart. Its history is one of the tragedies of architecture. Founded by the Emperor of Austria, the wife of Louis XIII., in fulfillment of a vow to build a noble church on the birth of the Dauphin, the foundation was laid by Louis XIV., when a child of seven years old, in 1645. François Mansart was the architect, but he had been in charge of the works for some time and had raised the walls

some 9 ft. above the floor level he was discharged and superseded by Lemercier, who, in turn, was followed by Le Muet and Le Duc.

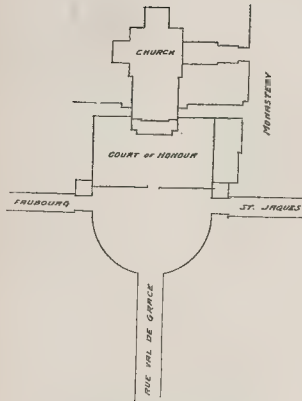
Shortly after this crushing blow Mansart was, for political reasons, deprived of all his employment by the Court, and finally died in 1666.

Judging from the plan and general idea of the building, and also from the distinguished character of the interior work as begun by Mansart, this church should have been one of the masterpieces of the Renaissance, and even now the liberties taken with Mansart's design by his inferior successors cannot prevent it from remaining one of the most interesting. As it stands to-day its

chief interest consists rather in its lay-out and approach, and the manner in which the central dominant feature is supported by the lower buildings of the forecourt, than in the actual features and details of the exterior, which fall only too short of what might have been had Mansart been permitted to finish it.

But, although it is impossible now for a more appreciative generation to restore Mansart's conception to its original artistic completeness, it has been found possible to deal with its surroundings on the lines he suggested.

The plan of the church is a Latin cross with a dome on the intersection. This is generally acknowledged to be a fundamental mistake, as the nave or narthex of the



Val de Grâce, Paris: Sketch Plan of Recent Improvement.

long arm of the cross must always cut off the view of the central dome, as at St. Paul's, or as at the Panthéon in Paris, where the Latin cross is said to have been adopted instead of the more natural Greek cross, in deference to ecclesiastical convention.

It is to be presumed, in the absence of any definite record to the contrary, that in this case also it was forced upon Mansart against his better judgment. Be that as it may, he appears to have intended this treatment and to have foreseen its consequences, as he designed a semicircular place, with a fountain and pyramid in the centre, on the opposite side of the Rue Faubourg St. Jacques, to enable the spectator to get far enough away from the building to see the dome to advantage. Had the dome been built on a Greek cross, thus bringing it farther forward, this special arrangement would not have been necessary, as the depth of the forecourt, some 200 ft., would have been sufficient to have given a proper view from the Rue Faubourg St. Jacques; although, of course, such a semicircular place would, in any event, have added considerably to the general effect.

It is here that the enlightened and sympathetic administration of the city of

Paris has found an object worthy of its solicitude. No one of the many admirable improvements which it has in hand or contemplates for the future will give keener pleasure to the lover of art than this homage paid to the memory of the supreme genius of the Renaissance.

After 250 years François Mansart still lives, and his ideas fructify. The Municipality of Paris had already laid out the Rue Val de Grâce, giving a vista of the dome from the Boulevard St. Michel, and it is now engaged in forming the semicircular open place opposite the Court of Honour, as indicated in the sketch plan.

We cannot help contrasting the attitude of the City of Paris towards this historic monument with that adopted by the City of London towards the approaches and environment of St. Paul's, a building of far greater relative importance in the life of the city. But after such an encouraging instance of the immortality of a true idea as is afforded by the improvement at the Val de Grâce we feel justified in believing that Wren's idea will, in the fulness of time, come to fruition also.

A further interesting connexion between these two buildings is to be found in the unusual similarity between the general treatment and the detail of the internal order in both buildings. That at the Val de Grâce should be the personal work of Mansart, and as such, and as one of the latest examples of the work of the great artist of the day, it would naturally have excited the attention of Wren when studying the buildings of Paris. To those interested in such questions it may throw some light on the methods of Wren and on the debatable question of the amount of French work in St. Paul's.

SCHÖNEBERG ELECTRIC RAILWAY.

Zeitschrift für Bauwesen contains a lengthy article, with many interesting detailed illustrations, of an underground electric railway in the neighbourhood of Schöneberg, one of the suburbs of Berlin. We publish a view, with plan and section, of the Stadtpark Station, where the railway crosses at the lower ground level with the high level road taken over it.

Advantage has been taken of this rather unusual arrangement to obtain an interesting architectural composition, which should, we think, be very effective. There is evidently no

reason why these engineering schemes should not prove an added charm to the neighbourhood if only they are rightly handled.

CIVIC DESIGN NOTES.

The Housing of Naples.

DIFFICULTIES in regard to dwellings are alluded to in an annual report of the British Consul at Naples, Mr. Churchill, who says it seems impossible to arrive at a criterion as to the real extent of commercial development of that city. Streets with handsome up-to-date piles of flats the rents of which are in advance of anything hitherto heard of there—are occupied as well as they are licensed for letting; and yet rents are continually rising, showing unmistakably that there is a demand for more housing space. In the more densely-populated quarters of the town there are no tenement houses with vast rooms. Tramway lines are being extended in order to bring the outer suburbs into closer relation with the town, so that the labouring classes may be able to find lodgings there, and cheap workmen's services have been instituted at certain hours of the day in order to enable workpeople to avail themselves of housing at a larger radius from the city proper. In order further to find a solution for the burning question of housing an ever-growing population the Government is projecting a law to encourage the building of cheap dwellings which shall be exempted from property tax for a period of ten years, whilst houses for the better classes are to be exempted from taxes for the period mentioned. These remedies are being general all over Italy.

The Civic Council of Naples, in order to cope with its own local problem, has granted the sum of 12,000*l.* a year for the space of fifty years free of interest and reimbursement, to an institution created for the construction of popular dwellings, the first payment to begin with 1912. The objects of the municipality is to enable the construction company to borrow money cheaply in order that the work may be prosecuted expeditiously. The Civic Council requires the popular dwellings not to exceed a stipulated rent. The neighbouring town of Castellammare has been authorised to hold a lottery not to exceed 40,000*l.*, free of taxes, for the benefit of the company which is to construct workmen's dwellings there.

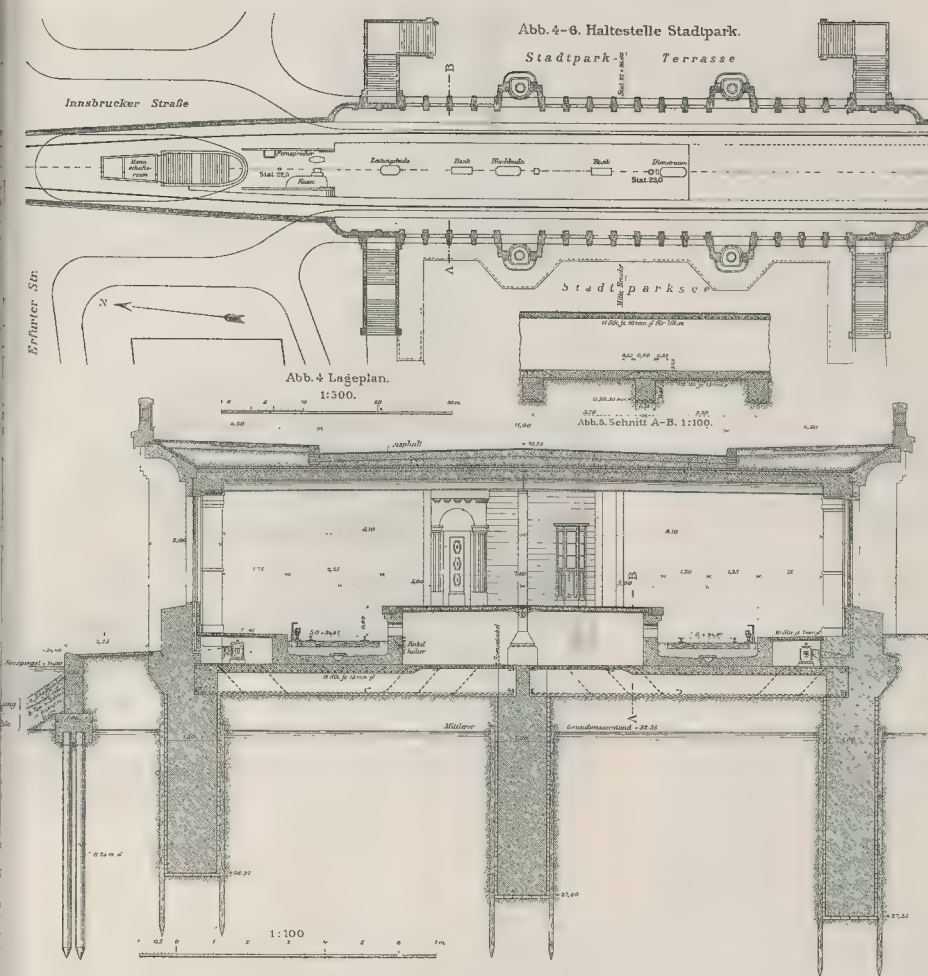
A Forgotten Embankment Scheme.

A SCHEME for a quay at the north side of the river from Charing Cross to Blackfriars appears to have been suggested in 1825 by a Lieutenant Colonel Trench, and to have been taken up and promoted as a financial enterprise by certain more or less important people of the



Electric Railway Station, Schöneberg.

(From *Zeitschrift für Bauwesen*.)



Electric Railway Station, Schöneberg.

(From Zeitschrift für Bauwesen.)

ved in the light of a commercial specula-
t is difficult to imagine it successful, and
be owing to this fact that nothing seems
ve come of it. This perhaps is not

altogether to be regretted, for, considering the
standard of work of that day, it is doubtful
whether it would have proved to be an artistic
success either. Such an undertaking is only

excusable if done supremely well, and for that it
was 150 years too late or too early.

The view we illustrate shows the treatment
of the bank from Charing Cross to Waterloo



Part of an Improvement Scheme for the Embankment proposed in 1825 by Lieut.-Colonel Trench.

Bridge. The idea seems to have been to carry on the basement treatment of Somerset House with water-gates giving access to streets or wharfs behind the screen. This treatment has more than once been proposed for the south bank of the river as producing a fine monumental effect, while providing facilities for the warehouses and docks of a busy commercial quarter.

Whatever may be said against such an arbitrary treatment of the river frontage, its general effect, however tame and uninteresting it might have been in detail, would at least have been more dignified than the present jumble of uninteresting buildings on the western side of Waterloo Bridge. Save for the Embankment, which forms a fine base-line, this part of the river bank is as much in need of comprehensive treatment to-day as it was in 1825.

Rochester and Town Planning. A SCHEME formulated by Rochester Corporation has failed to secure the sanction of the Local Government Board upon the ground that Crown lands are exempted from town planning schemes.

Workmen's Dwellings in Greenock. MANY houses in the poorer part of Greenock having been found undesirable for habitation they have been closed, and the Corporation has appointed a Committee to report on the possibility of rebuilding under the Housing and Town Planning Act, 1909.

Street Widening at Bristol. ON September 22 a Local Government Board inquiry was held in respect to various proposals of the Bristol City Council for street improvements. These included the widening of Victoria-street, St. Philip's Marsh; West-street, St. Philip's; Victoria-road, Bedminster; Hotwell-road; Rupert-street; and Cheltenham-road. The total sum proposed to be borrowed for these purposes was 2,000*l*.

Dublin Citizen's Association and Town Planning. THE Executive Committee of the Association noted with satisfaction that as an outcome of the suggestion made in the paper read on the subject at the UI Breasail Exhibition and Congress of the Royal Institute of Public Health, under the auspices of the Association, by Mr. James Vincent Brady, C.E., steps are being taken for the formation of an Irish Housing and Town Planning Association of a permanent character. The Committee were further gratified to perceive that the Public Health Authorities of the city were taking active steps to give effect to the suggestions contained in the pamphlet issued by the Association dealing with the powers vested in the Corporation under the Housing of the Working Classes Acts.—*Freeman's Journal*.

Twickenham Town-Planning Scheme. A STATUTORY meeting of owners and lessees of property in Twickenham was held at the Town Hall recently to consider the town-planning scheme promoted by the District Council. The Surveyor (Mr. Pearce), in describing the scheme, said that the area scheduled comprised 1,880 acres, of which 1,520 acres were within the parish of Twickenham. On the Surrey side of the Thames a strip of land, varying in width from 100 ft. to 300 ft., and extending from Richmond to Kingston, had been secured and vested in the Surrey County Council, but there was nothing to prevent the adjoining land from being disfigured by the erection of factories and other unsightly buildings. Important new means of communication could also be opened up, including a bridge from Eel Pie Island.

Mr. Cole, who represented the War Office, asked for Kneiler Hall and Hounslow Heath to be excluded from the scheduled area, stating that the Local Government Board had no power to sanction the inclusion in the scheme of any Crown property.

This exclusion of Crown property from the



Bruxelles-aux-Champs.

Plan d'ensemble et Profil en Long de la jonction des Boulevards de 2^e ceinture avec ceux de 1^{re} ceinture.

scope of the Act is a point that may cause trouble in the future unless those responsible for the administration of the Crown lands show an equal amount of discretion and good taste when carrying out works within the area of a scheme. Considerable annoyance was caused in Edinburgh by the way in which the Government officials ignored the amenities of the neighbourhood in one of the residential streets. In the case of Hounslow Heath and Kneller Hall we presume the main idea of the War Office would be to preserve them as they are now, and not to promote building schemes which might clash with the general town planning scheme.

Extension of Streatham Common.

It is proposed to extend Streatham Common by the acquisition of the Rookery Estate of about 3 acres at a cost of 3,000*l*. The London County Council, having inquired whether the Wandsworth Borough Council would be prepared to subscribe towards the expense, a sum of 300*l*. was voted by the Wandsworth Council, in spite of the opposition of one of the Councillors, who thought that the Common was big enough, "taking into consideration the dog-in-the-manger attitude of the London County Council in refusing to give up a small corner of the Common for a public improvement." If the London County Council had not taken up this dog-in-the-manger attitude we presume the Common would not be big enough.

This scheme, by E. S. Brassey, architect, for dealing with the whole problems of the outskirts of Brussels, and for taking advantage of the open spaces and pleasant rural aspects still remaining in close proximity to the city, is, in the authors' words, an attempt to transform the circular expansion of the town into a star-shaped figure, between the points which would be preserved for ever light and breezy intervals promising better things beyond.

It was recently submitted to the Société Centrale d'Architecture, and formed the subject of a paper at the Town Planning Conference at the Royal Institute of British Architects, by whose courtesy we are enabled to publish this plan.

A Possible Garden Suburb.

A RESIDENT in Beulah writes to express surprise that at a time when so much has been heard of a high standard of living, and beautiful surroundings as necessities for a place of residence, the fine wooded slopes of Norway should have escaped the notice of those who look out for the nucleus of a garden suburb. Within easy reach of town, and adjoining main roads already paved, drained, and lighted, are acres of meadows and timbered slopes as high as the dome of St. Paul's, commanding extensive views of the Surrey Hills, and with a statistical death-rate of only 8 per cent.

THE BUILDING TRADE.

RAILWAY COMMISSION REPORT.

THE Royal Commission appointed to inquire into the working of the conciliation scheme in connexion with railways is to be congratulated upon having ended its labours, and issued a unanimous report in a remarkably short space of time, and any of the delay too often associated with the appointment of Royal Commissions. As far as the general public is concerned, by the most important finding of the Commission is that which relates to the recognition of trade unions. On this point the Commissioners report:—"We think that, with great responsibilities, the companies, and should not, be expected to permit intervention between them and their men subjects of discipline and management. Companies, it will be remembered, control that any intervention between them and the men on questions of discipline management would render it impossible for companies to carry out their statutory duties, and would endanger the public safety. Conciliation Boards, according to the recommendations of the Commissioners, as heretofore, deal with questions relating to rates of wages, hours of labour, or conditions of service than matters of discipline and management, and, as regards the Conciliation Boards, are proposed to be given to the men to act as a secretary, whether an employee or a outsider, who shall act as their advocate, shall not have power to vote unless he be elected member. Under the scheme of such a power was not conferred until the stage of conciliation an arbitration—had reached, but under the new scheme the fact that the men's advocate should have no voice in the proceedings in the earlier

comprehensive scheme of conciliation is proposed by the members of the Commission into the details of which we do not intend to enter here; the provisions of the scheme include the abolition of the Central Board, which, it will be remembered, was a body which obtained support from witnesses on both sides, and they, as far as possible, are directed to securing finality for the decisions of Conciliation Boards. Thus Art. 46 lays down that "All settlements arrived at, whether by agreement of the two sides or by decision of the Chairman, shall be final and binding for the periods of operation on both the company and the employees, the ratification of any of these parties being required." In connexion, however, the Commissioners point out that they have not considered it duty to prescribe how contracts are to be enforced nor how the breach of them should be penalised; but they make an appeal to railwaymen to maintain the high standard and tradition of the service. Existing agreements and contracts, it is recommended, should remain in force until July, 1912, and thereafter, unless altered or nullified, the new scheme is to be in force until November, 1914.

As far as can be seen on first inspection, the Commissioners have not only worked expeditiously, but thoroughly, and have produced a report deserving, at any rate, of careful consideration by all those who have any interest in the building trade.

During the sittings of the Royal Commission have abstained from making any comment on the English railway strike and the evidence given before the Commissioners, but now the question is no longer *sub judice* we remark on the extraordinary absence of grievances disclosed in the evidence which justify the men in the action taken by them in dislocating the whole carrying trade of the country. The Commissioners do not find the companies guilty of any obstructive policy to prevent the full fruition of the scheme of 1907. On the contrary, they find both sides considered arbitration as the best method of settling disputes, and that the earlier channels were in consequence somewhat neglected. The Report appears to have been received with much dissatisfaction by a

considerable body of railway workers—probably, as we hope, the result of not knowing what the Report really recommends.

That some grievances may exist in the railway service as in other industries no one would deny for a moment, but in the interests of the men we would urge them never again to be led into inflicting such grievous loss on the community and alienating the public sympathy by the ill-considered actions which have characterised the recent strikes, and for causes so little apparent.

DUTIES ON LAND VALUES: REPORT OF COMMISSIONERS.

THE Report of the Commissioners of Inland Revenue, dealing, as it does, for the first time with the duties on land values under the Finance Act, 1909-10, contains some information of interest, especially to those who, like builders, have an interest in dealings with land.

The Commissioners state that the number of hereditaments to be valued in the three kingdoms approximates some 11,000,000, and that some years must elapse before the provisional valuations can be completed; they also refer to the parallel of the Domesday Book, and mention the fact that in one case at least property has been found to remain in the same family since the original Domesday Book record—a fact historically interesting.

The Commissioners observe that "the increment value duty in the nature of things cannot be expected to yield much during the early years of its existence," and the truth of this observation is apparent; they also observe that, pending the setting up of the machinery of valuation, the collection of the reversion duty and the undeveloped land duty has been retarded, but it surely must be a matter for surprise that the duties on land values have but yielded 520,800l. In this sum is apparently included the mineral rights duty, which is stated to have realised the full amount expected, and from the total have to be deducted the heavy expenses incidental to the valuation, including the salaries of a very large staff.

Having regard to the observations of the Commissioners as to the difficulties to be encountered, and the feeling of general uncertainty engendered among landowners by this Act, the question may well be asked whether any other form of taxation more equitable in its incidence, less cumbersome in its machinery, and less liable to injure already depressed industries could not have been devised.

Under the heading "Reversion Duty" the Commissioners comment on the unexpectedly small number of returns, but 559 accounts having been received, and the duty paid in respect of undeveloped land duty appears to have been 1,189l. in 1909-10 and 1,162l. in 1910-11.

There is much other matter in the Report worthy of study, but we must refer our readers to the Report itself for further information.

THE EMPLOYERS' PARLIAMENTARY COUNCIL: THE TRADE DISPUTES ACT (1906).

THE following is a copy of a Memorial sent by the Employers' Parliamentary Council to the Prime Minister on October 20:—

"The undersigned Central Employers' Associations connected with the various industries in the United Kingdom beg leave most humbly to call your attention, and the attention of His Majesty's Government, to the grave evils which have arisen in consequence of the Trade Disputes Act, 1906, and to the present combination of labour unions for the purpose of promoting national strikes fraught with incalculable loss and immense suffering to the community.

It is submitted, that recent events have demonstrated that picketing during trade disputes and strikes results in intimidation, frequently accompanied by outrage, violence,

and destruction of property; and that the "peaceful persuasion" of a mob of unlimited numbers, who may "attend at or near a house or place where a person resides or works or carries on business or happens to be," is a form of tyranny so gross and monstrous as to completely negative the rights of every law-abiding citizen who declines to subject himself to labour-union domination.

It is also submitted that, the law having relieved labour unions of responsibility for their actions during trade disputes, these bodies are thus specially privileged to do wrong to others, and that such immunity has resulted in great injury to the trade and commerce of the country.

It is further submitted that the federation of the labour unions of the United Kingdom into one gigantic body having for its object the organisation of strikes on a national scale is a conspiracy against private freedom, industrial peace, and national well-being, with which no country governed by just laws should be menaced.

It is therefore most respectfully urged:—

I. That picketing should either be rigorously suppressed or the number of pickets should be limited to two, and such pickets should be required to wear a distinguishing badge, and to attend only where a person works or carries on business.

II. That unions, whether of workmen or masters, should be subjected to the ordinary law of the land, and made responsible, like all other classes of the community, for their actions.

III. That a federation of unions for the purpose of "paralysing the country" by means of a general strike or lock-out, throwing all industries and communications into disorder, and stopping the food supplies of the nation, should be suppressed as an unlawful combination and immediately so proclaimed."

The memorial is followed by the names of a number of employers' associations, including the Employers' Parliamentary Council; the National Federation of Building Trades Employers of Great Britain and Ireland; London Master Builders' Association; Scottish Building Trades Federation; the Glasgow and West of Scotland Building Trades Employers' Council; Glasgow Building Trades Exchange; National Federation of Slate Merchants, Slaters, and Tilers; the National Association of Master Monumental Masons and Sculptors; the National Association of Master Heating and Domestic Engineers; National Association of Master Plasterers; Scottish Master Plasterers' Association; the Confederated National Association of Master Plasterers, Plumbers, and Slaters; the Institute of Plumbers; the National Association of Master Plumbers; United Kingdom Granite and Whinstone Quarry Masters' Association; the London Association of Master Decorators; the Central Association of the Lime and Limestone Industry of Great Britain.

LONDON MASTER BUILDERS' ASSOCIATION.

A COUNCIL meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on Thursday, the 19th inst.

The Finance Committee's report was read and approved, and the report of the Carpenters' and Joiners' Conciliation Board meeting was reported.

The Council gave its consideration to matters relating to the Industrial Council appointed by the Board of Trade, to a petition that had been lodged against the Trade Disputes Act (1906), and to various other trade matters, to the erroneous report in the Press of the annual meeting of the London Association of Slate Merchants and Master Slaters, and to the next issue of the handbook.

The following were elected as Associate members of the Association:—The Metropolitan Asphalt Company, Messrs. C. Loosley & Sons, and Messrs. F. A. Clark & Son.

The following were nominated for membership:—As ordinary member, Mr. A. E. Symes; Associates, Messrs. J. Russell & Co., Ltd.

REINFORCING CONCRETE IN UNDERPINNING.

OUR attention has been called to an exceedingly ingenious and very simple method of reinforcing concrete in underpinning. Mr. C. R. Price, of 87, Bishopsgate, E.C., the originator of the idea, has explained to us the working of it, and mentioned the names of several well-known architects to whom he has shown the drawings, and who have expressed their warm approval of it.

It has always been a difficulty with those who have had much experience in underpinning how to be sure of getting a proper adhesive setting between the blocks or piers of concrete which of necessity have to be put in in 3-ft. or about 3-ft. lengths, and no matter how particularly the work is supervised, or how good a builder is engaged, an ordinary workman is quite capable of leaving a film of clay or earth on the first piers when filling in the intermediate pieces; then, let the rest of the work be ever so well done, the whole is no better than that one doubtful joint. Concrete is put in to distribute the weight over a large area, and, seeing that the bottom of the concrete is in tension, it is at once apparent how vital such weakness is.

The whole object of Mr. Price's idea is—(1) To make it impossible to get any earth at any time between the meeting faces of concrete, thus ensuring a clean joint; (2) to get a grooved and tongued or joggled joint, thus avoiding the straight joint and its weakness; and (3), by far the most important, to get a continuous length of adequate reinforcing throughout the whole length of the underpinning.

The cost, in any case, is very moderate, and in many cases money can actually be saved, as district and borough surveyors will accept less depth of reinforced concrete than would be required in the ordinary way.

We are able to reproduce a drawing of the scheme, which explains itself, and Mr. Price offers to send to any who are interested details and further particulars if they will apply to him at 87, Bishopsgate, E.C.

GOVERNMENT CONTRACTS.

THE following tenders have been accepted during the past month by the Government departments named:—*War Office*: works services—alterations and additions to York Military Hospital—Mr. W. Bellerby, Eungate Sawmills, York; alterations, etc., at Duke of York's headquarters, left wing of main block—Messrs. Thomas & Edge, Woolwich; alterations, etc., to married quarters, Ashton-under-Lyne—Mr. J. Ridyard, Railway Sawmills, Ashton-under-Lyne; erection of annexes and alterations to married quarters, Canterbury—Messrs. Johnson & Co., 97, Southwark Bridge-road, S.E.; erection of annexes and alterations to married quarters, Beverley—Mr. A. Robin-

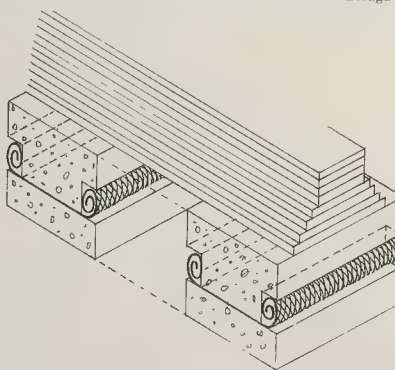
son, Woodbine Works, Idlo, Bradford; erection of annexes and alterations to married quarters, Gosport—Mr. J. Hunt, South Wharf, Cleve-land-road, Gosport; erection of barrack blocks, Whittington Heath Barracks, Lichfield—Messrs. T. Lowe & Sons, Curzon-street, Burton-on-Trent; erection of canteen and recreation establishment at Horfield Barracks, Bristol—Messrs. G. Pollard & Co., Taunton; erection of fire-engine shed, etc., Preskon—Mr. R. Holt, 50, Badger-street, Bury; erection of officers' quarters, Netheravon—Messrs. W. E. Chivers & Sons, Devizes; improvements to sergeants' mess, Halifax—Messrs. T. Obank & Sons, Cyprus Works, Thackley, Bradford; installation of heating apparatus, left wing, main block, Duke of York's headquarters—Messrs. E. Deane & Beal, Ltd., 1, Arthur-street East, London Bridge; installation of heating apparatus, Hulsea Hospital—Messrs. J. F. Phillips & Sons, Queen Anne's-chambers, S.W.; miniature rifle range, Wormwood Scrubs—Messrs. T. Wood & Sons, Ltd., Crockerhill, near Swanley, Kent; periodical works services at Norwich and Woolwich (hospital)—Messrs. Skovington Bros., Bateman-street, Derby; provision of brick fireplaces to officers' quarters at Bulford—Mr. J. Crockerell, Bulford Camp; renewing paving and fittings at troop stables, Hounslow—Messrs. Johnson & Co., 97, Southwark Bridge-road, S.E. *India Office*, *Store Department*: bridgework—Messrs. Bruthwaite & Kirk, West Bromwich; Messrs. Brandon Bridge Building Company, Motherwell; Messrs. Dorman, Long, & Co., Middlesbrough; Patent Shaft, etc., Company, Wednesbury; tiles—Messrs. Malkin Tile Works Company, Burslem. *Crown Agents for the Colonies*: steel bridgework—Thames Ironworks Shipbuilding and Engineering Company, Canning Town, E.; bridgework—Messrs. Sir W. Arrol & Co., Ltd., 32, Victoria-street, S.W.; cement—Messrs. Martin Earle & Co., Ltd., 137, Queen Victoria-street, E.C.; Barron's Cement Company, Ltd., 6, Lloyd's-avenue, E.C.; Associated Portland Cement Manufacturers, Ltd., 8, Lloyd's-avenue, E.C. *Office of Works*: builders' work, Eltham Palace restoration—Messrs. J. Thompson & Co., 43, Wood-street, Pease borough; General Post Office, north, extension of dining-room—Messrs. H. F. Webb & Co., Longfellow Works, Walthamstow; Glasgow Head Post Office, reinforced concrete work—Messrs. Perry & Co. (Bow), Ltd., 56, Victoria-street, S.W.; Stoke Newington branch Post Office, alterations—Messrs. J. Groves & Son, Forster-road, Tottenham; drainage, Houses of Parliament, revision of drainage and diversion of rainwater—North British Plumbing Company, Ltd., 15, Cartaret-street, S.W.; residences, Kew Gardens—Messrs. Dunt & Hellyer, Ltd., 35, Red Lion-square, W.C.; urinals and fittings—Messrs. George Howson & Sons, Ltd., Eastwood Sanitary Works; General Post Office, laying pipes and ducts (Park Exchange Area, London)—Messrs. Grief & Matthews, 35, Queen Victoria-street, E.C.; laying pipes (Leeds-Hull)—Messrs. Robson, Eckford & Co., Hawick, N.B.; laying pipes from Chepstow River Bridge to Newport, Mon.—Mr. C. J.

Nevitt, Bailey-street, Stafford; Mr. W. son, Yeaman-lane, Edinburgh; laying (West Ham)—Messrs. Grounds & New Page Green, South Tottenham, N. *M. zolitan Police*: erection of a new police station at Streatham—Messrs. Godson & Son, 215, burn-lane, N.W. *Commissioners of Public Works, Ireland*: building works—erection Castlereagh Post Office, Co. Roscommon—Mr. G. H. Dawson & Co., 93, Amiens-street, Dublin; drainage, Royal Irish Constabulary Depot, Dublin—Messrs. Bairds, Ltd., 1, Abbey-street, Dublin; fittings, etc., Water Post Office—Mr. Alex. McDermott, Castle Enniscomorthy.

GENERAL BUILDING NEWS.

ST. PETER'S CHURCH, HARROW.

THE foundation-stone of this church was on October 16 by Lord Ashcombe. The church will be built from the designs of G. H. Fellowes Prynn, F.R.I.B.A., of Westminster. The architect has chosen a free treatment of the Decorated style. As both the east and west ends are comparatively hidden from view, little elaboration of detail will be necessary. The western entrance porch will be placed on either side of an apsidal baptistry, other entrances to the church being placed the west end of the north and south transepts. Separate entrances are also arranged for chapel and vestries at the east end. The church consists of a nave, 84 ft. long by 30 ft. wide, divided into five bays, giving accommodation for 450 right in front of the chancel. As has been stated, a baptistry flanked by two porches is placed at the west end. North and south lean-to aisles are placed against three western bays of the nave arcade; transepts are thrown out from the two bays on either side. The north transept forms, as it were, the nave of the side chancel. The chancel, which is 33 ft. long by 27 ft. broad, gives accommodation for forty-four, including clergy and choir, and room for a sanctuary. The altar is raised five steps from the chancel floor, and the nave floor level, considerable space is allowed on the east wall above the altar, for a future roscods or decorations, so that the whole effect may be more spacious. Side passages are placed either side of the chancel for returning communicants, and arches open north and south giving a view of the east and from the chancel into the nave. Over the passage on the north side a partly-hidden gallery will be constructed as a musicians' gallery, the organ chamber being placed on the opposite side of the vestries. A large choir vestry opens into the side chancel passage, which also communicates with the clergy, vestry, and sacristy, and a separate porch and lavatory are arranged. The roof will be of barrel form, which affords an acoustic point of view is found to be the best form of roof. The nave and chancel are carried to one level, the apex being 40 ft. from the nave floor level. The chancel arch will be carried to the whole height of the nave roof, a screen and rood beam be-



Mr. Price's Method of Underpinning.

The diagram shows, for the purpose of convenience, underpinning carried out in 3-ft. lengths (it is quite immaterial for the scheme what lengths are done at a time, either of the concrete or the "dumplings" left in to carry the wall while underpinning). Presuming the concrete is to be 3 ft. deep, 12 in. is put in the bottom, and on to this is placed a length of strong and large mesh-expanded metal curled up at the ends; over these curled ends are placed sheet-iron covers, which can be re-used any number of times, and the remainder of the concrete is filled in. This is done in all the first piers, then when the side towards one another, and another piece laid over the joint to ensure proper strength, and the result is a continuous length of reinforcing. Enormous additional strength over ordinary underpinning is obtained, and in many cases at less cost, because less bulk is required.

within the arch. The builders are Messrs. Webster & Cannon, of Aylesbury, tender for the complete work was 8,188*l*.

ADDITIONS TO COLLEGE, EXETER.

Plans for these new buildings were prepared by Messrs. Tait & Harvey, and the cost of erection has been about 16,400*l*. It is intended later on to erect a college hall and dining for the technical department.

NEW COUNCIL OFFICES, DUNFERMLINE.

The Parish Council have accepted the plans of Messrs. Muirhead & Rutherford, architects, for the new Parish Council offices, estimated cost being 5,860*l*. This selection resulted of a competition among the local architects. Mr. Clifford, of Glasgow, being adjudicator.

NEW PARISH HALL, LIVERPOOL.

Messrs. Morter & Dobie, of Liverpool, are architects of St. Catherine's New Parish Hall, which is being erected at a cost of 1,500*l*. The seating accommodation is for 400, and the hall was carried out by Messrs. G. E. Hall, builders, of Liverpool.

WEST OF SCOTLAND COLLEGE, GLASGOW.

At a recent meeting of the Governors of the West of Scotland Agricultural College, the plan of new College buildings was considered. The Committee reported that there were three alternatives, viz.:—(1) To dispose of the present buildings in Glasgow and Arbroath and to provide a new College all situated on a suitable farm, and (2) to erect in one building or series of buildings all the requirements of the College in agriculture, dairying and cognate subjects, to retain the present buildings at Killock and to supplement these by the erection of additional buildings to meet the requirements of the College, excepting provision to be made in Glasgow for continuing evening classes there. (3) To extend the present buildings in Glasgow, or obtain additional buildings close at hand, with or without a demonstration area adjacent to the land to retain the present farm and dairy at Killock. The matter was decided, so that the question of relative costs be ascertained.

THE COMEDY THEATRE.

The recent alterations and decorations at the Comedy Theatre have been made under the care of Messrs. Frank E. Whiting & Co., of St. Peter, Messrs. Battley, Sons, & Co., of St. Paul, and Messrs. The whole of the entrance has been taken out and fitted with a double row of new swing doors in waxed oak, the exterior reveals, steps, etc., being of waxed with Bastard marble. The old vestibule, with its box office, side entrance, and the whole of this space is a new vestibule, which occupied a space at the side of the vestibule, the passage running along the back of the dress circle, and the room, which was situated in one corner of the bar, have all been swept away, and the whole of this space is a new vestibule and box office. The vestibule is angular on plan, and all the workwork is waxed oak. The floor is laid in small tiles, and the walls panelled to a height of 8 ft. The style adopted is that of Doric Order, the columns and pilasters of grey scagliola marble with antique capitals and bases.

NEW CABINET WORKS, BEDFORD.

New premises, known as the Bedford Cabinet Works, Bedford, have been erected to meet the requirements of Messrs. C. & R. Arding, Ltd., whose chief offices and warehouses are in Curtain-road, London, E.C. New works have been erected on land between the London-road and the Great Northern Railway, Bedford to Hitchin branch, in accordance with the drawings and specifications prepared by the architect, Mr. F. W. Nicholls & Reynolds, Ltd. The new buildings comprise three blocks, covering altogether an area of 45,826 super. ft., which are connected by two enclosed passages; each block has separate sanitary conveniences, and with the timber store, dry kilns, boiler-house, and fumigating oven, cover a further area of 4,312 super. ft. being of one story, with space extensions and workmen's dwellings, etc. The plan of the buildings forms a parallelogram, as being best adapted for the purposes of the private railway siding, which has been constructed and connected to the above branch for the requirements of these works only, which has been made to run parallel to the premises. The walls are of purpose of how concrete building-blocks, the sills and finishings being reinforced with iron and quoins rusticated. The roofs are constructed on the north light principle, every part having had in the spacing, so as to

secure the maximum amount of light. The glazing is the patent system of Messrs. Helliwell & Co., Ltd., and was executed by them with their galvanised "Y" sections steel bars. The joinery was executed by Messrs. Samuel Elliott & Sons, Ltd., Caversham, Reading, the exit doors in corridors being fitted with "Panic" fittings, and glazed with 4-in. Pilkington's wire-work rolled plate-glass, the armoured fire doors being supplied by Messrs. Mather & Platt, Ltd., and fitted with attachments for self-closing in case of fire. The ventilation has been arranged with full allowance for all requirements, the fresh air supply being supplemented by openings in the external walls, with dog-legged flues, fitted with external and internal regulating gratings. The steam heating apparatus is on the vacuum system, the mains being 3-in. and 4-in. flanged cast-iron steam pipes in various sets, each set being provided with a fully automatic valve and a nuvacumette valve on the condense, drop branches being taken from the high level pipes and connected to the heating pipes. The steam heating works were executed by Messrs. Rosser & Russell, Ltd., to maintain a temperature of from 55 to 60 deg. Fahr. with the outside temperature 32 deg. Fahr. The boiler and chimney-shaft and works in connexion therewith were executed by Mr. C. F. Davis. The electric-power installation is supplied by the Bedford Corporation, a great feature being that the shafting for the machinery is in trenches below the floor level, the trenches being constructed of reinforced concrete and hollow concrete blocks, the whole being encased with asphalt executed by Messrs. Lawford & Co. The timber store and drying kilns have a cubical capacity of about 55,000 ft. and 4,600 ft. respectively.

TRADE NEWS.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Drill Hall, Lauder, N.B.

In reference to the article on Messrs. Arding & Hobbs' new presses, Clapham Junction, which appeared in our last issue, pp. 449-453, we may add that the whole of the Bath stone for the work was supplied by the Yockney and Hartham Park Stone Company, Ltd., from their "Kidge Park" Quarry.

The Church of England School at Holywell, Hunts, has recently been fitted with one of D. O. Boyd's hygienic ventilating school grates, supplied by Messrs. O'Brien, Thomas, & Co., Upper Thames-street, London, and Excelsior Works, South Bermondsey.

The Cumberland Infirmary at Carlisle is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

Lines of Frontage and Projections.

Clapham.—Addition over No. 144, High-street, Clapham (Mr. J. S. Beard for Mr. S. H. Beard).—Consent.

Clapham.—Projecting clock in front of No. 192, High-street, Clapham (Greenwich Time, Ltd., for Electric Palaces, Ltd.).—Consent.

Dulwich.—Erection of porches in front of two houses on the eastern side of Underhill-road, Dulwich, southward of No. 102 (Mr. R. Johnson).—Consent.

Fulham.—Retention of a building next to No. 255, Stephendale-road, Fulham (Mr. A. J. Fuller).—Consent.

Hampstead.—Balcony over the porch at No. 27, Briardale-gardens, Hampstead (Mr. J. Gibb for Miss Macleod).—Consent.

Hampstead.—Erection of one-story buildings on the eastern side of West End, Hampstead, northward of Tower-mansions (Mr. F. J. Stannard).—Consent.

Hampstead.—Two houses with one-story bay-windows and porches on the northern side of St. Cuthbert's-road, Hampstead, next to Shoot-up-hill (Messrs. Rix & Wilkins).—Refused.

Kensington.—Illuminated sign at No. 189A, Brompton-road, Kensington (Imperial Lighting Company).—Refused.

St. George, Hanover-square.—Additions at No. 36, Belgrave-mews South, next to the south-western side of Upper Belgrave-street, St. George, Hanover-square (Mr. F. W. Foster).—Consent.

St. George, Hanover-square.—Projecting balcony at the second floor level at No. 24, Conduit-street, St. George, Hanover-square (Mr. A. B. Jackson for Mr. G. Boudon).—Consent.

St. George, Hanover-square.—Projecting oriol window in front of No. 65, Brook-street, St. George, Hanover-square (Mr. G. T. Hine).—Consent.

Width of Way.

Bethnal Green, North-East.—Addition to St. Peter's Church, St. Peter's-street, Bethnal Green, next to the southern portion of St. Peter's-square (Mr. E. T. Dunn for Rev. W. H. Maynard).—Consent.

Hoxton.—Addition at the rear of No. 29, New Inn-yard, Hoxton, next to the passage-way leading to Reliance-square (Mr. F. M. Elgood for Mr. L. W. Thomas).—Consent.

Width of Way, Lines of Frontage, and Projections.

Hackney North.—Erection of No. 9, Stamford-grove East, Hackney, with a two-story bay-window and a hood (Mr. F. Bull).—Consent.

Lewisham.—Erection of six coal-shed buildings at the Merchant Taylors' almshouses on the eastern side of Brandram-road, Lee (Mr. R. H. Mew for the Merchant Taylors' Company).—Consent.

Marylebone, West.—Retention of a wood and glass covered way in front of No. 15, Elm Tree-road, St. John's Wood (Mr. H. W. Holman).—Consent.

Lines of Frontage and Construction.

Finsbury, East.—Three external iron gangways at the rear of No. 59, City-road, Finsbury, to abut upon the northern side of Oliver's-yard (Messrs. M. W. King & Sons for Mr. J. Kent).—Consent.

Hackney, South.—Temporary wood and iron building at No. 159, Chatsworth-road, Clapton (Mr. E. White).—Consent.

Holborn.—Erection of two iron and glass shelters, next to Drury-lane, at the Middlesex Music Hall, Drury-lane and Shelton-street, Holborn (Messrs. F. Matcham & Co.).—Consent.

Lewisham.—Temporary wood and glass showcase in front of No. 6, Standon-park, Lewisham (Mr. E. Tompkins).—Consent.

Peckham.—Temporary showcase in front of No. 2, Ryelane, Peckham (Messrs. Windybank, Samuel, & Lawrence).—Consent.

Width of Way and Construction.

Marylebone, West.—Temporary shed at No. 12, Gray's-buildings (Messrs. Steinway & Sons).—Consent.

Rotherhithe.—Temporary pay-box at the Bronze Athletic Ground, Yeoman-street, Rotherhithe (Mr. A. J. Walkley).—Consent.

Width of Way and Height of Buildings.

Finsbury, East.—Erection of a building upon the site of Nos. 15 and 16, Beyer-street, Finsbury (Messrs. Lovegrove & Papworth for Mr. C. Clifford).—Consent.

Line of Frontage, Alteration, and Conversion of Buildings.

Lambeth, North.—Erection of balconies at No. 65 to 79, Stamford-street, Lambeth; projecting architectural features in front of Nos. 75, 76, 77, and 78, Stamford-street, and the formation of openings in the party walls at the basement, ground, first, second, and third floor levels (Mr. G. Bartlett for the Duchy of Cornwall).—Consent.

Omission of Footings.

Westminster.—Omission of footings to the walls and piers of a proposed building on the southern side of Great George-street, Westminster, between Nos. 1 and 8 (Mr. J. Miller for the Institution of Civil Engineers).—Consent.

Cubical Extent.

Westminster.—Additional cubical extent in respect of the proposed erection of an additional (fifth) story at the Army and Navy Stores, Victoria-street, Howick-place, and Francis-street, Westminster (Mr. W. V. Falkiner for the Army and Navy Co-operative Society, Ltd.).—Refused.

Westminster.—Additional cubical extent in respect of the proposed erection of an additional story to Ruskin House, Rochester-row, Westminster (Mr. A. Keen for Mr. W. Morris).—Refused.

Uniting of Buildings.

City of London.—Uniting of No. 70, Old Broad-street, City, with No. 25, Throgmorton-street, by means of an opening at the basement level (Messrs. R. Cross, Harrison & Son for Messrs. C. J. Hambro & Son).—Consent.

City of London.—Openings fitted with doors of special construction in lieu of iron doors in the party wall between the basement, ground floor, and first floor of Nos. 28 and 29, Upper Thames-street, City (Check Fire Door Company for Messrs. Siemens Brothers).—Consent.

City of London.—Uniting of Nos. 25, 28, and 30, Duke-street with No. 24, Duke-street, Aldgate, by means of openings at the ground and first floor levels (Levland and Birmingham Rubber Company, Ltd.).—Consent.

Stepney.—Alterations and the erection of an addition to the bottling store at the premises

of Messrs. Mann, Crossman, & Paulin, Ltd., Russell-street, Mile End (Mr. W. Stewart).—Consent.

Whitechapel.—Armoured doors in lieu of iron doors to openings in a party wall between No. 49, Mansell-street and No. 22, Great Alice-street, Whitechapel (Messrs. Mather & Platt, Ltd., for Mr. F. Selby).—Consent.

Cubical Extent and Uniting of Buildings.
Islington.—Motor omnibus garage approached from the northern side of Holloway-road, Islington, with two divisions exceeding 250,000 cubic ft. in extent, and the use of roller shutters to openings between the two garages (Messrs. A. L. Gibson & Co.).—Consent.

The recommendations marked + are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Enlargement of school (200 extra places); Mr. T. G. James, Secretary, Education Committee, Monmouthshire County Council, Newport.

Altofts.—School (3,600); Mr. W. V. Dixon, Secretary, Education Committee, West Riding of Yorkshire County Council, Wakefield.

Antrim.—Houses; Mr. W. D. R. Taggart, Antrim.

Arkwold. (County Wicklow).—Six houses (900); Mr. A. McGowan, builders, South Quay, Arkwold.

Arnside.—Enlargement of St. James's Church (3,750); Messrs. Austin & Paley, architects, 24, Castle park, Lancaster.

Banbridge.—Nineteen houses; Mr. J. Boyd, builder, Muinabane. Four houses; Mr. T. Callen, builder, Tandragee.

Bandon.—Scheme of labourers' cottages (20,120); Surveyor, Bandon Urban District Council.

Barking. Four houses; Architect to the Barking Urban District Council. A plan has been passed for a motor garage, Hurstbourne-gardens, for Messrs. J. W. Garland, sen.

Barby.—Sewage pumping station (385); Messrs. Parker & Sharpe, builders, Peaseholme Green, York.

Barnsley.—Alterations to offices, Regent-street, for the Barnsley Permanent Building Society.

Bedford.—Church; Vicar, St. Leonard's, Bedford.

Birtley.—School; Mr. W. Rushworth, Architect, Shire Hall, Durham.

Bishop Auckland.—Alterations to block of old infirmary buildings; Mr. S. Adams, Clerk, Board of Guardians, Bishop Auckland.

Blackrock.—Rebuilding Dundamon Castle; Mr. F. J. McMillen, architect, South Quay, Cork; Messrs. J. Sisk & Son, builders, Cork.

Bolton.—St. Barnabas Church (10,000); Mr. F. R. Freeman, architect, 13, Bowker-street, Bolton; Messrs. J. C. & F. Wood, builders (first portion), Darbshire-street, Bolton.

Branley.—Enlargement of school (400 extra places); Mr. W. Packer, Secretary, Education Committee, Leeds Town Council.

Brierley Gap.—Alterations at sanatorium (1,700); Mr. T. H. Richardson, Surveyor, Hemsworth Rural District Council.

Brimington (near Chesterfield).—Proposed institute (2,000); Vicar, Parish Church, Brimington.

Bromyard.—Wesleyan church; Messrs. Groome & Bettington, architects, King-street, Hereford.

Burhill.—Club house; Secretary Golf Club, Burhill.

Cardiff. Block of offices, Queen and Priory streets; Messrs. Habershon, Fawcner, & Co., architects, Mary-street, Cardiff.

Carshalton.—Church. Ruskin-road (3,000); United Free Methodist Trustees, Carshalton.

Chard.—Enlargement of Corn Exchange, also new municipal offices, etc. (2,000); Mr. S. G. Rogers, Surveyor, Chard Town Council.

Cottingham.—Proposed parish hall; Mr. J. H. Hanson, Surveyor, Cottingham Urban District Council.

Coveentry.—Rectory; Vicar, St. John's Church, Coveentry.

Dewsbury.—Extensions, municipal buildings; Mr. H. Dearden, Surveyor, Dewsbury Town Council.

Dunston (Newcastle-on-Tyne).—Dry soap works, etc., adjoining existing works, for the Co-operative Wholesale Society, Ltd.

Easington.—Miners' homes; Messrs. C. Johnson & Son, Easington.

Eastbourne.—The following plans have been passed:—Additions to Walden Lodge, Carlisle-road, for Mr. C. de Broe; Mr. F. G. Cooke,

architect. Motor house, "Escalonia," for Mr. Andrew Wise; Mr. C. Crisford, architect. The following plans have been lodged:—Public house, Havelock-road, for the Star Brewery Company; Mr. F. Cooke, architect. Additions. Royal Marine Hotel, for Col. Cardwell; four houses, Victoria-drive, for Mr. F. G. Collins.

Eccles.—Proposed cinematograph theatre adjoining library, for Mr. H. Langman. A plan has been passed for a lodge at Barton Hall Engine Works, Hardy-street, Peel Green, for Messrs. L. Gardner & Sons, Ltd.

Elworth.—Wesleyan church and school avenue (1,500); Messrs. Birchall Brothers, builders, Middlewich.

Four Crosses.—School; Messrs. Jones Brothers, builders, Bontnewydd, Carnarvon.

Fulwood.—Church (3,000); Wesleyan Trustees, Fulwood.

Garliston.—Additions to school (800); Sobie School Board (Wigtownshire).

Great Cressingham.—Proposed housing scheme; Mr. W. V. Twaite, Surveyor, Swaffham Rural District Council.

Hallifax. Church (11,000); Vicar, St. Paul's Church, King Cross, Halifax.

Halstead.—Enlargement at factories for Messrs. S. Courtauld & Co., silk crape manufacturers.

Heacham.—Enlargement of school (900); Mr. W. V. Bushell, Secretary, Education Committee, Norfolk County Council, Norwich.

Heburn.—Picture hall, Albert-street; architect, care of the Gem Picture Theatre Company, Jarrow.

Hillgay.—School; Mr. W. V. Bushell, Secretary, Education Committee, Norfolk County Council, Norwich.

Horbury.—Sunday-school; Pastor, Wesleyan Chapel, High-street, Horbury.

Horden Colliery.—St. Mary's Church; Messrs. J. Potts & Son, architects, 57, John-street, Sunderland; Mr. W. Paerson, builder, West Hartlepool.

Houghall.—Extensions to hospital (550); Mr. F. D. Courson, builder, Glasgow.

Hurst.—Sunday-school; Primitive Methodist Trustees, Hurst.

Jarrow.—Alterations to Gem Picture Theatre, North-street; architect, care of Gem Picture Theatre Company, Jarrow.

Keillor.—Improvements at Keiller House; Mr. John Smith, builder, New Alyth.

King's Lynn.—Alterations to premises, Norfolk-street, for the Working Men's Co-operative Society.

Kingussie.—Three houses (1,700, each), for the Highland Industries Company.

Kirkstall (Leeds).—Church schools; Pastor, Zion United Methodist Church, Kirkstall.

Lacey.—Isolation hospital; Mr. E. Rushton, Engineer, Cleethorpes Urban District Council.

Lakenham.—School; Mr. C. J. Brown, architect, Cathedral Offices, Norwich.

Langwith.—Twenty-six houses, for the Sheepbridge Coal and Iron Company, Bolsover.

Llanystumdwy.—Institute; Mr. T. Rees, architect, Richmond-street, Brecknock.

Linthwaite. Dye-house, Blackrock Mills, for Messrs. Chas. Lockwood & Sons, Ltd.

Lowestoft.—Parish hall; Vicar of Lowestoft.

Messing.—School; Mr. F. Willmott, architect, Duke-street, Chelmsford.

Messing.—Roman Catholic church (6,000); Messrs. W. H. Bryne & Sons, architects, 20, Suffolk-street, Dublin.

Meopham (Kent).—Pumping station, Walmit's-road; Messrs. W. H. Archer & Son, builders, Gravesend.

Mossley.—Eight houses and shops, Carrbrook, for the Calico Printers' Association.

New Mills and North Darley.—Schools; Mr. G. Widdows, architect, St. Mary's Gate, Derby.

Newcastle.—Dispensary residence for medical officer (1,000); Architect, care of the Clerk, Rathfrum Board of Guardians.

Newry.—Fifty-two cottages (8,840); Surveyor, Newry No. 1 Rural District Council.

Norwich.—Buildings at electricity works (2,950); Messrs. G. G. Stowers & Son, builders, 143, Sprowston-road, Norwich.

Parkstone.—Proposed completion of nave of St. Osmund Parish Church (7,000); the Vicar.

Pole.—Additions to school, Courthill-road (2,660); Architect, care of Mr. C. Lisby, Secretary, Education Committee, Pole Town Council.

Port Glasgow.—Halls, Victoria-street, for the Kirk Session of the Parish Church.

Pwllhel.—School; Mr. R. L. Jones, architect, Market-street, Carnarvon.

Radcliffe.—Sixty houses off North-street; Mr. W. L. Rothwell, Surveyor, Radcliffe Urban District Council.

Reddish.—Picture palace, Gorton-road, for the Reddish Cinematograph Company.

Richmond.—Alterations to Star and Garter Hotel; Mr. W. A. Lewis, architect, 11-12, Finsbury-square, E.C.

Romford.—Enlargement of Victoria Cottage Hospital (900); General Committee.

Salford.—The following plans have been passed:—Rebuilding lodge, Peel Park (400); Mr. Matley, architect, Manchester; temporary billiard hall, Eccles New road, for the Temperance Billiard Halls, Ltd.; reconstruction saw-mill, Vere-street, Salford; extensions, Nons-street, and Sydney-street, Hospital; extensions, North Manchester Grammar School, Tetlow-lane, and Leicester Broughton.

Shawforth.—School; Vicar, St. Michael's Church.

Sheffield.—Proposed children's hospital, junction of Nursery and Johnson streets, for the Trustees of the Sheffield Children's Hospital.

The following plans have been passed:—Houses, Meadow Bank-avenue, for Mr. M. grave; additions, premises, Milner-road, Messrs. Brown, Bayley's Steel Works, Ltd.

Stratford-on-Avon.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

Spenny Valley.—Additions to exchange mill (has. Hirst & Sons, Ltd.).

* See also our list of Competitions, Contracts, etc., on another page.

brought to the attention of the public. A steam car company was summoned under the by-laws of the Camberwell Borough Council, made under sect. 16 of the Public Health (London) Act, 1891, in respect of oil waste deposited on the roads. The by-laws provide

some small items, such as a lightning conductor being erected. He said the original contract price was being exceeded by about 1,800*l.* in connexion with the additional work which was ordered. In September the work was completed, and the defendant moved into the house and made serious complaints about the character of the work. Early in January, 1911, Mr. Stanborough's account was completed and forwarded to the defendant. According to the account delivered, the defendant's liability was about 21,000*l.*, and at that date the defendant had on the certificates of the architect paid the plaintiff about 16,000*l.* The architect gave the builder a further certificate for 1,500*l.*, and he wrote to the builder that the defendant was very dissatisfied with the work. Plaintiff afterwards claimed a further sum of 3,000*l.*, but the defendant declined to make any further payment in connexion with the matter.

The Official Referee then read at considerable length the correspondence in the case detailing the granting by Mr. Foster of the certificate for 2,750*l.*, which was sued upon, and also the certificate for 533*l.*, which the plaintiff also sued for in reply to the defendant's counterclaim, the termination of the defendant's appointment and the appointment by the defendant of Mr. John Murray as his architect. The defence in the action, the learned Referee, continuing, said, was delivered in March, 1911.

There was first the plea of a denial of indebtedness which, under the rules and the Judicature Act, might be disregarded, and defendant also pleaded that the architect had no right to give the certificates that he had given, and he based his counterclaim upon the fact that numerous variations had been made from the contract without his authority; further, that the work done and materials supplied under the contract for extra work were unsuitable and not in accordance with the contract, and also that the prices charged by the plaintiff for extra work were excessive. Those were the really effective matters of the counterclaim, under which the defendant claimed damages for a sum largely exceeding the plaintiff's claim. The trial commenced on July 5, 1911, and was continued without interruption until August 19. The plaintiff, by his Counsel, did not content himself by alone relying upon the architect's certificates, but took upon himself the task of meeting and disproving the charges made by the defendant.

The general effect of the evidence of the plaintiff and of his expert witnesses was that as far as the plaintiff was concerned he had generally fulfilled the conditions of the contract; that he had by the contract to follow the directions of the architect; that some of the alterations and deviations were due to the defendant's own fault, and that the work was done under the direction of the architect or the defendant and his wife. It was also said in effect by the plaintiff and his witnesses that if the matter had not been taken out of the plaintiff's and Mr. Foster's hands, matters could have been put right for a very small expense. Defendant's witnesses gave evidence as to the alleged bad workmanship, bad timber, bad joinery work, the improper spacing of the joists, and other matters due to him in the counterclaim, including the fissures and cracks which had appeared in the ceilings and partitions. He (the Official Referee), before addressing himself to the evidence, had first of all to consider the question of principle and the manner in which he had to apply himself to deal with the contract. He thought the architect's certificate created *prima facie* a debt due from the defendant to the builder. The contract provided that the builder was to be entitled to payment of the sum mentioned in the certificate within the specified period. The main ground on which the defendant denied his liability under the certificates for the sums of 2,750*l.* and 533*l.* was that the architect had no authority to give them, his authority having been revoked before they were given. Under the contract the architect had power to grant certificates. The question was whether the certificates for payment by Mr. Foster could in the circumstances stand, and whether the defendant had power to effectively discharge Mr. Foster's authority to grant the certificates for work done. Upon this point reliance was placed upon Clause 3 of the contract, which provided that in the event of Mr. Foster's death, or his ceasing to be the architect for the purpose of the contract, such other person was to be nominated for that purpose by the employer. That clause, in his opinion, did not give the defendant power to terminate Mr. Foster's authority to grant certificates for work done, and even if he had the power, he further found, that the letters which the defendant relied upon on this point did not operate to terminate Mr. Foster's authority. He thought those letters, so far from terminating the

architect's position, recognised that it was continued. Mr. Foster's power was to issue certificates for work done under the contract. He therefore decided that the defendant's plea of a denial of liability upon that ground failed, and that the certificates which Mr. Foster had granted to the plaintiff for 2,750*l.* and 533*l.* were valid certificates. The next question he had to consider was what sum ought to be deducted from those sums in consequence of the charges which the defendant raised by his counterclaim, and to what extent the plaintiff had committed the breaches of contract alleged as to workmanship and materials, and what sum should be allowed the defendant as damages. On this question much contradictory evidence was given as to whether the plaintiff did commit breaches of the contract and conditions. Having referred to the specification and a great deal of the evidence, the learned Referee found that a great portion of the timber which had been used in the building was not of the quality specified, and he was not satisfied that the timber as specified could not be got, and the result was that some of the conditions of the specification were completely ignored in that regard. Next he found that the dimensions of the timber used were not as specified, and that what had taken place in that respect must be considered as deviations from what was specified. He further found that the spacing of the floor joists was in places 18 in. and in others 20 in. apart, which would result, it was said, in great weakness of the floor. He found that the spacing was not in accordance with the conditions specified. He had to decide whether such deviation and defect in workmanship were breaches of contract. It appeared that the architect saw and allowed the wider spacing of the joists. As far as the clerk of the works was concerned, he decided that he had no power to authorise the contractor to disregard Clause 7 of the contract. This clause ran:—"All materials and workmanship shall be of the respective kinds described in the specification, and the contractor shall, upon the request of the architect, furnish him with vouchers to prove that the materials are such as are specified."

It was said with reference to this question that the architect had power, under Clause 12 of the contract, which provided that the contractor should, when authorised by the architect or as provided by Clause 5, vary by way of extra or omission from the drawings or specification, to order or sanction variation. But such a power did not authorise him to depart from the terms of the contract so as to prejudice the strength and stability of the building. He arrived at the conclusion that the acquiescence of the architect as to the wider spacing of the joists, and as to the quality of the timber, did not absolve the plaintiff from his contract to carry out the specification on those heads. Upon those heads, therefore, he found that the plaintiff did commit breaches of the contract.

The learned Referee then referred to the charges made by the defendant as to the alleged defects in the workmanship and the quality of the timber supplied to the roofs, and he found that the timber in both roofs was inferior to that which the plaintiff contracted to supply, and that the spacing of the rafters was wider than that specified, and the rafters were improperly butted, and that some of the rafters provided were too short. He found that other allegations that the defendant had made as regards to the roof were not proved. With regard to the joinery work, he found that the defendant had not discharged the onus which was upon him of proving that the quality of the wood was not as contracted for; but with regard to the workmanship, in that respect he thought there were some defects. He thought, however, there was no doubt that the great heat which had been experienced this summer was very trying to all new joinery work. Having dealt with the items raised as to the slab with the coal house, and the work done in connexion with the coal house, pump house, gardener's cottage, bullfinch's cottage, and dairy, etc., the Referee said that on his visit to Newton Hall in July last he found that the condition of the house was substantially as described by the defendant's witnesses. The weakness of the floors had produced numerous fissures and cracks, some of which were serious, and he found that it was necessary for the stability of the house that remedies of the kind proposed by some of the defendant's witnesses should be adopted. He had come to the conclusion that the remedies proposed to obviate the defects for the plaintiff were insufficient in evidence of the defects; but on the other hand, he was of opinion that the suggestions advanced on behalf of the defendant covered a good deal more than the plaintiff was entitled to require.

The Referee, having dealt with the evidence in detail the sums involved in both claim and counterclaim, and subject to a revision of the

figures, if necessary, before finally entering judgment, entered judgment as follows:

On the claim and defence for the plaintiff for 2,750*l.* On the counterclaim for the defendant for 2,116*l.* 14*s.* On the plaintiff's counterclaim to the defendant's counterclaim for the plaintiff for 533*l.* Execution on the judgments to be limited to execution for the plaintiff for the balance in his favour, 1,664*l.* 6*s.* 9*d.* The costs of the plaintiff's claim to be to the plaintiff. The defendant to be entitled to the costs of the counterclaim, regards the issues on which either party failed, he was not to have those costs. Upon the application of Mr. Clavell Sal K.C. the learned Official Referee granted defendant a stay of execution upon terms, with a view to an appeal from his decision.

HIGH COURT OF JUSTICE, CHANCERY DIVISION. (Mr. Justice Eve). Ancient Lights Case:

Schworer v. Bethnal Green Borough Council.
The hearing of the case of Schworer v. Bethnal Green Borough Council, which was reported in our last issue, was continued on October 13.

For the defendants Mr. W. H. Eve, F.S.I., 10, Union-court, Broad-street, E.C., gave evidence and proved the sections which had prepared on their behalf. He had given the plaintiff's premises and considered the ground-floor room to be a well-lighted room. He could read small print easily at a distance of ten feet from the window. Referring to the sections he had prepared, Mr. Eve said that he had taken a line through the centre of the ground-floor windows and prolonged it at right angles to the defendants' premises, and it gave an angle of 20 deg. of obstruction light. Taking a line from the same place to the eaves of the Town Hall, the angle of obstruction was 45 deg. He did not think, however, that the sections were the true tests of the quantity of light taken away. There was a large volume of light over the yard of No. 20 coming to the windows of the basement and ground floors. The Town Hall caused an obstruction of light, if anything, and did not interfere with the direct light at all. The total amount of light coming to the windows of the plaintiff was horizontal angle was, before the Town Hall was put up, 140 deg. That was an exceptional for such a district. He had considered very carefully the amount of light taken away by the defendants' building, and was strongly of opinion that it was not so seriously interfered with, and that the ground-floor and basement rooms could still be enjoyed in a way that any reasonable person would expect in such a neighbourhood. He did not think any real injury had been done to either owner or tenant.

In answer to Mr. Jessel, K.C., Mr. Eve said that some reduction in light had been made in the value of the house, but he admitted that there was a diminution of light, but did not think the tenant would have to live up any earlier.

Mr. Jessel suggested that in making his plans witness had taken the heights from the general ground level, and had not allowed for the fact that there was a drop of nearly 2 ft. underneath the windows in question. Mr. Eve pointed out that from the way his plans were prepared the depth below the window did not affect the heights.

Mr. Percy Robinson, F.R.I.B.A., of 1, John-street, Adelphi, was also called. He and his partner, Mr. Jones, were the architects of the new Town Hall at Bethnal Green. The copings of the wall adjoining No. 20, Patriot-square, were on in December last. He first inspected plaintiff's premises in 1910. He agreed generally with the evidence given by Mr. Eve. He thought that when the curtains of the ground-floor windows were drawn aside there was ample light for all ordinary purposes.

There was very little diminution of light. An angle of 45 deg. from the window cut off very little sky area, the only obstruction being the chimney of the Town Hall. The witness, cross-examined by Mr. Jessel, said he had practised in London for the last three years. When he visited the plaintiff's premises with Mr. Eve they were able to write down the particulars of the measurements then taken without the slightest difficulty in any part of the room or the ground floor. He considered the amount of light taken away to be a negligible quantity. Mr. Ernest Edward Finch, A.M.Inst.C.E., from 1903 to 1910 Borough Engineer of Bethnal Green, and now Assistant Engineer to the Corporation of London, described the plaintiff's property as a very old dwelling-house, unsuited for business purposes. In December 1909, when he visited the premises, the eastern wall of the Town Hall was at its full height. He went into the ground-floor room. There was no sunshine, but he could see quite well

notes and read them, although they were written in pencil. The room, in his opinion, was very well lighted. He agreed with the evidence given by Mr. Eve and Mr. Jossell; if more gas was to be used, that, in your opinion, damage the premises from a selling or letting point of view, I do not think it would.

Counsel had addressed the Court, Justice Eve, in giving judgment, said the plaintiff alleged that the erection of the new Hall had interfered with the light to the basement and three floors of premises to an extent to cause a considerable inconvenience to the tenants and that they were carrying on their businesses, as usual, as before. When the case came on for the plaintiff abandoned any claim for damages in respect of the two upper and also intimated that the damage to the plaintiff might turn out not to be very great. The case developed it was seen that the plaintiff's claim was well founded, and the claim was only for damages for interference with light coming to the ground-floor. The evidence had been directed to the fact of that room antecedent to and subsequent to the erection of the Town Hall. The plaintiff had satisfied the Court that the erection of the Town Hall the light which came to the ground-floor room was exceptionally bright. The light for that room was at its very best when the plaintiff purchased the house. In the summer of 1908 the windows of the room which were not of any great extent, and which had existed on the land of 14 and 16, Patriot-square, had been moved, and the land was cleared and the erection of the Town Hall. On the 1st of January, 1909, the plaintiff's claim was caused by the Town Hall was not. It undoubtedly diminished the light to the plaintiff's premises to an appreciable extent on the south side.

Justice Eve applied what was laid down by the Court in the case of *Davey v. Leitch*, which is left to the Court to answer the ordinary requirements of the law for the ordinary purposes of the plaintiff. Counsel for the plaintiff said it was because, in fact, the work carried on in the ground-floor room with ordinary light was now being carried on for the same time of day by day. He did not think it had been established as a fact, although the evidence on behalf of the plaintiff had been given quite honestly. He wished to decide the case on that footing, and the question of light did not arise. The plaintiff's cause of action, the results of the evidence on behalf of the plaintiff, showed from that diminution did not give a cause of action. One was and to measure the immateriality of the evidence by the extent to which it involved the plaintiff in the expense of artificial light. On the other hand, he did not think there could be any doubt as to the present condition of the room in question. Not only from the evidence of the defendants' witnesses, but from the fair evidence given by Mr. Rix, the expert, the room was to be regarded as a very fairly well-lighted room. His Lordship thought it had been established that the room was in fact a well-lighted room. The results of the evidence of what the defendants had done, they had not been such as to bring the present condition of the room under and below that at which they ought to have been. Although he sympathised very much with the occupiers, he did not think any claim could be made out on which the plaintiff could succeed, and the action would, therefore, be dismissed with costs.

LONDON COUNCILS.

City.—Plans were submitted by the City Surveyor at the last meeting of the District Council for twenty-two cottages in Berkeley-lane, when it was decided that the Council should be asked to sanction the Board for the erection thereof. The Board was asked at the same time to dispense with the usual public inquiry, as the application made was only an extension of the Council's scheme, for which a loan had already been sanctioned and obtained. Sanction has been given by the Council. The Council has received from the Local Government the sum of £3,050, for repaving the street.

St. Pancras.—At the last meeting of the Urban Sanitary Authority, a resolution was passed that a town planning scheme should be passed, and a Town Planning Committee was appointed. It was further resolved to approach the Local Government

Board with a view to getting them to receive a deputation on the subject. The following plans have been passed:—Mr. G. Jaggar, five houses, King George's-avenue; Miss Lucy Kemp Welsh, additions to workmen's club, Rudolph-road.

Camberwell.—The Royal Institute of British Architects has sent the following circular letter to all the London Borough Councils with regard to street name-plates:—"The Council of the Royal Institute of British Architects wishes to call the attention of the Borough Councils of London to the importance, both in an aesthetic sense and as a matter of public convenience, of taking steps towards a complete revision of name-plates for the corners of London streets, with well designed lettering, preferably of a uniform style throughout London. As to the matter of public convenience, the Royal Institute wishes to point out that while in Paris every street corner bears the name of the street, in London there are hundreds of corners where no name at all is to be found; so that it is often difficult to discover the name of a street without walking some distance along it, the fixing of name-plates having never been carried out on any complete and comprehensive system. In regard to the aesthetic question, it is desirable that a good type of lettering should be adopted on two scales, the larger or smaller scale to be adopted according to the width and importance of the street and the architectural scale of the buildings flanking it. The Royal Institute is not advocating the employment of any name-tablet more costly than those now in use; a good type of lettering, once designed, costs no more to execute than an inferior one. It has long been the wish of the Council of the Royal Institute to see this matter of complete labelling of the London streets taken in hand and carried out in a systematic manner, so as to remove from our capital a reproach which it certainly lies under in this respect in comparison with Paris, and they hope that the Borough Councils would see their way to act together in securing this much-needed improvement. One of the faults in the present condition of things is that not only are name-tablets wanting in many situations where they ought to be found, but that those which exist are in so many different forms and patterns. It is suggested that if the Borough Councils were willing to consult together on the subject and to take up the matter conjointly, and agree upon a pattern of lettering, a uniform system for the whole of London could be secured, to the great advantage of the appearance of our streets, as well as to the general convenience of the public. We may add, the Royal Institute is always ready to place its services in public matters of this kind at the service of the Borough authorities."

Croydon.—The Rural District Council have accepted the tender of Mr. Isaac Wilson, Gorrington Park-avenue, Mitcham, at 35s. 6d., for making up Oakwood-avenue, Mitcham. **East Ham.**—Plans were submitted by the Engineer for a convenience and lock-up shop at the corner of Station-road and Romford-road, and application is to be made to the Local Government Board to borrow the necessary money. A plan has been received from Messrs. Mark Lill & Sons showing a suggested building line for the development of land at the south-east corner of Bendish-road and High-street North, and asking if the Council will allow them to project beyond the building line of Bendish-road, thus enabling them to build right up to the back of the footpath in Bendish-road for a distance of 101 ft. west of the High-street frontage. The Council are to allow them to do this provided they surrender the whole of the forecourt to the building line of the shops on the north and south sides in High-street North, and sufficient land for rounding off the corner of Bendish-road and High-street North. Plans submitted by the Engineer have been approved for the completion of the sewerage of Sussex-road at an estimated cost of £1,200. The Engineer has been instructed to submit plans and estimates for the erection of slipper and vapour baths in connexion with the new swimming baths. Plans have been passed for Mr. T. Watson for six houses in Lichfield-road. Plans have been lodged by Mr. G. Clark for ten houses in Wallend-road.

Greenwich.—Tenders are to be invited for forming and paving a part of Bramshot-avenue.

Hamstead.—A portion of the footway in Finchley-road is to be improved. In order to meet the requirements of the London County Council, extra works and variations are to be carried out at the new town hall buildings, at an estimated cost of £120. No objection is to be raised to the building of an institute on the south side of Penton-court for the Vicar of the Hamstead Parish Church. The architect is Mr. A. Keen, of Raymond-buildings, Gray's Inn, W.C.

Hemel Hempstead.—The Education Com-

mittee have accepted the tender of Messrs. J. & Son, Leicester, at 18s. 6d., for heating and lighting work at the new school at Tyto Waters.

Hendon.—At a recent meeting of the King Edward Memorial Cottage Hospital Committee at the Council Offices, Hendon, a modified scheme was adopted for the erection of a memorial cottage hospital at an estimated cost of £1,500. The address of the architect is care of Mr. W. J. King, "Lyndhurst," Rosecroft-avenue, Hampstead, N.W.

Islington.—A new 9-in. pipe sewer, surrounded with Portland cement concrete, is to be substituted for the old brick sewer in Thornhill-crescent, at an estimated cost of £180.

Lewisham.—Part of Woolstone-road is to be repaved with artificial stone at an estimated cost of £131. In connexion with the proposed London County Council tramway from Catford to Forest Hill, the Council have decided to pave the carriageways and margins of the roads through which the tramway will run with wood-blocks, at the following estimated costs:—Rushey Green to Brockley Rise, 5,770l.; Park-road to London-road, 1,720l. The County Council are to be requested to pave the whole of the tramway track under their control with the same material, with the exception of the portion on Catford Bridge, the whole of which is to be paved with granite setts. The following plans have been passed:—Mr. A. J. Roddis, six houses, Rushford-road; Messrs. Jarman & Co., additions to Obelisk House, High-street.

Surbiton.—At the last meeting of the District Council the following resolution by Mr. F. B. Ray was carried:—"That the Council instruct the Fire Brigade Committee to retain an architect for the purpose of preparing plans for the erection of a fire-station on Surbiton-hill, adjoining the Council offices."

West Ham.—Plans have been passed for Mr. W. Jacques for an addition at the Council school in Grange-road, Plaistow, and for alterations and additions to the Council school, Prince Regent's-lane, Custom House.

Westminster.—The City Council have decided to enter into an agreement with H. M. Office of Woods for the purchase of sufficient land to widen Argyl place, between Regent-street and Kingsly-street, to 60 ft. The necessary paving, etc., works, exclusive of alterations to mains, etc., is put at 539l. A portion of the area at No. 1, Fimlico-road is to be covered in, and the pavement set back about 5 ft., at a cost not exceeding 100l.

Willesden.—Plans submitted by the Engineer for the following have been approved:—Convenience at Church End, estimated cost, 399l.; underground convenience at Canterbury-road, South Kilburn, 1,621l.; construction of new road from Harlesden-road to High-road, Willesden, involving the widening of Pound-lane, 4,920l. The Engineer has been instructed to report as to the cost of erecting a public convenience at the apex of Kensal Rise plantation. Application is to be made to the Local Government Board for authority to prepare a town-planning scheme. The wood paving in Chamberlayne-road is to be extended along Kilburn-lane to Bannister-road, and from the motor omnibus terminus to the northern flank of Kensal Rise Wesleyan Church. The following plans have been passed:—Messrs. William Moss & Sons for the Dairy Supply Company, factory, Cumberland-avenue, Park Royal; Mr. W. S. Dakers for Messrs. Callow & Wright, four houses, Staverton-road, Brondesbury; Messrs. Nowell Parr & Kates for the Royal Brewery, additions and alterations to the Crown beer-house, High-road, Willesden Green; Mr. John Cash, alterations to the Willesden Radical Club.

Woolwich.—The Works Committee report having received seven tenders for the erection of the combined convenience and shelter at the Eltham tramway terminus. The prices of these tenders ranged from 250l. to 385l., and, after consideration, they decided not to accept any tender, but to carry out the work by direct labour at an approximate cost of 310l. The following plans have been passed:—Messrs. J. James & Co., per Mr. J. R. Viney, 89, Chancery-lane, W.C., additions to warehouse at slat factory, Wood-street; the Trustees, per Messrs. J. Garrett & Son, 83, Balham-hill, S.W., baptist chapel and vestries, corner of West Mount and Glenure roads, Eltham. The London County Council have written to the Borough Council enclosing a plan submitted by Mr. R. M. Allen, 83 and 85, Powis-street, for the erection of a cinematograph theatre in Beresford-square, and asking for the Council's observations thereon. The Committee found no objection thereto other than the fact that the new building would be within 20 ft. of the centre of Beresford-street, which was contrary to the provisions of sect. 13 of the 'London Building Act,' and they have decided to call the attention of the County Council thereto.

TRADE CATALOGUES.

We have received from Messrs. S. W. Francis & Co., of Gray's Inn-road, London, E.C., their latest catalogue of wood, iron, and steel revolving shutters, spring shop sun-blinds, and gun-metal. Among the firm's recently-executed work are shutters for the London County and Westminster Bank, Parr's Bank, the Hippodrome, Leicester-square, and the Law Courts.

We have received from Messrs. Arthur L. Gibson & Co., of Radnor Works, Strawberry Vale, Twickenham, a booklet dealing with Cabot's sheathing and deafening quilt. "Quilt" is an insulator, constructed to give the most perfect results in the non-conduction of both heat and sound, and may be used for external walls, ceilings, and partitions. It consists of a felt matting of eel-grass, held in place between two layers of tough manila paper by quilting. Eel-grass is indestructible by decay, and will not burn, so that "Quilt" is practically fireproof. A series of tests made for the sound-deadening of the dormitories of the New England Conservatory of Music, Boston, United States, proved that the insulating properties of "Quilt" were superior to the other methods of sound-proofing experimented on. Other uses to which the material has been put with admirable results are as a sheathing for framed houses, where it may be placed under the shingles or slates as a roof-lining and as an insulator for cold-storage boxes. We note that the living-bus and observatory built for Capt. Scott's present Antarctic Expedition by Messrs. Boulton & Paul, of Norwich, have been lined throughout with two layers of double-ply "Quilt."

FOREIGN AND COLONIAL.

Industrial Expansion of Canada.

An examination of the conditions underlying the industrial expansion in Canada and of the promise of the future has convinced Mr. J. Norton Griffiths, M.P. for Wednesday, that the moment has arrived for English manufacturers to take practical steps towards establishing independent branches of their works in Canada, or of associating themselves with local concerns. Mr. Griffiths suggests that they should follow the American practice of personally controlling and directing the same with their experience and their money, in order to share in the great prosperity that must inevitably take place from now onwards.

International Organisation and Equipment of Schools Exhibition, Russia.

Copies (in English) of the programme, rules, etc. of the International School Exhibition, St. Petersburg, have been received from Mr. C. H. Mackie, the British Acting Consul at St. Petersburg. The exhibition is to be opened on April 15, 1912, and is to remain open for three months. Foreign exhibits will be admitted into Russia free of duty, on condition of re-exportation within six months. Applications for space should be sent to the Executive Committee of the International Exhibition "Organisation and Equipment of Schools," Panteleimon'skaya No. 2, St. Petersburg, not later than November 1. Copies of the programme, rules, etc. (in English) of the exhibition may be obtained by British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Last Year's Lock-out in the German Building Trade.

Referring to this subject in his annual report, the British Consul at Frankfurt-on-Main recalls the fact, mentioned in his report for 1908, that the employers in the building trade had forced upon the employed throughout Germany scheduled wage agreements, the terms of which were not popular, but were accepted after a series of unsuccessful strikes. The employers provided that all these agreements should come to an end in April 1910, because in case of trouble, which was anticipated, a general cessation of the building work would infinitely strengthen the hands of the employers. As negotiations for a new national agreement, started already in the autumn of 1909, had failed, the workmen were given notice on April 1, 1910, for April 15, and on that day the great struggle began. The workmen's demands were chiefly for shorter hours, for a schedule of wages on a higher scale, and also for a more fairly constituted system of labour bureaux for the building trade, while the employers insisted upon one central bureau of control for the conclusion of labour agreements. Two circumstances were in favour of the workmen—the rise in the cost of living brought them the sympathy of the

public, and the fact that for the first time after a succession of years there had been a revival in the building trade induced some employers anxious to utilise a favourable opportunity, to waver. As a result, the numbers of workmen involved never reached the proportions at one time feared—400,000 in 25,000 concerns—and never exceeded 187,000, while the total number of men employed in the building trade probably exceeds 1,500,000. In some important centres (e.g., Berlin and Hamburg) employers and employed soon arranged terms. In Berlin, where about 35,000 men are engaged in the building trade, the men were granted an immediate rise of 3 pf. per hour, to be increased, as from October, 1911, by a further 2 pf. In other centres the struggle was vehemently carried on. The employers received financial aid from several great employers' organisations, e.g., the *Centralverband Deutscher Industrieller*, is said to have placed 5,000,000 marks at their disposal, and the Rhenish-Westphalian Coal Syndicate is believed to have contributed 500,000 marks. Government intervention proved futile. The lock-out lasted seven weeks in all, and ended on June 15 with a compromise. The employers granted shorter working hours, so that the working day in future will vary, according to locality, between 9½ and 10½ hours, with a further reduction as from 1912 to 10 hours; they also granted an immediate advance of 2 pf. to be increased later by a further advance of 4 pf. and 2 pf. respectively per hour. A certain discretion was left to local bodies for the settlement of further local differences.

PATENTS.

APPLICATIONS PUBLISHED.

18,114 of 1910.—Conrad Dressler: Ovens for use in the manufacture of tiles, pottery, and analogous ware.
22,099 of 1910.—Francis Gascoigne Tynde and Everard Richard Calthrop: Method of and means for the construction of concrete sea-walls, piers, pontoons, floating stages, foundations, and other structures.
22,218 of 1910.—Junzo Kajima: Telescopic masts, lifting appliances, or the like.
27,526 of 1910.—Abraham Henry Wormald: Safety window-guard and fire-escape.
30,191 of 1910.—James Compton Merryweather: Apparatus for emptying cesspools, gullies, holes, and the like.
30,211 of 1910.—Richard Roue, jun.: Boilers for heating water and generating steam.
4,932 of 1911.—William John Lindemeyer: Ventilators.
5,085 of 1911.—Herbert Sumner Owen: Manufacture of products of concrete, cement, and the like.
9,103 of 1911.—William Fry Scott: Reinforcement of concrete beams.
11,102 of 1911.—Herman Koppinger: Manufacture of iron window bars.
11,444 of 1911.—William John Swain: Construction of reinforced floors and beams of concrete or any other fireproof or fire-resisting material.
14,063 of 1911.—Albert Mitani: Metal bars for use in ferro-concrete construction.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by Friday Morning's Post in London and the suburbs.
To Canada, post-free, 21s. 6s. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 25s. per annum.
Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

SOME RECENT SALES OF PROPERTY: ESTATE EXCHANGE REPORT.

October 2.—By FRANK LLOYD & SONS.
Highton, Flint.—Farm Estate, 283 acres, £5,875.
October 5.—By LEBNARD & LEBNARD.
Newborough, Staffs.—Part of Holly Bush Estate, 1,013 acres, £32,925.
October 7.—By FRANK LLOYD & SONS.
Marlton-cum-Lodge, Cheshire.—Estate, 349 acres, £16,890.
Saltney, Flint.—Mainwaring Farm, etc., 189 acres, £11,075.
October 9.—By WHITE & SONS.
Walsall Wood, Staffs.—Nineteen cottages and 10 acres, £2,960.
Hornchurch, Staffs.—Fourteen cottages, etc., 61 yrs., gr. 25, u.t. 119, 12s., 3s. 4.
By FRANK PARSONS & CO.
Fuxford, Worcs.—Manor Farm, 282 a. Or. 3 p., £10,000.
October 11.—By DUNN, SONIA, & COVINGTON.
Bradwell, Derby.—Hassop Estate, 546 acres, £22,610.
October 12.—By HENRY H. COLLIER & MADGE.
Acton—33, Mansell-rd., l.t. 291, u.t. 291, 19 and 21, Mansell-rd., u.t. 68 yrs., u.t. 12½, u.t. 56½, 12s., £435.
* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

October 13.—By WM. DEW & SONS.
Llanfangel-y-Pennant, Carmarvon.—Farm and copper mine, 85 a. 2 r. 10 p., £1.
By MASEBET & EDEY.
Tudhurst St. Mary, Devon.—Five farms, etc., 961 acres, £1.
October 16.—By FLETCHER & CO.
Southgate.—The Green, Bay Tree Cottage and Lawn Side, l.t. 120, £1.
By EDWARD WOOD.
Thornton Heath.—37, Mapletrove-rd., l.t. 21, u.t. 21, £1.
Hamstead.—82, Lovelidge-rd., u.t. 85 yrs., g.t. 91, 9s., u.t. 72½, £1.
Enfield.—1 to 8, Green st., u.t. 87 yrs., u.t. 21½, u.t. 107½, 12s.
Canning Town.—81, Stephenson-st., l.t. p., £1.
Hford.—5, Khartoum-rd., u.t. 89 yrs., g.t. 41, 10s., p., £1.
Seven Kings.—37, Ladysmith-av., u.t. 94 yrs., u.t. 31, p., £1.
By WHITE & SONS.
South Nutford, Surrey.—Part of the King's Mill Estate, 552 a. 3 r. 10 p., £1.
October 17.—By ORRILL, MARES, & BARLEY.
Lewisham.—Station-rd., Mid-Kent Tavern, lease for 35 yrs. at 1251, with possession.
By STANLEY PARKES & BROWN.
Tottenham.—42 to 48 (even), St. Paul's rd., l.t. u.t. 102, 10s., £1.
By SIBBARD & TITCHELL.
Highgate.—Great North-rd., Laurel Bank, u.t. 86 yrs., g.t. 91, u.t. 801.
By THURGOOD & MARTIN.
Bloomfield.—1, Gordon pl., u.t. 12 yrs., u.t. 30½, p., £1.
October 17.—By WHEELER & WHEELER.
Muswell Hill.—Sunnyside, l.g. rents 851, reversion in 94 yrs.
Holloway.—18 and 21, Creswell-rd., u.t. 75 yrs., g.t. 12½, u.t. 73½, £1.
33, Russell-rd., u.t. 81, g.t. 61, u.t. 181, 23 and 25, Farnborough-rd., u.t. 75 yrs., g.t. 11½, u.t. 76½, £1.
By HANFORD & SONS.
Bedhampton, Hants.—Belmont and Hook Farms, 121 acres, £1.
Five cottages and pasture, 21 acres, £1.
October 18.—By FOSTER & CLARKE.
Southend-on-Sea, Essex.—50, 52, and 52A, High-st., and 4, York-rd., l.g. rents 1801, reversion in 80 yrs., £1.
6, 8, and 10, York-rd., l.g. 47½ lbs., reversion in 80 yrs., £1.
October 19.—By FIELD & SONS.
Tottenham.—14 to 24 (even), Durban-rd., u.t. 83 yrs., g.t. 121, u.t. 134, 16s., £1.
Dulwich.—40, 41, and 46, Heber-rd., u.t. 66 yrs., g.t. 151, 15s., u.t. 120, 15s., £1.
By FRY & SONS.
Lewisham.—80, 82, and 84, Loampit Vale, l.t. 366.
Tottenham.—Lower Park-rd., l.g. 71, 7s., reversion in 45 yrs., £1.
New Cross.—41 and 43, Nynched-st., u.t. 84 yrs., g.t. 111, u.t. 83, 15s., £1.
Old Kent-rd., Nos 618 and 619, l.t. 7 and u.t. 92½, £1.
By FAREBROTHER, ELLIS, & CO.
Bookham, Surrey.—Church st., Five Lodge and 1 a. Or. 32 p., £1.
High-st., ironmonger's shop, l.t. 91, £1.
Office and club premises, l.t. 91, £1.
Victoria Temperance Hotel, l.t. p., £1.
Merrylands Farm, l.t. 31 p., l.t. p., £1.
Merryvort Cottages, l.t. u.t. 27, 6s., £1.
Merrylands Farm, eleven cottages, and plot, l.t. u.t. 143, £1.
Halfway houses and plot of land, l.t. u.t. 111, £1.
Pleasant row and Brook Cottages, l.t. and u.t. u.t. 64, 7s., £1.
October 20.—By COOKS & BURELL.
Ealing.—The Lodge, stabling, and 1 a. l.t. 30 p., £1.
By PROTHORP & MORRIS.
South Lambeth.—1, 3, and 5, Miles st., l.t. u.t. 184, 12s., £1.
Leytonstone.—Pretoria rd., ten plots, l.t. p., £1.
By RETFOLDS & EASON.
Paldington.—14, Westbourne-st., u.t. 38 yrs., g.t. 121, u.t. 118½, £1.
King's Cross.—Battle Bridge Wharf, u.t. 23 yrs., g.t. 250½, u.t. 420½, £1.
Walworth.—76, Walworth-rd., l.t. u.t. 58 yrs., g.t. 201, u.t. 100, £1.
Victoria Park.—Chesham-rd., l.t. p., £1.
101, Or. 3d., reversion in 59 yrs., £1.
By WILTSHIRE & CO.
Hornsea, Mayfield-rd., l.t. rents 161, reversion in 85 yrs., £1.
Bowes Park.—Manor rd., l.g. rents 131, 10s., reversion in 88 yrs., £1.
Hamstead.—Ingham-rd., l.g. 71, reversion in 88 yrs., £1.
Fortune Green-rd., l.g. 111, reversion in 79 yrs., £1.
Harringay.—Harringay rd., l.g. rents 111, 16s., reversion in 68 yrs., £1.
Duckett-rd., l.g. rents 331, 10s., reversion in 84 yrs., £1.
Pinner.—Wellington-rd., l.g. rents 231, reversion in 89 yrs., £1.
Wentley.—London-rd., l.g. rents 311, 10s., reversion in 87 yrs., £1.
Hanwell.—Greenford-av., l.g. rents 121, 12s., reversion in 87 yrs., £1.
Contractions used in these lists.—F.g. for free ground-rent; l.g. for leasehold ground-rent; l.t. for improved ground-rent; g.t. for ground-rent; r. for freehold; o. for copyhold; l. for leasehold; p. for possession; e.t. for estimated rental; u.t. for u.t. rental; q.t. for quarterly rental; y.t. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; l.t. for land; st. for street; rd. for road; sq. for square; p. for place; f. for farm; g. for garden; av. for avenue; g.d. for garden; p.h. for public-house; o. for office; s. for shops; et. for court.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments—; Auction Sales, xiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

TOBER 28. — Salford.—Extension of office accommodation on workhouse site at Eccles New-
Premiums 200, and 100. Particulars from Board of Guardians, Salford, Limited to
tects practising in Salford and district only.
TOBER 30. — Holland.—Stained Glass Win-
—Designs are invited for a stained glass
to be erected in the University at
linden. See advertisement in issue of June 9
for particulars.

TOBER 31. — Bristol.—ALTERATIONS IN THE
VD HOTEL. — Particulars from Mr. F. A.
for particulars.

TOBER 31. — Marylebone.—NEW MUNICIPAL
—Premiums of 1000, 750, and 500. The
is Mr. Henry T. Hare, F.R.I.B.A. See
placement in issue of July 14 for further
iculars.

TOBER 31. — City of St. Petersburg.—
MENT TO ALEXANDER II. — Competitions in ur-
of August 13, 1910.

TOBER 6. — Stockport.—NEW MENTAL
—The Stockport Guardians invite compe-
titions for new buildings for mental
in the Infirmary, Stepping-hill, near Stock-
Three premiums are offered. See adver-
tisement in this issue for further particulars.

TOBER 17. — Nottingham.—BAPTIST CHURCH
PREMIER. — Limited to Nottingham archi-
tects. Mr. H. W. Willis, A.R.I.B.A. See
iculars from Messrs. Rortke & Jackson,
itors, King-street, Nottingham.

TOBER 30. — Cardiff.—TECHNICAL INSTITUTE.
—The Cardiff Education Committee invite
titions and estimates for a technical institute.
advertisement in issue of August 18 for
for particulars. Successful architect to carry
work. Premiums of 1250, 750, and 500, to
competitors. Mr. J. S. Gibson, assessor.

TOBER 30. — Hastings.—EAST SUSSEX
HOSPITAL. — The Joint Committee of the East
Hospital and King Edward VII.
ioral Funds invite designs for new hospital.
advertisement in issue of August 25 for
for particulars. Premiums of 1250, 750,
500. Mr. E. T. Hall, assessor.

TOBER 30. — Glasgow.—DESIGN FOR A
—Designs are invited (Alexander Thom-
Travelling Studentship) for a bridge. Pre-
miums of 600, and 200, are offered. See adver-
tisement in issue of December 24 for further
particulars.

TOBER 30. — Welsh Eisteddfod, 1912.—
—For Workmen's Dwellings. Prize, 500.
iculars from Welsh Housing Association, 8,
ple-chambers, E.C.

TOBER 1, 1912. — Rochdale Infirmary.—Ex-
tensions. — Rortke & Jackson, architects.
ssor, Mr. Alex. Graham, F.R.I.B.A.

TOBER 29, 1912. — Montevideo.—Government
—Premiums, 3,250, and 8500, for town im-
ement scheme (premiums, 1,600, 840, and
0). Conditions may be seen at the Town In-
of 73, Basinghall-street, E.C.

TOBER 31, 1912. — Australia.—DESIGNS FOR
AL CAPITAL CITY. — The Government of the
omwealth of Australia invite competitive
titions for the laying out of this Federal capital
See advertisement in issue of September 1
for further particulars.

TOBER 1, 1912. — Dusseldorf.—A plan for the
reconstruction of the City of Dusseldorf. Pre-
miums of 1000, to 3750. Conditions on application to
Chief Burgomaster, Dusseldorf.

TOBER 1, 1912. — Adelaide.—Public hall and
to, to cost 2,500. Premiums of 150 and 100.
iculars from the Town Clerk, Adelaide.

TOBER 1, 1912. — Bolton.—Miners' Federation Hall
—Designs invited to architects within twenty-
miles of Bolton. Premiums, 500, and 250.
ssor, Mr. Jonathan Simpson, F.R.I.B.A.
old-street, Bolton.

specification by Mr. Geo. T. Moore, A.R.C.S.I.,
M.Inst.C.E.I., civil engineer and architect, 1 and
2, Foster-place, Dublin. Quantities by Mr.
James Mackey, quantity surveyor, 58, Dame-
street, Dublin. Deposit of 10. 1s.

OCTOBER 28. — Brecknock.—Erection
of a new residence in Hawarden-avenue,
South-road. Plans, specifications, etc., seen at
Ye Planry, 23, Queen-street. Mr. Albert
Gottlieb, Architect, 10, Morecambe-street, More-
cambe, Lancs.

OCTOBER 28. — Torrington.—Office.—Erection
of an office for the superintendent of police at
the police station. Plans and specifications by
the County Architect, Mr. E. H. Harbottle,
Queen-street, Exeter.

OCTOBER 30. — Coventry.—HOUSES.—Erection
of three blocks of houses, four to each block, at
Alderman's Green, near Coventry, for the
Coventry Perseverance Co-operative Society, Ltd.
Plans and specifications from Mr. Walter H.
Hartrell, architect, 23, Hertford-street, Coventry.

OCTOBER 30. — Crumlin.—SCHOOLS.—Erection of
new National schools. Plans and specification
with Mr. George O'Connor, C.E., F.R.I.A.I.,
architect, 42s, Great Brunswick-street, Dublin.
Quantities from Mr. James Mackey, surveyor,
58, Dame-street, Dublin. Deposit of 10. 1s.

OCTOBER 30. — Farnworth.—DWELLINGS.—Erection
of four artisans' dwellings, Avenues Estate.
Messrs J. H. Hall & Son, architects and sur-
veyors, Exchange, Huddersfield.

OCTOBER 30. — Lydiard Millicent.—DISINFECTOR
HOUSE.—Erection of a disinfectant house and
disinfectant apparatus at the Isolation Hospital.
Specifications, plans, and particulars from
the architect, Mr. E. J. Bewick, M.S.A., 10,
Victoria-road, Swindon.

OCTOBER 30. — Morley.—ALTERATIONS, etc.
Alterations and additions to market buildings.
Plans and specification seen, and quantities from
Mr. T. A. Buttery, Lic.R.I.B.A., architect,
Queen-street, Morley.

OCTOBER 30. — Stalybridge.—WAREHOUSE.—
Erection of a new warehouse in Harport-street
and Chapel-street. Plans and quantities from
Mr. Edward Clatrick, architect, 3, Portland-
place, Stalybridge.

OCTOBER 31. — Aspataria.—HOUSE.—Erection of
a dwelling-house in Station-road. Plans and
specifications with Mr. J. Wilson, jun., 4,
Brough-street, Aspataria.

OCTOBER 31. — Dublin.—FACTORY.—Erection of a
cycle factory at Phoenix-street. Drawings and
specification with Mr. J. Cullen, M.R.I.A.I.,
architect, 25, Suffolk-street, Dublin. Quantities
by Messrs D. W. Morris & Co., surveyors, 68,
Harcourt-street, Dublin.

OCTOBER 31. — Wokingham.—HOUSES.—Erection
of cottage houses. Quantities and forms of
tender from the Clerk to the Guardians, Mr.
J. P. Sargent, Statue Road, Wokingham.
Deposit of 10. 1s.

NOVEMBER 1. — Houghall.—FOUNDATIONS, ETC.—
Construction of brick and concrete foundations
for a new ward block and mortuary, etc., and
alterations to the existing hospital building at
Houghall Hospital. Plans and specifications
with Mr. G. Gregson, Surveyor, 38, Sadler-
street, Durham.

NOVEMBER 1. — Mitcham.—ALTERATIONS.—Alter-
ations, additions, etc., to the male and female
epileptic day-rooms at Workhouse, Western-
road, Mitcham. Surrey. Architect, Mr. A.
Saxon Snell, F.R.I.B.A., of 22, Southampton-
place, Chancery Lane, W.C. Deposit of 50.

NOVEMBER 1. — Welwyn.—COTTAGE.—For erect-
ing and completely finishing cottage at the
waterworks, Playford, Welwyn. Plans and con-
ditions seen, and quantities from Mr. Henry F.
Mence, 11, St. Peter's-street, St. Albans.
Deposit of 10. 1s.

NOVEMBER 2. — Borth.—HOUSE.—Erection of a
house. Plan and specification from Mr. G. T.
Bassett, A.R.I.B.A., architect and surveyor, 17,
Terrace-road, Aberystwyth.

NOVEMBER 2. — Dpton.—HOUSE, ETC.—Erection
of presbytery and caretaker's house at Bradley
Lodge. Drawings and specifications seen, and
forms of tender from Mr. G. T. Bassett,
Lic.R.I.B.A., architect, 23, Durham-road, Black-
hill.

NOVEMBER 2. — Nottingham.—ALTERATIONS.—
For structural alterations to stores in Wood-
borough-road. Particulars at the Gas Engineer's
Office, George-street, Nottingham. Deposit of
10. 1s.

NOVEMBER 3. — Farnworth.—COTTAGES.—Erection
of a block of four model cottages on the Avenues
Estate. Plans seen, and quantities from Messrs.
Junn & Kaye, architects and surveyors, Hud-
dersfield.

NOVEMBER 3. — Hirst.—PREMISES.—Erection of
new business premises. Plans and specification
with Mr. Osborne Blythe, Lic.R.I.B.A., archi-
tect, Ashington, Northumberland.

NOVEMBER 3. — Little Walsingham.—SCHOOL.

Erection of new school. Names to the archi-
tect, Mr. H. J. Green, Castle Meadow, Norwich,
and Paradise-chambers, King's Lynn. Quan-
tities on deposit of 10. 1s.

NOVEMBER 3. — Rochester.—POST-OFFICE.—
Erection of Rochester new post-office. Drawings,
specification, and conditions with the Postmaster,
Rochester. Quantities and forms of tender, on
deposit of 10. 1s., from the Secretary, H.M.
Office of Works, etc., Storey's-gate, London,
S.W.

NOVEMBER 4. — Ord.—REPAIRS.—For repairs at
East Ord Council School. Specifications seen at
the school. Head Teacher, Ord School, Berwick.

NOVEMBER 4. — Porthcawl.—HOUSES.—Erection
of two houses in Suffolk-place. Plans and
specifications with Mr. D. Griffiths, M.S.A.,
architect, Dock-street-chambers, Porthcawl.

NOVEMBER 6. — Clydach.—CLASSROOMS, ETC.—
Erection of a new transept, with classrooms, and
other work at the parish church, Clydach Vale.
Plans and specification seen, and quantities from
Mr. J. W. Rodger, architect, 14, High-street,
Cardiff.

*** NOVEMBER 7. — Chiswick.**—THE
Chiswick U.D.C. invite tenders for boys' school.
Streand-on-the-Green, Chiswick. See advertise-
ment in this issue for further particulars.

NOVEMBER 7. — Newton Abbot.—ADDITIONS.—
Additions to the nurses' home and laundry at
the Workhouse. Plans and specifications with
Mr. Samuel Sagar, architect, Union-street,
Newton Abbot.

NOVEMBER 8. — Hemsworth.—NEW WING.—
Erection of an additional wing to the Infirmary
at the Workhouse, near Wakefield. Names to
the architect, Mr. T. H. Richardson, Hemsworth
Road, Wakefield.

*** NOVEMBER 8. — London.**—ALTERATIONS.—
The St. George-in-the-East Guardians invite
tenders for alterations, entailing some building
work, in the heating apparatus at casual wards,
Bermondsey-street, E. See advertisement in this
issue for further particulars.

*** NOVEMBER 10. — Bournemouth.**—SCHOOLS.—
The Bournemouth Education Committee invite
tenders for elementary schools, Cranleigh-road,
Stourhead. See advertisement in this issue for
further particulars.

NOVEMBER 10. — Latchford.—SCHOOL.—Erection
of a new boys' department of the Bolton Council
School. Plans by Messrs Wright & Hamlyn.
Quantities from Mr. J. Moore Murray, M.S.A.,
Secretary and Director, Education Office, Sankey-
street, Warrington. Deposit of 10. 1s.

*** NOVEMBER 10. — Stanwell.**—ISOLATION HOS-
PITAL.—The Staines Joint Hospital Committee
invite tenders for Isolation Hospital for In-
fectious Diseases at Stanwell, Middlesex.
Advertisement in this issue for
further particulars.

NOVEMBER 11. — Newbridge.—IMPROVEMENTS.—
For proposed improvements to playground and
sanitation at the Council schools. Plan and
specification with Mr. S. Hill, Architect to the
Committee, Green-lane, Redruth.

*** NOVEMBER 11. — Norbury.**—SCHOOL.—The
Croydon Education Committee invite tenders
for erection of a new school at Norbury. See
advertisement in this issue for further
particulars.

NOVEMBER 13. — Maesteg.—SCHOOL.—Erection
of the proposed new Dertlwyn School. Plans and
specification seen, and quantities at the Maesteg
Police-station; and from Mr. T. Manel
Franklin, Clerk of the C.C., Glamorgan C.C.
Offices, Westgate-street, Cardiff.

*** NOVEMBER 14. — Haverfordwest.**—POST
OFFICE EXTENSION.—The Commissioners of H.M.
Works and Public Buildings invite tenders for
extension of post office. See advertisement in
this issue for further particulars.

*** NOVEMBER 14. — Shipton Bellinger.**—SCHOOL.—
etc. The Southampton C.C. invite tenders for
new Council school and teacher's house. See
advertisement in this issue for further
particulars.

*** NOVEMBER 14. — Walthamstow.**—SCHOOL.—
The Walthamstow Education Committee invite
tenders for alterations to the Pretoria-avenue
Girls' School. See advertisement in this issue
for further particulars.

NOVEMBER 15. — Pembroke.—SEA WALL.—Erec-
tion of a sea wall at Cwmryglws, Dinas
Plan and specification with Mr. W. R. Davies,
Road Surveyor, Cambria-terrace, Newport, Pem-
broke.

NOVEMBER 16. — Folkestone.—SCHOOL.—Erec-
tion of the new Harvey Grammar School for Boys
in Cheriton-road. Plans and specification, by
Mr. Edwin Finn, of 19, Watling-street, Canter-
bury, and conditions of contract at the office of
the quantity surveyor, Mr. H. J. Moody, 5,
Cheriton-place, Folkestone. Quantities on
deposit of 10. 1s.

NOVEMBER 17. — Prestwich.—INFIRMARY.—Erec-
tion of a new infirmary for female patients at
the Asylum. Drawings, specification, and con-
ditions of contract seen, and quantities, by Mr.

Contracts.

BUILDING.

The date given at the commencement of each
paragraph is the latest date when the tender, or
names of those willing to submit tenders,
may be sent in.

TOBER 28. — Beltsurbet.—NEW PREMISES.—
Erection and completion of drapery establish-
ment. Plans and specification from Mr. J.
C.B., architect, Broomfield House,
Glasgow.

TOBER 28. — Branton.—HOUSES.—Erection of
houses at East-hill, Branton. Plans and
specification from Messrs. Fielding & Fernhough,
Gold-street, Bolton.

TOBER 28. — Killarney.—REBUILDING.—For re-
building the International Hotel. Plans and

Mardon & Mills ...	£1,338 0	W. J. Snuggs,	
Martin Wells &		Frederick-street,	
Co., Ltd.	1,275 0	Aldershot* ...	£1,124 0
Crosby & Co.	1,230 0	H. N. Adams ...	1,081 15

GAERWEN.—For additions and alterations to the Council school. Mr. J. Owen, County Architect, Menai Bridge.
Evans & Pritchard, £1,104 | I. Evans, Menai
R. & T. Williams 995 | Bridge* £820
[Architect's estimate, £226.]

HENGOED. For the erection of a dwelling house at James's terrace, for Mr. David Williams, Brynhyfryd, Hengoed. Messrs. Seaborne & Cayley, architects, Hengoed.—
T. Jones £300 0 | E. James £26 15
R. Forsyth 298 10 | J. Gittins & Sons, 240 0
D. Jones 290 0 | Hengoed* 240 0
[Architect's estimate, £235.]

HINCKLEY.—For laundry machinery at new laundry at workhouse, for the Board of Guardians.—
Hill & Herbert, Ltd., Leicester* £345

LLANFAIRCAERMINON (near Welshpool).—For the erection of a new village hall and institute. Messrs. Dickens-Lewis & Haynes, architects, Shrewsbury.—
T. Face £4,195 0 0 | W. Bowdler & Co. £4,000 0 0
H. Price 4,195 0 0 | Co. 3,989 0 0
Jones & Evans 4,193 0 0 | Treasure & Son, Ltd. 3,971 10 0
J. Hughes 4,193 0 0 | G.H. Bickerton 3,464 15 0
W. H. Thomas & Sons 4,025 4 1 | Pontesbury* 3,464 15 0

LONDON.—For erection of ninety-eight cottages on the Tower-gardens section of the White Hart-lane estate, Tottenham, for the London County Council.—
P. F. Whybourn, £23,469 | A. Monk £18,636
A. Roberts & Co., Ltd. 18,190 | Rowley Bros. 18,197
C. Wall, Ltd. 19,721 | Nicholls & Son, 17,780
W. Lawrence & Son, 19,033 | Finchley* 17,780
[The Architect's estimate, comparable with the tenders, is £19,000.]

LONDON.—For heating and electric lighting work at the Great College street School, St. Pancras, for the London County Council.—

Heating Work.
Boulton & Paul, Ltd. £1,385 0 0
J. Grundy, Ltd. 1,607 0 0
Tilley Bros. 897 10 0
Cannon & Hafford 850 0 0
J. Yettou & Co., Ltd. 844 0 0
Brightside Foundry and Engineer-
ing Co., Ltd. 835 0 0
T. S. Knight & Sons 832 0 0
J. & F. May 830 0 0
G. & E. Bradley 805 0 0
W. O. Cannon & Sons, Ltd. 800 0 0
Palovlar & Sons, 90 and 91, Queen-
street* 737 0 0

[The Architect's estimate, comparable with the tenders, is £850.]

Electric Lighting.
Fleet Electrical Co. £756 17 0
E. Lawrence & Sons, Ltd. 825 0 0
Waring & Withers 496 13 9
Williams & Bach 184 0 0
Tredgar & Co. 465 0 0
Johnson & Phillips 455 0 0
T. H. Smerdon 412 0 0
G. Weston & Sons, Ltd. 395 0 0
Saville & Walton, 5, Bream's-buil-
dings, Chancery-lane* 340 0 0
[The Chief Engineer's estimate, comparable with the tenders, is £420.]

LONDON.—For enlargement of the York-road School, Islington, for the London County Council.—
E. J. Staines & Co., Ltd. £1,421 12 1
Marchant, Hirst, & Co. 1,386 0 0
G. S. S. Williams & Son 1,366 0 0
J. Willmott & Sons 1,342 0 0
G. Neal 1,251 0 0
Stevens & Sons 1,234 19 0
E. Lawrence & Sons, Ltd. 1,237 0 0
Lenn, Thornton, & Co. 1,229 2 2
C. P. Roberts & Co. 1,225 0 0
McLaughlin & Harvey, Ltd. 11, Brecknock-road* 1,185 13 6
[The Architect's estimate, comparable with the tenders, is £1,176.]

LONDON.—For various alterations at the George Green's School, Poplar, for the London County Council.—
E. A. Lowe & Co. £273 | H. Newell £755
J. Stewart 894 | E. Lawrence & Sons, 745
J. Grover & Sons 825 | Ltd. 745
E. A. Roome & Co. 790 | Vigor & Co., King-
street, Poplar* 689

LONDON.—For various alterations to the Whitefriar fire station, for the London County Council.—
W. Gladstone & Co. £2,137 | W. Deane £1,640
H. L. Holloway 1,812 | Kewbridge & Shaw, 1,798
W. Johnson & Co., Ltd. 1,773 | Dale's Inn House, 1,555
J. & C. Gwyer, Ltd. 1,773 | 263, Strand, W.C.* 1,555
The Architect's estimate, comparable with the tenders, is £1,700.]

LONDON. For Baptist schools, York-road, Battersea. Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, W.C.—
W. Hammond, Yelverton Works, 72, York-road, Battersea, S.W.* £3,958 5
[Fourteen tenders were received.]

LONDON.—For finishing the portion of Norman-avenue, adjoining the White Hart-lane estate, Tottenham, for the London County Council.—
E. J. Knifton £221 4 6 | W. Griffiths & E. T. Bloomfield 163 15 4 | Co., Ltd., Bish-
F. J. Coxhead 149 0 0 | opsgate, E.C.* £147 2 7

LONDON.—For erection of a professor's house and gate lodge, and alterations to the college, for the Trustees of MacCrea Music College, London-
derry. Messrs. Robinson & Davidson, architects, Londonderry.—
J. A. Fulton £4,621 10 | Ballantine, Ltd. £4,103 10
M. Sweeney 4,467 0 | R. Colthoun, Lon-
H. Lavery & Sons, Ltd. 4,393 0 | donderry* 3,960 0

MILFORD. For repairing the Rathmullen Water-works. Mr. J. S. Barnhill, engineer, Foyle street, Londonderry.—
W. D. Prescott £480 | A. Jones £565
W. Cooke £460 | P. McDavid £298
J. Doherty 349 | J. Johnston, Letter-
keny* 227

PRESTATYN.—For the erection of a manse. Messrs. Dickens-Lewis & Haynes, architects, Shrewsbury.—
W. D. Prescott £480 | A. Jones £565
T. Jones, Prestatyn* 573

ST. HELENS.—For extension of the Thatto Heath Council school, for St. Helens Corporation. Messrs. Biran & Fletcher, architects, St. Helens. Quantities by Mr. Reg. Wainwright, George-street, St. Helens.
C. J. Middlehurst, Middlehurst-
avenue, St. Helens* £4,948 8 6

SHEFFORD (Beds).—For erecting a house, for Mr. H. Inskip. Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, London, W.C.—
C. Wright, Langford, Biggleswade, Beds* £684 11 10

WOODHOUSE (Leicestershire).—For laundry in-
stallation at Convalescent Home.—
Hill & Herbert, Ltd., Leicester* £194 2

J. J. ETRIDGE, Jr.
SLATE MERCHANTS. LTD.,

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2683 Wall, or write

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

Ham Hill Stone.
Douling Stone.
Portland Stone.

The Ham Hill and Douling Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and G. Task & Son,
The Douling Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic L. Asphalte Company (Mr. H. Glenn), Office, 4, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and mil-
rooms, granaries, fun-rooms, and terrace
Asphalte Contractors to the Forth Bridge Co.

WHAT!

USE WHITE

LIME-SAND BRICKS

(Of the Finest Quality)

FOR CONTRACT WORK?

WHY?

E The Bricks are uniform.
A Less mortar is required.
C Closer joints can be made.
A 15 per cent. more bricks can be laid per day.
U Where light is required they need no whitening.
S Saving of material and labour.
E USED BY THE MILLION IN GERMANY, AMERICA,
AND IN THIS COUNTRY.

These Bricks are made by the

GODSTONE BRICK & TILE CO., LTD.

Oxford Road, Godstone, Surrey.

and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 36/- per 1,000, net.

Send for Free Samples.

SPRAGUE & CO., Ltd.,

LITHOGRAPHERS AND PRINTERS.

Estate Plans and Particulars of Sale promptly
executed.

4 & 5, East Harding-st., Fetter-lane, E.C.

OGILVIE & CO.,

Telephone: DALSTON 11
Many years connected with
the late firm of W.
LAWSON & CO., Ltd.
of Bunhill Row.

Amhurst Works, DALSTON LANE, N.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS.

ASPHALTE

For Horizontal & Vertical Damp Courses

For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied

THE

French Asphalte Co.

Whose name and address should be inserted in
specifications.

For estimates, quotations, and all information
apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL.

CANNON STREET, E.C.

EWART'S

Cures in 19 cases out of 20.

"EMPEROR"

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

Established 1834.

Telephone:
2570 North.

SMOKE-CURE

THE BUILDER

VOL. CL.—No. 3557.

NOVEMBER 3, 1911.

CONTENTS.

	PAGE		PAGE
ATION AND EXAMINATION	497	MONTHLY REVIEW OF CONSTRUCTION:—	
L.C.C. TRAMWAYS AND ST. PAUL'S	498	DETERMINING STRESSES IN COLLAR-BEAM ROOF	
R.I.B.A. SYLLABUS OF EXAMINATIONS	499	TRUSS (WITH DIAGRAMS)	511
ARCHITECTURAL ASSOCIATION (WITH ILLUSTRATIONS)	500	THE AMERICAN SOCIETY FOR TESTING MATERIALS	512
STRUCTURAL SOCIETIES	504	THE KERDON SYSTEM OF REINFORCED CONCRETE	
TECHNICAL SOCIETIES	504	(WITH ILLUSTRATIONS)	513
LOCAL NEWS	505	NOTES (WITH ILLUSTRATIONS)	514
SH HOSPITAL, MONTEVIDEO (WITH ILLUSTRATIONS)	506	THE BUILDING TRADE:—	
LONDON COUNTY COUNCIL	507	WORKMEN'S COMPENSATION	515
NOTION NEWS	508	BUILDING PLANS AND BUILDING PROSPECTS	515
CONTEST FOR THE AUSTRALIAN FEDERAL		CEMENT	515
TRIAL	508	GENERAL BUILDING NEWS	515
RESPONSE	509	APPLICATIONS UNDER LONDON BUILDING ACTS,	
COMMUNICATION COLUMN	509	1894 TO 1909	516
TRIAL SUMMARY	510	PROJECTED NEW BUILDINGS IN THE PROVINCES	517
INGS	510	HEATING AND VENTILATION	518
TO ILLUSTRATIONS	510	THE TRIBUNAL OF APPEAL UNDER THE LONDON	
YEARS AGO	510	BUILDING ACT	520
		WESTMINSTER CITY COUNCIL	521
		LAW REPORT	521
		LONDON COUNCILS	521
		OBITUARY	522
		TRADE CATALOGUE	522
		PATENTS	522
		SOME RECENT SALES	522
		LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	523
		PRICES CURRENT	524
		TENDERS	525

Illustrations.

LEEKSTON SECONDARY SCHOOL. MR. G. H. WIDDOWS, A.R.I.B.A., ARCHITECT.

ISOLATION HOSPITAL AT ABERDARE, GLAMORGAN. MR. EDWARD C. H. MAIDMAN, ARCHITECT.

CONSUMPTIVE SANATORIUM, CO. CORK: FIRST PREMIALIZED DESIGN. BY MR. EDWARD C. H. MAIDMAN, ARCHITECT.

TOWER OF ST. MARY'S CHURCH, STAMFORD, Lincs. ST. CUTHBERT'S CHURCH, WELLS, AND CHURCH OF ST. PETER, HOWDEN (PUIN STUDENTSHIP PRIZE DRAWINGS). BY MR. J. B. F. COWPER.



Villesavin.



The Bishop's Palace, Blois.

In Illustration of Paper on the Architectural Association Excursion. (See page 500.)

EDUCATION AND EXAMINATION.

THE Revised Syllabus of the R.I.B.A. Intermediate and Final Examinations (see page 499) shows a marked advance on that now in force in that it gives more opportunity for the raising of ability and less for success by means of an accumulation of facts with or without the aid of the memory.

The candidate is permitted to specialise to a greater extent than has hitherto been the case. Even in the Intermediate stage the inevitable bent of his mind towards the artistic or the scientific side is more fully recognised, while, though these there are no optional subjects, ethical questions only cover the minimum range demanded by the exigencies of architectural practice. In the final stage the candidate's thesis now gives him an opportunity for selecting the branch of architecture towards which he feels his faculties incline him. He may either offer a study of historical development, one in the application of science to building problems, or an exposition of his powers of design; but, as this thesis carries more weight than all the practical subjects put

together, the candidate's special studies appear to receive adequate recognition.

While admitting that the new syllabus is far superior to the present one, and that it is perhaps well suited to the present condition of architectural education, we do not think it should be regarded as a final or permanent standard test for admission to the architectural profession.

Professor Blomfield, in a lucid introductory note, explains that the aim of the Board of Architectural Education has been to "humanise" the examination, and unquestionably the revisions are all in favour of intelligent study as against the accumulation of heterogeneous information usually effected by means of "cramming." When we say that the new tests should not be regarded as permanent in their form we are bearing in mind the fact that education and examination must act and react on each other; this time developments in architectural education have opened the way to these improvements in the form of the examination, but the latter in its turn is carefully kept within the scope of preparation available for the candidate.

Might not the examinations have gone a little beyond this, putting pressure on education to work up to their demands? For example, a design prepared in two days (even in conjunction with the testimonies of study) is a somewhat inadequate test of the skill that should entitle the aspirant to qualify as an architect, but it is enough to enable the candidate to exhibit as much as he has at present an opportunity of acquiring at most of the schools in this country.

It must be admitted, however, that it is useless to carry examining methods very far beyond the means of preparation available, and we must therefore look to our educational authorities to take the leading part in any movement for raising the standard of architecture by inculcating a sounder appreciation of its essential qualities.

These in their turn are hampered by the general indifference and lack of any widespread interest in this art. The less conscientious, fully aware that a high degree of artistic skill is not essential to the attainment of a good professional position, are inclined to shirk a long and arduous course of training unless forced

into it by the severity of the qualifying tests for which they must prepare themselves. Thus the schools would be helped by a well-conceived method of examination, while the examination can be strengthened step by step with improvements in education.

As regards the provision of a suitable incentive to the strenuous cultivation of the faculties to their highest pitch, we have yet much to learn from the French, who in their official recognition of the aims of successful students set an architectural standard impossible by our haphazard methods. Their Government system not only acts as an incentive to the artist, but also educates the layman, and impresses on him the value of the arts as a factor in the national life.

Something more than mere examination and something more than the award of prizes and studentships is needed. The student should be made to feel that his career is being watched by the highest exponents of his art in the interests of the nation, and that if he succeeds his achievements will be regarded as a national asset and the stepping-stones to the utilisation of his faculties in the most suitable fashion.

An examination by itself can do little; and Professor Blomfield seems to us to confuse cause and effect when he deplors the disappearance of the type of "student-scholar-architect" which existed at any rate as late as fifty years ago, and suggests that the effort now made in the reform of the examination would resuscitate him. The type he so rightly admires has been discouraged by causes quite outside the profession, and its educational methods and the revision of these will not bring it back unless accompanied by a successful effort to entirely alter the attitude of the public at large towards architecture and the allied arts. We do not say that architects have been free from blame in the degradation of their profession to "a merely mechanical business"; they are but members of the public, and have fallen under the same malevolent influences. It is quite right for them to try to set their house in order, but they must also seek and obtain the sympathies of those outside the profession if any permanent and far-reaching good is to result.

THE L.C.C. TRAMWAYS AND ST. PAUL'S.

IF we express our gratification at the postponement, by the London County Council, of the tramway scheme in connexion with St. Paul's Bridge it is in no spirit of hostility to the idea of tramway extension. On the contrary, we believe that the linking up of the north and south systems is a pressing traffic necessity. Tramways, like other human contrivances, have their defects; they may not be the final solution of our traffic problems, but in the meanwhile they are universally acknowledged to be an enormous practical convenience to the great body of the general public. As such any proposed scheme for connecting the north and south tramways through the City should be considered from the widest public point of view and not from that of the interests or prejudices of the property owners of the City.

Whatever may be the merits of the St. Paul's Bridge scheme in the eyes of the City authorities, we imagine that even its most ardent supporter would not put it forward as an ideal method of connecting the trams. Grudgingly, and of necessity, the City appears to have consented to the trams being brought within its sacred square mile; but only on condition that they were kept out of sight and out of mind in a tunnel.

It seems to us, however, that it is the duty of the London County Council, as the central authority for Greater London, to approach the question from an entirely different point of view. It is not their business to study the special interests of the City where they clash with those of London, or to look on this tramway scheme as a minor and inconvenient detail of a more important subject.

London, as Captain Swinton pointed out, needs a main through traffic route from the Angel to the Elephant and Castle: not just a narrow street tunnel, but a broad avenue or boulevard with tramways. This, as a general necessity for the convenience of seven millions of human beings, is, we take it, of even more importance to the State than the outraged feelings of the City Fathers. It is inconceivable that any reasonable human being who set out to create such a through traffic route would have deliberately chosen the method proposed by the St. Paul's Bridge scheme. As a local traffic convenience and as an addition to the amenities of the City, it could, no doubt, in competent hands, be made a great success and a useful means of disposing of the surplus funds of the Bridge House Estates; but as a through traffic route it is simply absurd, and we must say that we have always found it difficult to believe that anyone with the slightest knowledge of the subject could ever have seriously put it forward and supported it as such.

We have more than once pointed out that the natural through traffic route for this part of London is by way of Farringdon-street and Blackfriars Bridge, and we are glad to see that this idea receives the support of Captain Swinton. Being convinced that the more this question is discussed and thought over from the point of view of the traffic the more reasonable it will appear, we welcome the delay as giving more time for thought.

We are confident that when once the London County Council has grasped the importance of the question it will insist on a scheme which places the necessities of the general public first, while making such concessions to City interests or prejudices as humanity dictates. Surely it will never agree to the City riding rough-shod over the interests of the general public.

By all means let the City have its bridge, but let London have its through traffic artery also.

CHURCH, BELFAST.

The Archbishop of Armagh laid the foundation-stone on October 7 of the St. Donato Church, which will provide accommodation for 603 worshippers. The estimated cost of the work is 4,533*l.*, including fittings, and provision has been made for future additions to the transept. The contractors are Messrs. McIntyre Brothers, of Belfast, who are carrying out the work from the designs of Mr. E. H. Lingden Barker, architect, of London and Manchester.

NOTES.

Regent's Park and the Zoological Gardens.

It seems to be the general view that almost insurmountable difficulties lie in the way of removing the Zoological Gardens to the Crystal Palace or any other site more remote from the centre of London than the present one. At the same time, the 34 acres occupied by the Society are manifestly inadequate, and another 20 acres of the Park are urgently required. We should feel a difficulty in supporting the alienation of so large a slice from the present area of the Park unless it were possible to give compensation to the public in some other way. Three years back we published an article on the linking up of our public parks, which included, among other suggestions, a boulevard continuing the Broad-walk to Parliament-hill, thus bringing Regent's Park and Hampstead Heath into organic connexion with each other. The adoption of such an improvement is still possible, and the public gain would be so great that it would then be possible to give up the 20 acres at the north edge of the Park, provided this area were judiciously selected in conjunction with a comprehensive improvement scheme. As a resort for recreation the clay levels of Regent's Park are far inferior to the heights of Hampstead and Highgate, and a well-defined link between the two would tend to draw the populace from the lower towards the higher and more exhilarating area. We are firmly convinced that this improvement is both desirable and practicable, and the necessities of the Zoological Gardens only introduce one more argument for its consideration.

The Crystal Palace.

ONE of the latest schemes for the future of the Crystal Palace, promulgated in a letter to the *Times*, is that it should be used as the home of "the Museum of Architecture and Sculpture" that everyone interested in art, whether from the educational or the aesthetic point of view, so greatly desires to see established. We confess that we are not much in sympathy with this scheme. The writer of the letter wishes to see established in this country a museum of casts from architecture and sculpture of the lines of the Musée de Sculpture Comparée at the Trocadéro in Paris. But Sydenham does not bear the same relation to London that the environs of Passy do to Paris. The Trocadéro is reasonably accessible from any quarter in Paris; Sydenham is not reasonably accessible from the quarters in London in which those to whom a museum of the sort would be useful mostly dwell. The British Museum and South Kensington are easily accessible, and that is a matter which cannot be overlooked if we are to take into consideration the artist and student to whom their collections are of first importance. They must not on any account be placed out of the way, not even if to do so were to cause, according to the *Times* correspondent, "great rejoicing to the directors of those institutions." We have the greatest admiration for the casts at the Trocadéro, and we would like to see

an orderly and logical collection in London, but not at the expense of the collections at the British Museum and Kensington, and, in any case, only not gathered together at Bloomsbury. The collections in Bloomsbury and at Kensington have become parcel of the life and thought of those whom they chiefly concern (not occasional excursionist or American "sight-seers"), and they must not be removed without good cause. As for Crystal Palace and its site, there is no solution of the "open space," which requires no argument in our limited capital for its adoption.

Protection of Ancient Monuments. WE are glad to see that H.M. Office of Works, recognising the possibilities of the Acts of 1882 and 1900, is taking steps towards assuming further responsibilities in regard to the preservation of our ancient monuments, and has issued a letter to County Councils, stating that the use involved in guardianship would, in some cases, be more fittingly borne locally than by the County Councils, and inviting the latter to draw attention to any monument worthy of protection, and to view to allocation of the responsibility to the appropriate authority. This, at all events, is a step in the right direction, and, as we may confidently expect further developments in the future, it is gratifying to see that the position is not being neglected.

Balliol Chapel. A PROTEST from Messrs. Norman Shaw and Basil Champneys appears in the *Builder* against the threatened destruction of Butterfield's chapel at Balliol College. Bless the work of this architect; it is not appeal to the sympathies of all, but its virility and originality should justify its preservation, at all events till future period, when time will give a proper standpoint from which to appraise its value. The best work of the XIXth century may possess factors of interest which we are not capable of properly appreciating at the present day, and we should deprecate undue haste in its destruction, even if we think we can substitute something better.

Whitechapel Art Gallery. It was a happy idea on the part of those who are responsible for the Whitechapel Art Gallery to decide upon an exhibition which would bring home to Londoners something of the history of their great city. The West have for some time gone East when Whitechapel holds an art exhibition, and it is safe to say that in the latitude of interest the present exhibition will box the compass. The scale of its collection is extensive; appeals to the historian, to the painter, to the topographer, to men of arts and letters, to the collector of choice and of cheap things, to the mere antiquarian, with equal force. It may be compared in some respects to the collection at the Carnavalet Museum in Paris. The aim of the projectors has been, we may take it, first of all historical, the artistic quality of the particular exhibits

being a secondary matter. It is therefore all the more astonishing that so much artistic delight can be derived from a gregarious collection in which artistic considerations are only incidental. We find, for instance, examples of Jean Tijou's ironwork and Grinling Gibbons's carving; unsuspected drawings of Hollar; a large number of the oil paintings of Samuel Scott, one of the few artists who could combine topographical accuracy with the painter's sentiment; Rowlandson, whose tragic, realistic impression of things was expressed with a certain quality of grim humour. Then there are the De Jonghes and Van de Velde, which offer contrasts in method. We must not omit to mention Varley's "St. Pancras Church," Budd's "Greenwich," and particularly David Cox's "Old Whitehall with the Life Guards," although we should scarcely have expected David Cox to rank among the painters likely to be of topographical interest to London history. Architects will find much of interest in the collection; indeed, building of some phase or other forms the main subject of the mass of work of an illustrative character. And among the work of contemporary artists there are the pleasant water-colour drawings of Sir Ernest George and Mr. Frank Lishman to show the versatility, in other artistic mediums, of men of the drawing-board accustomed to the practice of a more geometric draughtsmanship.

The Oxford "High" and Overhead Tramway Systems.

THE Oxford City Council is to be congratulated on having rejected by forty-six votes to six the proposal to allow the installation of an overhead trolley system for the tramways down the High-street. We well remember the consternation which was caused when in about the year 1882 tramways were first permitted in "the High" at all, but the fact that the public have become habituated to horse tramways in this unique thoroughfare cannot be used as an argument for its desecration by the erection of poles and overhead wires. We understand that the installation of the overhead system over the whole of the tramways would effect a saving over a combined system of some 30,000*l.*, and we are glad to see that public spirit has prevailed over economy in this particular instance. Oxford had better be contented with the existing horse tramways than be guilty of an act of vandalism, and the local patriotism shown by the Council will be appreciated even beyond the confines of the British Isles.

The Railway Unrest.

SINCE our allusion to this subject last week a move has been made by the railway companies which, if not misinterpreted by the men, should go far to establish better relations between the two parties. Secure in the assurance recently given them that they will be permitted, if necessary, to recoup themselves from the trading and travelling public, substantial advances in wages have been promised, which will materially improve the conditions of railway service. It is to be hoped that some of

the wild talk which has been indulged in during the last week will now be modified and the conciliatory attitude of the companies recognised and appreciated. We notice that several bodies of traders have already taken alarm at the threatened increase in rates and fares, and are up in arms against any advance. It may be remarked that there are ample safeguards against undue increases, and that the more such advances are spread over all classes of merchandise the less it will be felt in any particular industry. Indeed, considering the economies that are being effected by the gradual abolition of duplicate services and unnecessary competition, the amount to be raised by increased charges should not very seriously affect either passenger fares or goods rates.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

REVISED SYLLABUS OF THE EXAMINATIONS.

WE take the following particulars of the Revised Syllabus of the R.I.B.A. Examinations, which is to come into operation next year, from the last issue of the *R.I.B.A. Journal*.

The Preliminary Examination will remain unaltered.

INTERMEDIATE EXAMINATION.

Testimonies of Study.

Before being admitted to the Examination the candidate will be required to submit the Testimonies of Study Nos. 1, 2, 7, 8, and 9, enumerated in the present syllabus [see *Kalendar*], also either No. 3 (Details of Classic Ornament) or No. 6 (Medieval Ornament), and, instead of Nos. 4 and 5, sheets of measured drawings of a building, with the plottings and sketches. For these Testimonies marks will be awarded by the Examiners, who will be free to allot a larger number of marks to the drawings than has hitherto been permitted.

In addition to the general subjects of History and Building Construction, students will be required to take a special paper either in some period of History, in Mathematics and Mechanics, or in Elementary Design. An extra day will be apportioned for this additional subject.

One hundred marks will be allotted for the Testimonies of Study.

NOTE.—The existing Testimonies of Study will be an optional alternative until January, 1914.

Intermediate Examination Time Table.

(A) Principal Styles and General History of Architecture, and the Purpose of Architectural Features in relation to the Buildings in which they occur:—

Two papers occupying six and a half hours in all 250 marks.

(B) Construction:—

1. Simple Applied Construction in Elementary Design, and the Properties and Uses of Ordinary Building Materials.

2. Theoretical, including Stresses and Strains.

Two papers occupying six and a half hours in all 250 marks.

(C) In addition the candidate must select one of the following subjects:—

1. Historical Architecture showing knowledge of one of the following periods, to be selected by the candidate:—(a) Greek and Roman; (b) Byzantine and Romanesque; (c) French and English Gothic; (d) Italian, French, and English Renaissance.

2. Mathematics and Mechanics—Algebra, up to and including the Binomial Theorem.—The Use of the Slide Rule.—Plane Trigonometry, including the Solution of Triangles.—Descriptive Geometry, including the Mensuration of Simple Plane and Solid Figures.—Simple Conic Sections treated geometrically.—General Statics and Dynamics, including Graphic Statics.

3. Design—dealing with simple subjects.

Paper (in one only of the above subjects) occupying four hours—200 marks.

Testimonies of Study—100 marks.

Total marks—800.

FINAL EXAMINATION.

Testimonies of Study.

Alternative Problems in Design, set by the Board of Architectural Education, will be published every two months in the *Journal of the Institute*.

Every candidate for the Final Examination will be required to submit as Testimonies of Study Designs in answer to at least four of the Institute Problems. These Designs, when they have been submitted to and approved by either the Council of one of the Allied Societies or by a Committee of the Board of Architectural Education, will be considered as qualifying the Student to enter for the Examination. Designs so submitted and approved will be marked in the Examination by the Examiners appointed by the Board.

Two hundred marks will be allotted for the Testimonies of Study.

NOTE.—The existing Testimonies of Study will be an optional alternative until January, 1914.

Final Examination Time Table.

(A) Design for a Building or Portion of a Building—350 marks.

Two days. At the end of the first day's sitting the candidate will be required to deposit with the Moderator the original draft of his project or a tracing of it.

(B) Construction, including Iron and Steel Construction, Ferro-Concrete, Shoring and Underpinning.

Two papers occupying six and a half hours—150 marks.

(C) Hygiene, including Drainage, Ventilation, Heating, Lighting, and Water Supply.

(D) The Properties and Uses of Building Materials.

(E) The Ordinary Practice of Architecture, including Specifications and the Law of Contracts.

Three papers occupying six and a half hours in all (50 marks each)—150 marks.

(F) The candidate must submit a thesis showing advanced and individual work in one only of the following subjects:

1. Historical Architecture—implying, as far as possible the direct study of actual historical buildings.

2. Science, as applied to Building.—By this is intended a special study of an application of science to definite problems of building.

3. Design including Decoration such as a study in Civic Monumental, Decorative, or other branch of Architectural Design.

The subject selected for the thesis is to be notified for the approval of the Board four months before the date of the Examination, and the thesis itself is to be submitted four weeks before the same date. The thesis, which may be either an illustrated essay or a design with a detailed report, will be assessed by Examiners specially appointed for the purpose, who will also examine the candidate orally in his thesis. It is open to candidates to obtain distinction in the advanced work, such special distinction to appear in the Calendar—350 marks.

Testimonies of Study—200 marks.

Total marks—1,200.



An ordinary general meeting of the Architectural Association was held on Monday at No. 18, Tufton-street, Westminster, S.W., Mr. Gerald Horsley, President, in the chair.

Mr. Hall, Hon. Secretary, read the minutes and some nominations, and announced that the annual conversation will be held on November 23 at 8 p.m.

He also announced that the Athletic Club Dance will be held in the Wharcliffe Rooms on December 8.

Mr. E. N. L. Walker, Stockwell, and Mr. R. C. Horsley, Ensworth, were then elected as members, and Mr. F. C. Eden as a member of the Council.

THE EXCURSION TO THE LOIRE.

Mr. H. H. Hill then read a paper entitled "The A.A. Excursion to the Loire, 1911," which was illustrated by a large number of lantern illustrations.

"Mr. President and Gentlemen.—As there are many minds, so are the points of view numerous from which the arts may be studied and enjoyed. And I think in no art are people's ideas of what is or is not to be admired so varied and so capricious as in our own art of architecture. To some a beautiful building only means one very much enriched in its details, exquisitely finished, and lavishly bedecked with carving and ornamentation. Others imagine that they have a great taste for architecture, because they love to visit old buildings, and try to conjure up visions of the personages and happenings that history associates with their walls. In both these classes professional architects are rare. There are some among us, however, who have

a curious knack of never regarding a building that is much more than a hundred years old as real, living architecture. Rather they treat it merely as an example, more or less important, of architectural development, an illustration to the history book. And they are far more concerned about the dates of its erection, the state and manner of its restoration, than they are about the aesthetic qualities of its design. But this point of view is now old fashioned, and is only a belated extreme phase of the great and valuable movement towards the scientific study of architectural history for which the last century is remarkable. For the majority of us nowadays I am sure I am right in saying that our chief interest in all buildings alike, whether new or old, lies in their actual appearance, whether the result of time and alteration, or of pure design.

Personally, I think it a good thing when one is looking at old work to consider it, for a while, at least, as design only; to study how certain means have brought about certain effects, and the aesthetic value of these effects, detaching altogether, for the moment, the various historical circumstances that also have had their share in determining the form of the architecture. Of course, from this point of view alone one could not make a complete study of any particular building. But we really are not often concerned in the making of such studies. We, as modern designers of buildings, go out to see the world done by our ancestors. We are not so much interested in our ancestors as we are in the architecture.

So this evening, since time did not permit us completely to study any of the buildings that we saw in the Loire Valley last August, nor will it now allow me fully to analyse them, I want to do my best to describe to you the architectural impressions that I have received. These, I fear, being no more than the impressions of a first visit, will have little value as serious criticism. I hope that they will have this merit, at all events, that they will evoke the expression of ripe judgments than my own.

The chief aim of the Excursion this year was to visit the Early Renaissance châteaux of the work of the School of Tours, which are so plentifully scattered about the Loire country, from Orléans downwards. But there was also a considerable amount of interesting church work to be seen. Yet it seems to me that in Touraine we were in kind of ecclesiastical no man's land. To the south of us was the great province of Aquitaine, with its distinctive type of Romanesque church. To the west was Anjou, where the development of vaulting made its own peculiar progress in the XIIIth century. And to the north-east lay the Île de France, where



Gateway, Fontevault.



Château Du Moulin.

th-century Gothic shone with its greatest
an.

Touraine were not in the rut of any
cultural type of work. The most import-
ant seems to have come from the
And the further we travelled down
ver the more we seemed to encounter it,
I finally we reached Fontevault, whose
s are hardly less epoch-making in the
ry of architecture than those of Perigueux

e Abbey of Fontevault has had its
itudes. In 1804 it was turned into a
n, and at that time the church was sadly
ated. I think three of the domes
aken down. Now restoration is in
ess, and the almost classic magnificence
ave can again be seen. The east end
ferently designed. There are no piers,
ntives, and domes. Closely-spaced
ns of unusually long proportions are
and their rising lines, crowned by
arches, have a very vigorous effect. I
ry that I have no views of this remark-
church; for within the prison photo-
y was absolutely forbidden. Our only
was the outside of the gateway, an
isting piece of work of the XVIIIth
ry.

e next most important church of the
al type, but a variant of it that is
ie, was that within the castle precincts,
oches. Begun in the Xth century, the
ay at the west end of the nave is all
remains of the earliest portion. This
rel vaulted, and carries a tower and
added in the XIth century. The next
ays carry extremely curious pyramids,
onal on plan. The interior effect of
is most weird and mysterious. Viollet-
le was enraptured with the romanticism
whole church. We saw it under the
of conditions, when the brilliant August
ent the light right up to the apices of
domes. But in dark weather I should
that the building must appear to be
ed in inscrutable darkness, gloomy and
ying to an extreme degree.

Blois the most interesting church is that
Nicholas, of which the nave is early
and the choir XIth century. Here
fluence of Aquitaine and its domes is
slight. There is an attempt at one over-
crossing, but evidently the plan was
red, and eight ribs, carrying a vault,
g from the rim of the pendentives, upon
also stands a blind arcade, as though
had been an idea when changing the
of converting the dome into a lantern.
capitals of the choir are also interesting,
are full of classic feeling.

quite another type is the church at
es. This dates from the end of the
to the XIVth century, and is one of
hall" type, with the aisles rising to the
height as the nave. The exterior did
strike me as possessing much interest,
es for the porch, but the interior is
very fine, and full of dignity. The piers
clustered, rise to a considerable height,
are very well proportioned. The light-
s principally from long lancet lights in
aisle walls, treated in quite a simple
er, but greatly assisting the sense of
in the building.

Among other churches seen on the Excur-
was a fine Romanesque tower and apse at
es, the latter built in the IXth century.
spire was added in the XVth century,
the remainder of the church, which is
fully, within the last half century.
e parish church at Fontevault, Angou-
me in the vaulting is strongly marked.
e is also a square east end, yet vaulted
ough an apse had been intended. Blois
edral is a XVIth-century attempt at
ic, and naturally is rather dull, except
e tower, where the architect returned to
own Renaissance. Tours Cathedral I will
tempt to describe. I barely saw it, and
add very much like to see it again, for
can be no doubt about the magnificence
west front.

turn now to the châteaux that we
ed to what I take it was the real
of the Excursion—we find that in
class of building there was much more
tectural unity than in the churches.
could see also in them the continuous
opment of the habits and conditions of
rough several centuries, and along with
evolution of the architectural sense. In

the beginning the fortress château, built for
defence, often rose to the dignity of archi-
tecture, because if not "proportioned unto
the rules," it was, at all events, "solid,
masculine, and unaffected."

Sincerity in Design.

At a later period, when defence ceased to
be the first consideration, and architectural
magnificence was eagerly sought, the elusive
fairy sometimes all but escaped, leaving in
her room but a heap of carvers' pranks. Here
certainly architecture was "unaffected," and
in good work there was evidence of an en-
deavour to understand the "rules," though
it did not always look "solid," and often was
anything but "masculine." Finally, with
the rise of the modern architect, trained in
both construction and aesthetics, the four
requisites of Inigo Jones could be well fulfilled,
as, indeed, we saw them, in François
Mansart's fine wing at Blois. Henceforth
the most frequently broken condition in the
quartette was, and is, that architecture should
be "unaffected."

In the original mediæval castle at Loches,
now a ruin, though in its day one of the
most important fortresses in France, at all
events, there was no affectation. Nothing
could be plainer than the walls of the
donjon, relieved only by semicircular
buttresses. Nothing more than solid building
was aimed at, and nothing more attained.
The interior became a prison, I suppose, when
the present château was built, and in it the
art of torturing appears to have been brought
to an unusually high state of perfection. What
is now known as the château was built at the
other end of the site, by the Kings
Charles VIII. and Louis XII., that is to say,
between the years 1422 and 1515. Pic-
turesquely situated well above the town, the
verticality of its fenestration is telling; though
from the level of the terrace, as the view on
the screen shows, the unusually heavy string-
course becomes almost the most important
line in the composition. There was nothing
of exceptional interest in the interior, which
is no longer inhabited, except the tomb of
Agnes Sorel, removed from the church, for
some reason, by order of Louis XVIII.

Rising out of the town in the same way as
the château of Loches, but with the added
advantage of being on the bank of the Loire,
is the royal château of Amboise. Here what one
sees to-day is but a fraction of what formerly
existed; for Napoleon I., in an evil hour,
granted it to one Roger Ducos, who, in order to
save himself the trouble and expense of repairs,
destroyed a large portion of the buildings.
What remains is perhaps of more interest on
account of its fine situation, and its exciting
and lurid history at the time of the Reforma-
tion, than as a masterpiece of architecture.
In a novel that I read recently, an admiring
lady described it as looking as though it were
carved out of ivory. But such damning praise
is totally undeserved. Probably that very
spiky row of dormers, which really detracts
from the fine proportions of the lower parts of
the building, was what evoked the lady's
admiration. The tower is interesting. In-
side it is a sloping way, up which horses
and light vehicles can be brought. It is top-
lighted, and the piers around the light well
in the centre assist in carrying the inclined
vault. The chapel stands isolated from the
other buildings, and is an excellent example
of what was good in late Gothic. The re-
mains of Leonardo da Vinci lie buried here.

Military Engineering and Architecture.

At Chaumont the château is again situated
standing high up over the Loire. But it does
not rise up out of the town like the other two.
From the river it appears part castle, part
country house, standing among trees, well
above the straggling village by the waterside.
At close quarters; however, it becomes much
more like the work of the military engineer
than of the architect, in our sense of the
term. The exterior originally must have been
strongly defended. Even now the inserted
windows are comparatively few. The en-
trance to the courtyard is between the towers
at the south-east angle, and whether
deliberately designed for its effect or not, it
is a fine piece of architecture. The coats of
arms on either side of the drawbridge, an
unusual position, would have been better
omitted; but for them, I suppose, the client
was blame. The slots over the entrance
to take the arms of the drawbridge are

effective features, and we saw a number of
them in various places. Originally the build-
ing entirely surrounded the courtyard; but
in the XVIIth century the north side was
taken down, in order, I suppose, to open up
the fine view across the river. The increased
light and air is probably an advantage to
the comfort of the house, which is still in-
habited; but the general design naturally
suffers from being thus dissevered.

Langeais is another mediæval castle, grim
looking enough from the outside, though re-
stored and inhabited at the present day. The
original donjon was built in the Xth century;
but practically the whole of the building now
to be seen dates from the XVth. In the
Middle Ages this château was of great impor-
tance, but from the XVIth century onwards
it seems to have passed fairly quiet days. I
suppose it was too mediæval to tempt any-
body to covet it and fight for it, and too
solidly built to suffer much from decay and
mutilation. About the year 1840 it was re-
stored, and again about thirty years ago.
The work has been most carefully done, and
the late owner has gathered together within
its walls a most interesting collection of furni-
ture, tapestries, and other domestic accoutre-
ments, mostly work of the XVth century.
Indeed, both here and at Chaumont, the frow-
ning mediæval architecture gains greatly by
being continuously inhabited and furnished,
if not with the original, at all events with
the kind of furniture that it must once have
contained. There are also some very good
chimneypieces in Langeais, by the way.

Not far from here, and also at the north
side of the river, is the little town of Luynes,
the chief glories of whose château are its pic-
turesqueness and its magnificent situation.
Perched at the end of a range of hills, it has
a fine view over the Loire, and looks very
imposing when seen from it. But at closer
quarters it is neither so big nor so powerful-
looking as its neighbour. The buildings are
partly XVth century, and partly early
XVIIth, the latter marking the transition
from the exuberance of the Renaissance to the
Classic school of Louis XIVth's reign. The
smallness of scale still remains; but a much
greater quietness and sobriety of treatment
has arrived.

Brickwork is not common in our part of
the Loire country, and the only example that
we saw of a brick château was Du Moulin.
Built in the latter half of the XVth century,
this château remained certainly until the
middle of the XIXth in the possession of the
descendants of the original builder. But
since then, I fancy, it must have fallen upon
evil days. Victor Petit in 1861 describes it as
being carefully finished in the style of the
time of its building. But an edition of the
Guide Joanne which I have, published twenty
years ago, only mentions the château casually,
remarking that a portion is still standing. Its
luck, however, has again turned. The house
was restored about six or seven years ago, is
inhabited again, and beautifully furnished
with contemporary furniture.

The general plan consists of a square plat-
form surrounded by a moat. The whole of
the east side is occupied by the gatehouse and
adjoining buildings. In the centre of the
north stands the house itself. Its plan is
simple. There are two rooms on each floor.
A projection to the south contains the
entrance and staircase, one to the north the
offices, pantry and basement stairs on the
ground floor, and bathrooms above. A
picturesque chapel juts out at the north-east
corner. The kitchen is in the basement, which
is not sunk low enough to be below the water
level of the moat.

The whole group is very quiet and very
charming. It is historically a step in
advance of the other châteaux that I have
mentioned, for it is no longer the castle of
a feudal lord, but the house of a gentleman,
fortified, as the times still demanded. One
envis the architect who had so interesting a
building to restore, and his skill in restoring
it. I notice he has kept faithfully to the
view in Petit's book. One addition only has
escaped my attention. The fliche over the
gatehouse did not exist in 1860, and as an
improvement it is open to question.

Blois and the Renaissance.

At the château of Blois we reach the Renais-
sance. The building, indeed, really con-
tains work to suit all tastes—late Gothic, the

Renaissance, and Early French Classic (for I always think the term Renaissance is hardly suitable to mature and adult architecture, like that of the Louis XIVth wing here). But the chief glory of Blois, in the mind of the ordinary tourist, at all events, is the François I. wing. And certainly it is brave stuff. Curiously enough, it contradicts the accepted proverb that "distance lends enchantment to the view," for the closer one gets, the more one admires the beauty of the detail, and the more one tries to get back and look at it as a whole, the more one is amazed at the happy-go-lucky way in which the design was set out. Philibert de l'Orme was not born a day too soon. At the time of the Renaissance French masons were past masters of their craft. At Blois, indeed, there was no difficulty that they could not surmount, and the staircase is undoubtedly a very marvel of dexterity and beauty. But beautiful features do not necessarily make beautiful architecture. And what was lacking in the early days of François I.'s reign was the mind of the architect to conceive and to control. The Renaissance meant the rebirth of architecture as intellectual design, and although the old combinations of craftsmen tried hard to master its forms, they only attained to picturesqueness of detail, and never reached with them the nobility that they had attained with their own Gothic. To put what I think of this part of the château into present-day office slang, I should say that it had been very cleverly "half-inched," but on a series of small pieces of paper, and that the eighth scale elevations had never received any consideration. As a result the building is altogether without rhythm. The vertical divisions of the side facing outwards are really exasperating. And it seems such a pity that this great accumulation of fine details (for the overloaded cornice on the courtyard side is the only one that is objectionable) were not combined and unified by some synthetic mind.

The earlier entrance front is a happier piece of work. Here there is no pretence at regular fenestration. Stone shafts make vertical divisions, and windows occur anywhere in the panels between. The effect is quiet, and the only blot on the design as a whole is the doorway, a feature pushed in anyhow, instead of one developed out of the general scheme, and one again showing the need for the modern architect, that was growing even when the Renaissance had hardly begun. The figure on horseback is of Louis XII., and is modern. I cannot help thinking, by the way, from the niche in which he stands, that the doorway was designed by one whose true vocation lay in making tombs and monuments in churches.

This whole front was greatly restored during the latter half of the last century, as, indeed, was the whole château. After the Revolution it was turned into a barrack, mutilated and ill-used, until, in the early forties, after a tussle between the Minister of the Interior and the Minister for War, it was rescued to be preserved as a *monument historique*. The only part now remaining



The Château, Blois.

unrestored is the interior of the latest building designed by François Mansart for Gaston d'Orléans about the year 1637, a building that was accounted a sin by all true romanticists of the XIXth century. Most people nowadays, however, will think less hardly of it. Yet, though well placed in the courtyard, it does not show to the best advantage in its surroundings; for mixed styles in architecture never get on together, any more than would a Turner, a Raphael, and a Sorolla in close proximity in a picture gallery. The ceiling of the vestibule and staircase is the only part of this wing shown to visitors, and it is indeed worth coming to see.

After being somewhat irritated at Blois by the way in which the François I. part, through carelessness of design, just misses the point of being really fine, the visit to Villesavin on the following afternoon was indeed a blessing. Here was a real French gentleman's house, a house that no one could live in without feeling the influence of its ordered refinement. The disposition is eminently architectural, not absolutely symmetrical; for instance, the two end pavilions vary a little both in dimensions and detail, and the blank wall of an orangery comes opposite the west wing shown on the screen; but the balance is perfect. The house seems to have been fortunate in having been built all at one time, and without serious alteration since. I should think that there must have been stone mullions and transoms in the windows originally, but I don't feel their loss much to be regretted. To my mind, French mullioned and transomed windows are often rather heavy looking, and by no means so elegant in their proportions as are the usual English variety. Villesavin was built by Nicholas le Breton, Sieur de Villandry, and Financial Secretary to Francis I. The Le Bretons were a family of masons; and this one managed somehow to improve his own house with materials from Chambord, at the same time in course of erection. Two of the dormer windows on the right-hand side of the courtyard were intended for this great palace, and for some reason not used there. Also the beautiful Italian fountain, being thought not good enough for a royal residence, found its way here. And possibly the exquisitely-refined doorway in the orangery wall may have been another little picking. Whether Francis ever got credit for these when the Chambord accounts were being settled, I have no idea; but the fact that De l'Orme, when appointed Surveyor General to the Royal Buildings, dropped severely upon another member of the Le Breton family, making him refund 18,000 livres overpayment for work at Fontainebleau, is significant.

Restoration at Villandry.

At Villandry we spent a most exhilarating morning. The château, standing on the site of a mediæval predecessor, of which only one tower remains, was built in the second half of the XVth century, altered in the XVIIth and again, for the worse, in the XIXth (I

presume about the thirties) by some English people. It is now in the throes of alterations, but this time undertaken in spirit of architectural zeal, with much taste and judgment, though some of us may think without quite sufficient leaven of discretion. M. Carvallo, the present owner, who describes himself as owner, architect, builder, workman, very kindly devoted a morning to our entertainment. He took us all round his garden, and showed us what the English *bestiaux* had done. There had originally been a very large formal garden; but when the English family arrived, believing themselves no doubt to be people of great taste and followers of the romantic revival, devotees of landscape gardening, they levelled all the terraces, did away with the formal gardens, and planted grass and trees everywhere and anywhere. M. Carvallo bent upon restoring all this. He is at work excavating, and has already found the lines and sometimes the walls of the principal terraces and walks. The garden immediately in front of the house he has already laid out, and very well he has done it, too. But in scorn of grass as an herb for garden effect, I don't think many of us will share. Grass can be kept green and level all the year round—in our countries, at least, if not in his and therefore is surely as suitable anything else in a garden colour scheme.

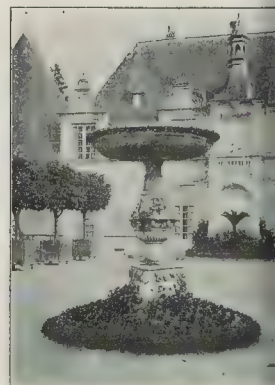
In the house, too, he is making sweeping alterations. He is restoring it as nearly as possible to what it originally was. Certainly it had been spoilt, as the photographs before and after will show. Many of the old windows were only shams, he assured us. The tower certainly looks better solid than it did when pierced with windows, even that, of course, the newly-built-up portion look very patchy at present. But it is a better foil to the rich Renaissance work. Removal of the terrace and bridge at the end of the house, too, as done no harm.

M. Carvallo is nothing if not an enthusiastic Architect, he freely confesses, has altered his whole outlook upon life. He was a scientist, and Villandry has brought him addition, culture, civilisation. It has humbled him. He even went the length of telling us that we, as architects and artists, should aim at once as better-looking, and more intelligent-looking, than the ordinary man of commerce and affairs!

From Villandry we drove to Azay-le-Rideau to the château that, if I may make bold to choose, was the gem of the Excursion. The river front is altogether delightful. There is a kind of music in it, obtained, I know how, except by a happy combination of excellent qualities. Good proportions, a scale, fine scale, and symmetry, though last is by no means the mathematical as for there are many little irregularities with the eye does not at first detect. But quality which above all others distinguishes it, and makes it so much finer than the work of the same period at Blois, for instance, is its marvellous rhythm. With the bright sun upon it, the whole elevation dazzles one.



The Château, Blois.



Italian Fountain, Villesavin.

shimmering whiteness. It seems hardly

At the other side, too, the approach is really charming. A long, straight, avenue the axis of the entrance doors leads one past a pair of excellent gate piers of XVth or XVIIth century design, upon the side of which, facing the chateau, are picturesque stable buildings, erected about the same period. These piers serve a very useful purpose. They block out the view of the whole of the chateau, allowing one to see only a vista of the entrance. For feature it is, and a good one itself. But I think it must have been a corn in the side of the architect of the building. I should fancy the history of it must have been something like this:—Gilles Perhelot, the owner of the house, and some one Treasurer-General to King Francis I., probably wanted to be in the latest fashion. He wanted to have in the middle of his house a fine feature, containing the entrance and staircase, all done in the new Italian style. Accordingly he did just what many another foolish client would do to-day. He dispensed with his architect's services for this portion of the building, and introduced the sculptor from Italy over his head. The sculptor actually did well, on the whole, though there is a good deal of petty nonsense in his detail. But where he failed was where a great many other people used to fail at the same period. He did not realise that what he had designed was in no way a part of the building to which belonged. It is just as if one design were inserted in a part cut haphazard out of another.

I have left mention of the Chateau of Chenonceaux to the last for this reason. It contains the latest development of architecture at we saw, with the exception of Mansart's wing at Blois. But whereas at Blois the characteristic part—the part that one always, though, may be involuntarily, associates with the name—is the wing containing the staircase, at Chenonceaux the bridge gallery is the picture that flashes to one's mind with the word. This, together with the stables and also, is the work of Philibert de l'Orme.

De l'Orme, having studied his art in Rome, was practically the first French architect to understand what classic architecture really meant. Not only did he see that it was more than an affair of decorative details, such as had marked the Renaissance up to this, but at a building should be a single work of art, the intellectual output of a single individual. The system of producing architecture by collective craftsmanship died with the old Gothic. De l'Orme hated the older of things; and he probably saw enough of the bad work resulting from a combination of French masons of the old school, with alien carvers and painters of the new, each of sympathy with, and failing even to understand, the aims of the others.

In the bridge of Chenonceaux the feeling is different from any of the contemporary work in the neighbourhood. The building is not better than some of the others that we saw. I do not think it is as brilliant a piece of work as the river front at Azay-le-Rideau. It contains certain faults of detail, such as the missing out of some of the modillions in the cornices, in order to bring in the tops of the pediments, and the placing of semi-circular headed windows in the rounded bays over the piers of the bridge—this being rather peculiar of De l'Orme's weakness for contrived feats, for there was a certain difficulty in doing what the surveyor would call circular circular work. But this bridge is a design. I feel that the quality of breadth which it possesses was sought for deliberately and scientifically. Every effect was first considered on the drawing-board. To compare again with Azay-le-Rideau, the one is a statue, the other an impromptu.

The remainder of the chateau, also partly built over the river, makes a good foil to De l'Orme's more serious work. On both sides groups up in a very picturesque manner; at the stunted proportions of the first floor rather spoil the effect of the entrance front. One's sympathies are all with Diane de Poitiers. To be turned out of so beautiful a home as soon as it was hardly completed by the jealous vengeance of Catherine de Medici was a harsh punishment.

I cannot conclude a description of this

year's Excursion without some reference to the towns.

At Blois we spent more time than anywhere else. And a very pleasant little town it is, too. With the chateau one hill, and the cathedral on another, the town itself converges to the river bank and a fine bridge across the Loire. Here is a piece of laying-out that will commend itself to town planning enthusiasts. The axis line of the bridge is continued through a portion of the town, climbs by a flight of steps uphill, past a big tower bed, and terminates in a statue to Denis Papin, a native of the town, and the George Stevenson of France. From here the view looking back is most impressive, for the same line is continued to the horizon in the other direction, in a fine *route nationale*, between forests upon either hand.

In addition to the buildings already described are many others that are worth seeing. There are two interesting XVIIIth century gateways close to the cathedral. I have a side of one of them. They lead to the Bishop's Palace, the gardens of which are open to the public, and from where there is a fine view across the river and over the surrounding country.

Tours is a very different town. In the first place it is very much bigger, and then it is



Chenonceaux.

situated on flat ground at the south side of the Loire. Nominally, we stayed here for a longer time than we did at Blois; but we were so occupied with our excursions into the neighbouring country, that really it is hardly correct to say that we visited Tours at all. This was unfortunate, but it was also unavoidable. The town is interesting from many points of view. It contains many old buildings of all periods. But the general impression that one gains is that of a modern city, not much more than 120 years old, well laid out, and the majority of its buildings belonging to the latter half of the last century. The town glories in a new Hôtel de Ville, a building which suffers from too much sculpture, and a general want of restraint. I prefer the older Greek revival, Palais de Justice, which balances it, and is more in keeping with the general quiet air of the architecture of the place. The building of which, naturally, we saw most was the railway-station, a very fine piece of work, and, unlike almost any station that one can think of in England, a pleasure to the eyes.

When we went to Leches we visited a typically mediæval city, clinging round the base of the feudal castle. Here there is no town planning. The streets are narrow and winding. They have that mediæval trick of never seeming to go straight for anything. The Early Renaissance Hôtel de Ville is unceremoniously poked into a corner, and built up against one of the gateways of the old town. The Tour St. Antoine, all that remains of an old church, is a landmark; but, like so many other Early Renaissance towers,

is not a success. Early Renaissance forms are too small and too refined to be of value in tower design, where bigness of scale and boldness of outline are the chief requirements. If that tower had been built in the old Gothic days, the walls would have been battered, and something would have been made of the buttresses.

Saumur looks a fine town as one approaches it. Our first view took in a strictly orthodox classic theatre, just over the bridge, an imposing building, though rather dull. The Hôtel de Ville, a little farther up the town, has much more life in it. Partly Gothic and partly Renaissance, I think the earlier work, with its plain wall space and quaint roof, was the more interesting.

Mr. President and gentlemen, when I began my paper, I mentioned first the Abbey of Fontevault, visited on the last day of the Excursion. In speaking of the town of Saumur I have now got round to the last day again. I fear that in recording my impressions I have taken up a great deal of your time. I regret, too, that I was not better qualified to perform the task; for as I am, as you will probably by now have discovered, quite without any special knowledge of the history of French architecture. When I try to find the reasons why I should have written this paper at all I can find none, save this—that the President asked me, and I felt so flattered that I could not refuse!

The President's

in inviting discussion, said that, in the last words of his interesting paper Mr. Hill had told them how he came to address them upon the subject. It was a privilege belonging to the President for the time being to ask one of the members present at the Annual Excursion to read a paper on the Excursion to the Association, and he thought they would agree that in asking Mr. Hill to undertake this work he was very fortunate in his choice. It seemed to him that Mr. Hill was altogether too modest, when he disclaimed any special knowledge of the history of French architecture. His paper, on the contrary, which was extremely sympathetic and a just and critical account of much that was seen on the recent delightful Excursion, proved, at any rate, that he had a wide knowledge of the subject and a true and deep insight into the enthusiasms and those irresistible motives which impelled forward the development of French architecture. Certainly, the Association was fortunate in its choice of the *locus* of the Excursion; rich, as they had heard, in works of the greatest architectural interest, it was also rich in the beauties of Nature. They did not see the River Loire in a moment of her special power and magnificence, but they saw her in summer mood and dress, supremely beautiful under the bluest and clearest of skies. Mr. Hill had rightly lamented in his paper the fact that they could not give more time to seeing the city of Tours. There was a large amount of fine old painted glass in the Cathedral, and the bays of the choir and of the nave were fine examples of that splendid treatment in bay design of large clearstory windows the full width of the bays. There was also a remarkable XVIIIth-century organ front in the transept. Tours also was famous for some good town planning, especially where the principal bridge crossed the river. The churches were extraordinarily interesting; particularly the Abbey of Fontevault and Candès. The plans and sections of the former should be familiar to all. Mr. Hill had referred to the fact that some of the chateaux they saw were rich in their possessions in old furniture, and instanced Chaumont and Langeais. This was notably the case, and, besides furniture, the wealth of fine tapestries of different dates was quite remarkable. The painted ornament also in the wooden ceilings formed part of interesting schemes of decoration in the rooms, and in connexion with this one remembered the fine tiled floors. He was glad Mr. Hill spoke of the chimneypieces at Langeais. They all agreed that the two they saw there were among the best they had seen during the tour.

Mr. J. Johnson,

who proposed a hearty vote of thanks to Mr. Hill, said the detail of the work the party saw was most charming; the arabesques on

the pilasters were of the greatest possible refinement and delicacy, and there was a most delightful Italian feeling in the work. There was no doubt that many of the châteaux were, in part, very much alike, but they varied in so many details of turrets, dormers, and chimneys that they were exceedingly picturesque; and after having a surfeit in this country of the Georgian box of bricks period, old and new, with poor cornices and heavy swaggering enrichments, it was interesting to go over and see how the French had treated their residences.

Mr. H. D. Searles-Wood.

In seconding the vote of thanks, said he was not one of the party this year, but he had followed the paper with great interest. Professor Blomfield, in his paper at the R.I.B.A. last December, made the remark that François I. was his own architect to a large extent, and he did not want the professional architect under him; and that might account for some of the little irregularities in design which Mr. Hill had referred to. Mr. Noel Williams' "Henri II." gives an interesting account of the history of the period during which most of the châteaux on the Loire were built. He might mention that at Tours there was a very interesting Cours de Vacances in French for English people in connexion with the University, and he had brought a little pamphlet about it, because he thought that some of their students might take the course. It was carried on during the month of August, the courses in the University for French being in the morning, thus affording the opportunity for visiting places of interest in the afternoon.

Mr. Louis Ambler

said he should have liked to have taken part in the Excursion in order to renew his acquaintance, made twenty-five years ago, with these delightful châteaux and churches. The only two he had not seen of those described by Mr. Hill were Du Moulin and Villandry. The month he spent in the district was taken up in sketching, and he wondered how the excursionists were able to see as much as they did in a week; he did not see much more in a month. Mr. Hill did not say much about Chambord. [Mr. Hill: I did not go there.] It was very picturesque and imposing at a distance, and vast, but a little disappointing when one got close to it. What one expected to find was black marble inlay was found to be only slate stuck on; it was effective, but poor as a material used in that way, and the detail was rather coarse compared with the other châteaux. When in the district he was able to sketch inside Chaumont, but that did not seem to be permitted now; he measured up an interesting fireplace there, in the Astrologer's Room, as it was called. Azay-le-Rideau and Chenonceaux also contained much old furniture. Blois showed the evolution from Gothic to Renaissance. In those days the wing at Blois by Mansart was considered inferior, but views had changed, and now that work was looked upon as superior to the rest.

Mr. Andrew Oliver

said that one important point to take into consideration was that the châteaux they had seen exemplified clearly the gradual transition from the fort and the fortified house, pure and simple to the château or dwelling. At Losches he had a fortress; at Langeais there were battlements and machicolations, and these machicolations, although they were used first of all as defence, at Azay-le-Rideau, the defence idea had gone, and they were used simply as ornament. At Chenonceaux Cathedral they found a château, but in an old portion of the building machicolations. What was very unusual in that part of France was a fortified church tower, to be seen at Candès, that was almost a counterpart of the western front of Beziers Cathedral, as the machicolations and circular windows are similar in both cases.

Mr. A. T. Bolton

said that in 1893 he was in the district, going through and further south to Spain. He did not think that anyone going through the Valley of the Loire could fail to be impressed with the architecture, though the drawback was that the facilities for sketching were not

great. About 15 miles further south there was the château of La Rochefoucauld, which was deserted except for the caretaker; and there it was possible to measure and sketch, but the work was not so fine in detail as that further north. He thought Mr. Hill had been rather hard on François Premier work. After some interesting remarks on the period from 1520-1600 to show the relations between Italy, France, and England, Mr. Bolton said that they could not consider these châteaux as entirely dissociated from the history of the times. How did the châteaux come to be built? Well, François I. was a man who was always building, taking an interest in building châteaux as any other potentate might have taken in building ships, and large sums of money were expended in this way, for no sooner was one building finished than another was started; but François never troubled to repair the buildings when they required it. Some of these châteaux were gifts to ladies of the Court, and if one wanted to know about the relations between the King and the artists of the time they would find it most interestingly given in Benvenuto Cellini's own account of his relations with François I. The picturesqueness of the epoch seemed to be reflected in these beautiful châteaux, and it lent very great interest to them. Other smaller buildings of the period besides the châteaux were of very great interest, and the whole district was very well worth going to and staying in as long as one could.

Mr. E. Gunn

said that Mr. Hill's similes had been admirable, but he had hardly made it clear that what was left at Amboise was but a mere fragment of the original.

Mr. Yates

said the arrangements for the Excursion were well carried out, and great thanks were due to Mr. Hennings and Mr. Talbot Brown for the arrangements they made.

Mr. G. H. Jenkins

said this was the first excursion he had ever been to, and he hoped to continue going. He believed that if a man went once he was likely to continue going, for he would find out what a splendid thing saw a A.A. Excursion is. The party this year saw a lot of interesting work in connexion with gardens and laying out.

The President put the vote of thanks to the meeting, and it was carried heartily.

Mr. Hill,

in reply, said that in passing the vote of thanks to him he thought they ought to include Mr. Greig and Mr. Farrow for photographs and slides which had been shown on the screen. He was sorry to be accused of being severe on the architecture of the François Premier, though perhaps he was wrong to use the words "carelessness of design." But, perhaps, owing to the circumstances of design—to François being his own architect, and to the fact of the buildings growing bit by bit and as needs would require—they did not grow quite as they were intended. That was certainly the case with Blois. The enthusiasm of the age, he fancied, sometimes outran the scholarship of the race of architects that was growing up. As to the observation that he was not very clear about Amboise, he was afraid he did not know how great was the extent of the château before part of it was destroyed. The French Philistines, no doubt, were far worse than the English ones; they destroyed ruthlessly; in fact, a great many of the châteaux were entirely destroyed in the XVIIIth century, because people did not want the trouble of keeping them up.

The President announced that the next meeting will be held on November 13 (combined meeting with the Camera, Sketch, and Debate Club), when a paper by Mr. J. B. Fulton, A.R.I.B.A., entitled "That the True Hope of Architecture Lies in the Study of Good Modern Work," will be read.

The meeting then terminated.

[For the photograph of Du Moulin (p. 500) we are indebted to Mr. Baxter Greig, A.R.I.B.A., and for the others reproduced in this report to Mr. A. W. Hennings, A.R.I.B.A.]

ARCHITECTURAL SOCIETIES.

The Glasgow Technical College Architecture Craftsmen's Society.

At a meeting of this Society held in the Society's Room, in the Technical College, James S. Boyd, President, in the chair, Professor Charles Gourlay, B.Sc., A.R.I.B.A., delivered a lecture entitled "The College Diploma and Certificate Courses in Building." In his introductory remarks the lecturer pointed out that it lies more with the student himself whether or not he succeeds in obtaining a thorough knowledge of his subject than with his teachers or the general course which has been planned out for him. The student requires to exercise such qualities as earnestness and thoroughness, also the faculty of taking pains to understand and learn what he is taught. From the practical point of view the most important quality to be cultivated by a student of building is the habit of accurate observation. Assuming a student to possess these qualities, then the greatest profit, in so far as attendance at classes is concerned, will accrue to him if he takes those classes in the order which experience has proved to be most beneficial. The fundamental idea underlying all courses of instruction is the desire on the part of the educational authorities that the student should receive a good foundation and a thorough equipment for his work in life. They wish him to leave college strong in his subject and able to pursue his labour with as great certainty of being right in their as is possible. The lecturer then detailed the day and evening courses in building, dealing with the Entrance Examinations, the Continuation Schools, and the place they fill in the courses of study which lead ultimately to the Junior and Senior Certificates and to the Diploma of the Technical College, which is the highest point at present attainable by the student of building. In conclusion, the lecturer said that the education of the building student was a serious matter, and much of that genuine happiness to be found in one's work in life depended on the sense in which he pursues his studies, which when completed, should greatly add to his skill and to the pleasure in exercising it, which practical work affords him.

Wolverhampton and District Architectural Association.

At the general meeting of the Wolverhampton and District Architectural Association, held at the Library, Waterloo-road, the following officers for the year 1912 were appointed:—Mr. T. H. Fleming, President; Mr. W. J. Oliver, Vice-President; Mr. A. W. Worrall, Hon. Treasurer; Mr. W. Weller, Hon. Secretary (15, King-street); Messrs. F. T. Beck, W. Edwards, and A. Eaton, Painter, members of the Council.

ENGINEERING SOCIETIES.

Institution of Civil Engineers.

The Council of the Institution of Civil Engineers have made the following awards in respect of papers published in sect. II. of the *Proceedings* for the session 1910-11:—Telford Premiums to Messrs. S. M. Dixon, M.A., B.A.I. (Birmingham); H. J. F. Gourley, B.Eng. (London); J. Holden (London); A. Rogers (Horsell); A. E. Griffiths (Hong-Kong); F. C. Lea, D.Sc. (Birmingham); and a Crampton Prize to Professor W. E. Dalt, M.A., B.Sc. (London). They have also awarded the Indian Premium for 1911 to C. E. Capito (Ahwas, Persia), and the Webb Prize to F. W. Bach (London).

Institution of Municipal Engineers: Annual Meeting, Windsor.

The third annual meeting of the Institution of Municipal Engineers took place recently in the Guildhall, Windsor.

Mr. B. Wyand, Secretary, read the minutes of the last meeting and the annual report.

The President-Elect, Mr. E. A. Stickland, A.M.Inst.C.E.,

Borough Surveyor of Windsor, proposed the adoption of the report and balance-sheet. Considering this was only their third annual meeting, their position was a remarkable one, not the least satisfactory feature being their excess of income over expenditure—after

they had to write off a certain amount recoverable.
Mr. Horace Boot seconded the proposition.
The President, Mr. A. E. Prescott, put the motion for the adoption of the report, and it was carried unanimously.

Stickland

I assumed the chair from which Mr. Prescott had delivered his Presidential Address. In the course of his remarks he said that Windsor, as the town is concerned, has little or no story. "Windlesore," as the ancient town called by the Saxons, was granted to the monks of Westminster by Edward the Confessor. William the Conqueror decided to build a Royal residence there, thus originating the structure which is now so well known all over the world. The history of our native land is closely intertwined with that of Windsor.

Windsor, like every other town, has felt the effect of the motor-car and the consequent injury caused by the dust nuisance, etc. The roads through the borough are being gradually, but surely converted from ordinary re-bound granite roads to tarred flag-stone roads.

During the present year a number of roads have been tar-painted, and, favoured by a very good quality of tar and suitable weather, that work has proved very successful. The cost has been out just under 1d. per square yard.

With regard to the examinations shortly to be held under the authority of this Institution, all know that an entirely new line of ideas has been formulated by the Committee, after a great deal of careful consideration and discussion. The scheme has been prepared for the success or failure of which will be jealously watched and severely criticised by those of the old school.

The subject of road construction and maintenance, although centuries old, is still new. At the present time the question deals with difficulties of an almost unsurmountable character, and the perfect road is yet within the grasp of the surveyors and makers of to-day. The trials now taking place at Sidcup are being watched with an intense interest, for we are all waiting and eager to gain an experience which will be of benefit both to the road-user and the road-maker of the future.

The crux of the whole matter, however, is money, and while the wealthy districts are able to be willing to spend large sums of money on the reconstruction and upkeep of their roads, the poorer districts, by reason of their inability to obtain the necessary funds to meet their ways, must perforce let things remain almost as they were. The dust nuisance of this year being more extensively combated, when we constantly read of the number of deaths of roads in the different counties which have been tarred it goes to prove that both councils and their officials recognise the necessity of some means of dust prevention, not forgetting the same time that the hearts of gas shareholders must be almost bursting with satisfaction that the value of their shares are rising.

You may have—in fact, you must have—heard in almost numberless cases the statement that the construction and maintenance of roads is a highway in this, that, and the other district costs so much to maintain. I intend these figures are most misleading to the ordinary mind, and I will try to explain it to you. First of all, the nearness or remoteness of a district from the site where the metal is quarried or prepared may mean that railway carriage costs more per ton of metal than the material itself. Take my own town, for instance. For some years past I have been using Enderby granite from Narborough, Leicestershire. The granite at the quarry quoted me at 5s. 7d. per ton, the railway freight is 7s. 2d. per ton. Now can I possibly construct a road at anything like the same price as the surveyor in a district or town within twenty miles of the quarry? Again, our roads in some places are much less than in others. Then, in the case of a water-bound road, if the water has to be carted any distance from the unit of difference occurs.

I am of opinion that in cases where costs of construction are given we should know the price of the material on the actual work, and that this can be easily given, for we all know that we pay for road material, and we also pay the cost of cartage.

Another subject which at the present time is

attracting a great deal of attention and much discussion is the Town Planning Act; but here, again, as in the matter of road improvements, the question of £ s. d. is so intimately bound up with the carrying out of the Act, one almost fears it is only in wealthy districts that the elaborate and necessary expenditure required for the working thereof can be considered and adopted. It is too much to expect that an institution similar to the Road Board will ever be constituted to assist local authorities in the matter of town planning, for, after all, had it not been for the advent of the motor-car, would the at present enormous expenditure and activity on road construction and maintenance have been pushed to the extent that it has reached? If the gratification of the pleasure of the minority can work such wonder, is it not much more important that the comfort, healthy and sanitary condition of the immense numbers of working men and their families should have some consideration? Are not the surroundings of the habitations of the poorer classes in scores of smaller towns and villages equally as insanitary as those of our larger cities, such as Liverpool, Birmingham, Manchester, etc.?

As municipal surveyors I am confident we shall view with great gratification the carrying into effect of those sections of the Town Planning Act which will enable the home life of the poorer class to be improved, and I hope our efforts in that direction will be as strenuous as they are in the execution of our other duties.

Mr. A. Ernest Prescott (Eastbourne) moved a vote of thanks to the President for his address, and Mr. H. C. H. Shenton (Westminster) seconded.

The proposition was cordially agreed to, and the President replied.

Mr. Horace Boot (Tunbridge Wells) then proposed a hearty vote of thanks to the retiring President, Mr. A. Ernest Prescott.

Mr. Henry C. Adams (Westminster) seconded the vote, which was supported by the President and passed by acclamation.

Mr. Prescott briefly replied.

In the afternoon a visit was paid to Windsor Castle, and the various works of the Corporation, including the police and fire stations, depot, and refuse destructor, were inspected in turn by the members. In the evening the company reassembled at the Guildhall, where they were entertained to tea by the President.

The following are the newly-elected members of Council:—

President: E. A. Stickland, Windsor.
Vice-Presidents: H. C. Adams, London; H. L. P. Boot, Tunbridge Wells; A. Bowes, Newton-in-Makerfield; W. H. M. Jones, Chester; Frank Latham, Penzance.
Honorary Treasurer: Frank Latham, Penzance.

Ordinary members: J. Bailey, Spalding; C. O. Baines, Paignton; W. Bevan, Haverfordwest; A. R. Bleazard, Clitheroe; J. Bourne, Rammarsh; W. L. Carr, Ruislip-Northwood; A. H. Carrell, Leicester; R. G. Coates, Norfolk; F. Cutler, Deptford, S.E.; A. J. Elson, Penze; C. H. Eyles, London; H. J. Farmer, Christchurch; A. W. Gray, Lambeth; R. W. Jones, Carmarthen; A. J. Meeson, Brentwood; T. Mundy, Woolwich; H. Paterson, Hebburn-on-Tyne; A. A. Pattison, Newcastle-under-Lyme; D. Roberts, Lewes; J. Robinson, Darlington; H. C. H. Shenton, London; G. Symon, Blaydon-on-Tyne; J. Taylor, Uckfield; E. W. Veale, Farnham; E. Whitwell, Abersychan.

Meeting at Brentwood.

A meeting of the members of the Institution of Municipal Engineers was held at Brentwood, on Saturday, October 28, for the purpose of inspecting the sewage disposal works there, which are now nearing completion. There was a large attendance, about sixty being present, including the President, Mr. E. A. Stickland, of Windsor.

A paper fully describing the scheme was given by Mr. J. Edward Willcox, M.Inst.C.E., of the firm of Messrs. Willcox, Raikes, & Reed, Westminster and Birmingham, the engineers, and the party afterwards inspected the sewage farm and works. The scheme comprises the construction of the main outfall sewer and a complete installation of bacteria beds on the most modern lines for dealing with the sewage of the joint drainage area having a population of 12,000, including detritus and screening chambers, sedimentation tanks, colloidal tanks, high and low level filters, humus tanks, sludge lagoons, together with irrigation area for dealing with

the supernatant water and drainage from the sludge lagoons. The members of the Institution were afterwards entertained to tea at the Brentwood Town Hall.

Junior Institution of Engineers.

The Junior Institution of Engineers held a very well-attended meeting on October 30, when a paper on "Notes on Design and Construction in Gas Work" was read by Mr. George Evetts, Assoc. M.Inst.C.E. (member).

The author dealt with considerations which guide the engineer or estimator in choosing the site and laying out the same for all buildings and plant. He dealt in detail with the design of the retort house, coal stores, purifier-house, both as to types of buildings and materials of construction, as well as the main portions of the plant, such as retort settings, purifiers, gas-holders, etc., indicating the practical considerations which the engineer has to keep in mind in designing such works. Details of costs of buildings and portions of plant was a feature of the paper. The meeting, terminated with the usual announcements, among which may be noticed that of the Presidential Address of Commendatore G. Marconi, LL.D., D.Sc., on "Engineering Considerations in Wireless Telegraphy," which is to be delivered on November 28, tickets for the meeting being obtainable from the Secretary, 39, Victoria-street, Westminster, London.

GENERAL NEWS.

Professional Announcements.

The partnership heretofore subsisting between Mr. C. R. Field and Mr. William Glasier, under the style of Field, Sons, & Glasier, surveyors and estate agents, of Borough High street, S.E., and Waterloo-place, S.W., has been dissolved as from September 29 last. Mr. Field will continue the business under the old style of Field & Sons, and Mr. Glasier will practise as a land agent and surveyor at No. 17, Pall Mall East, S.W., under the name and style of Mr. William Glasier.

Mr. Alfred E. Nightingale is carrying on his profession of architect and surveyor at Albert-embankment and Gray's Inn-chambers, having given up his office at 38, High-street, Putney. The Studios, Drawing, and Tracing Offices have removed to Albert-embankment.

Japanese Art.

Professor Josiah Conder, F.R.I.B.A., Emeritus Professor of the Imperial University, Tokio, has written an illustrated and descriptive catalogue of a collection of paintings, studies, and sketches by Kawanahé Kyōsai, one of the most important modern artists of Japan. He died in 1889, and Professor Conder, who worked for some years in the studio of the artist, has compiled a valuable monograph. The illustrations are remarkable, the frontispiece being a beautiful reproduction in colours printed from no fewer than eighty blocks. With its elaborate notes on Japanese technique the book will be specially interesting to students of Oriental art.

Fitzwilliam Museum, Cambridge.

The most recent additions to the permanent collections embrace Rossetti's "Girl at a Lattice"; drawings and designs by Burne-Jones, Lord Leighton, and Sir E. J. Poynter, P.R.A.; a portrait by Sandys; a water-colour by J. F. Lewis, R.A.; landscape by Daubigny; and "The Bench," by Hogarth. Gifts of twelve of their etchings have been made by Mr. Martin Hardie, A.R.E., and the Hon. Walter H. James, A.R.E., and the King has lent some highly interesting drawings by Italian masters, one of them being Leonardo da Vinci's first sketch for his "Last Supper."

Ifley Church, Oxon.

The Rev. O. S. E. Clarendon, Vicar of Ifley, makes an appeal for contributions to a sum of 400l., being the estimated cost of carrying out the urgently-needed repair of the Norman tower, now greatly injured by decay, of the well-known church of St. Mary. The tower rises from between the nave and the chancel, the latter being mainly of the early English style, with a groined roof of stone, the ribs springing from clustered and simple columns; the western doorway has chevron mouldings and other embellishments.

Portinscale Bridge.

Sir Robert Hunter writes to the *Times* that, in order to remove any hesitation on the part of the Cumberland County Council to spend money in grouting Portinscale Bridge, Canon Rawnsley and Mrs. Slack, of Derwent Hill (the property nearest to the bridge), have made an offer to the Council to guarantee the cost of grouting the bridge, if the result should (contrary to every expectation) be found unsatisfactory. This generous offer, he says, should make it easy for the Council to accede to the widely-expressed wish that the bridge should be spared.

Rivington Hall, Lancs.

Sir William Lever has presented Rivington Hall, standing in what is now Lever Park, to Bolton, his native city, in order that it may serve as a house of refreshment and as a permanent art exhibition. Sir William Lever has placed in the old XVIIIth-century building a collection of contemporary pictures and furniture. Rivington was the seat of the Pilkington family in the XIVth-XVth centuries. Eleven years ago Sir William Lever presented to Bolton the Hall & the Wood, the home, in 1774-9, of Samuel Crompton, inventor of the spinning-mule, whereof the older and half-timbered portion is reputedly of the late XVth century period.

Hotel Cecil, Strand.

A conversion is to be effected of the large courtyard into a winter garden of considerable architectural pretensions, to cover an area of about 95 ft. by 45 ft., and to serve as an afternoon and evening lounge, with an orchestra, etc. A smaller courtyard will be made at the entrance from the Strand, and many other structural improvements of the hotel will be made.

Memorial Windows, St. Bede's Church, Liverpool.

Four stained-glass windows have been erected in this church as a memorial to the late Vicar of the parish. The architect for the work was Mr. James Francis Doyle, and the windows were designed by Mr. A. L. Moore. The first window depicts the Venerable Bede dictating part of the Gospel to a scribe. The second shows St. Aidan, Bishop of Lindisfarne, preaching to Oswald, King of Northumbria, and some of his subjects. The third shows Caxton at his press, and the fourth shows John Wycliffe sending out his preachers. The windows are in the south aisle.

King Edward VII. Memorial, York Minster.

Mr. G. W. Milburn has sculptured a statue of the late King, which the Dean will give to the Minster. The statue, in Caen stone, is life-sized, and presents the King in his ecclesiastical Coronation robes—stole, dalmatic, and cope—holding a sceptre with orb and cross in one hand and Edward the Confessor's sceptre with orb and dove in the other. It will be placed in a niche on the north side of the high altar.

Memorial to the late Miss Lloyd George.

The memorial which has been erected in Criccieth graveyard to the late Miss Mair Lloyd George includes a late sculptured in marble by Sir W. Goscombe John, R.A.

Egypt Exploration Fund.

The *Times* is officially informed that the chief work of the Egypt Exploration Fund during the coming season will be the continued excavation of the Osireion at Abydos, a great subterranean building connected with the Temple of Seti. Its excavation was begun in 1902-3 by the Egyptian Research Account, the work being conducted by Miss Margaret Murray and Mrs. Petrie, under the general supervision of Professor Petrie. For various reasons the work was not continued by the Research Account.

Cities and Town Planning Exhibitions.

A meeting of the Executive Committee of the Cities and Town Planning Exhibitions was held at the rooms of the Sociological Society, 21, Buckingham-street, London, W.C., on Wednesday, when a report by the Director on "Exhibitions 1910 and 1911" was received, mentioning the following: The R.I.B.A. Exhibition; the one held in Crosby Hall, which was opened by the Right Hon. John Burns, M.P.; Edinburgh (1,700 visitors); Dublin (Women's Health Association Exhibition); Belfast (in connexion with the Congress and Exhibition of the Royal Sanitary Institute); Dublin (in connexion with the Congress of the Royal Sanitary Institute of Public Health). It is proposed to hold the following Exhibitions in 1912:—Liverpool, Birmingham, and Glasgow. At the meeting the question of proposed co-operation with the town planners of the U.S.A., Germany, and France was considered.

Association of Teachers in Technical Institutions.

The annual meeting of the Association of Teachers in Technical Institutions will be

held at the Borough Polytechnic, Borough-road, S.E., on November 4. The annual report of the Council deals with the large increase in the membership of the Association in the past year, and with active work during that period. Branches have been formed in Ireland and Wales, so that activities of the Association now spread over the whole kingdom. After the consideration of the report a discussion will be initiated on the Board of Education Examinations in Science, by Mr. C. F. Smith, Manchester School of Technology, and Mr. J. Wilson, Battersea Polytechnic. Particulars can be obtained from the Hon. Secretary, Mr. P. Abbott, the Polytechnic, Regent-street, W.

Institute of Architects of N.S.W.

The fourth Architectural Exhibition under the auspices of the Institute of Architects of N.S.W. will be held at the Royal Art Society's Rooms, 76, Pitt street, Sydney, from December 2 to 9.

Ghent Exhibition, 1913.

The Belgian Foreign Office have formally invited our Government to take part in the International Exhibition at Ghent, and M. Cooremans, President of the Belgian House of Commons, and M. de Naeyer, President of the Canal Commission, with other representatives, have come to England to negotiate with the Board of Trade. Large sectional space in the Exhibition have already been allotted to Germany and France.

BRITISH HOSPITAL, MONTEVIDEO.

This building is now being erected in Montevideo, Uruguay, South America, the architect being Mr. John Adams, an English architect resident in that city.

The construction will have reinforced concrete foundations, silica calcareous (sand and lime) brick walls, plastered on outside with cement rendering, and on the inside Keene's cement finish. Fireproof floors will be built throughout the building and covered with monolithic flooring. The roofs will be of hardwood framing covered with French tiles.

A very reduced space compelled the architect to somewhat crowd the ground-floor plan, but the very strong light in Montevideo allows closer planning than in this country.

In designing the building provision had to be



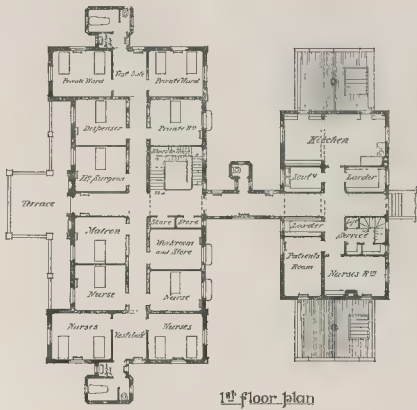
British Hospital, Montevideo.

Mr. John Adams, Architect.

ade against the results of a very exposed
sition and a semi-tropical climate.
This building is estimated to cost 16,000l.
The British Hospital in Montevideo is sup-
ported by voluntary contributions. It is
specially used and appreciated by the British
mercantile Marine, British Railway, and other
bible companies' employees, as well as by all
British residents in Uruguay. It admits all
nationalities, some paying patients and many
e. The Committee have for their Chairman
R. J. Kennedy, C.B., his Britannic
Majesty's Minister resident in Montevideo.

THE LONDON COUNTY
COUNCIL.

The usual weekly meeting of the London
County Council was held in the County Hall,
King's Gardens, S.W., on Tuesday, Mr. E.
Hite (Chairman) presiding.
ST. PAUL'S BRIDGE. The report of the
Highways and Improvements Committee on
this matter was again postponed after a long
discussion. It was recommended in the report
that powers should be sought from Parlia-
ment for the construction of tramways from
Southwark-street over the proposed new
bridge to a point near the St. Paul's end of
Peapside, and also of an underground
bypass.
An amendment was moved by Mr. J. D.
Lhury, for the Improvements Committee, to
omit a scheme for the provision of a new
street in continuation of the proposed southern
approach to the bridge. This was defeated
by fifty-three votes to fifty-two.
MR. L. W. S. ROSTRON then moved that
the question be referred back until the Com-
mittee could report on the merits and cost
of the scheme as a means of obtaining a
rough route between the north and south
railway systems. This motion was accepted
by sixty-five votes to fifty-one.
LOANS.—It was reported by the Finance
Committee and agreed that the following loans
could be made:—9,500l. to the Fulham
Borough Council for electricity undertaking;
500l. to the Poplar Borough Council for
street improvement.
SCHOOL, BATTERSEA.—A workshop for
instruction in handicraft is to be erected on
the roof playground of the premises in Latch-
ford-road used by the Battersea Polytechnic.
NEW SCHOOLS.—The following new schools
are to be erected:—New school for about
200 children on a site in Belgrove-road,
Eckenham; new school in the neighbourhood
of Gibbon's-road, Willesden; new school for
about 1,000 children on a site between Roth-
schild and Weston roads, Acton.
NORRERY ESTATE. It is reported that

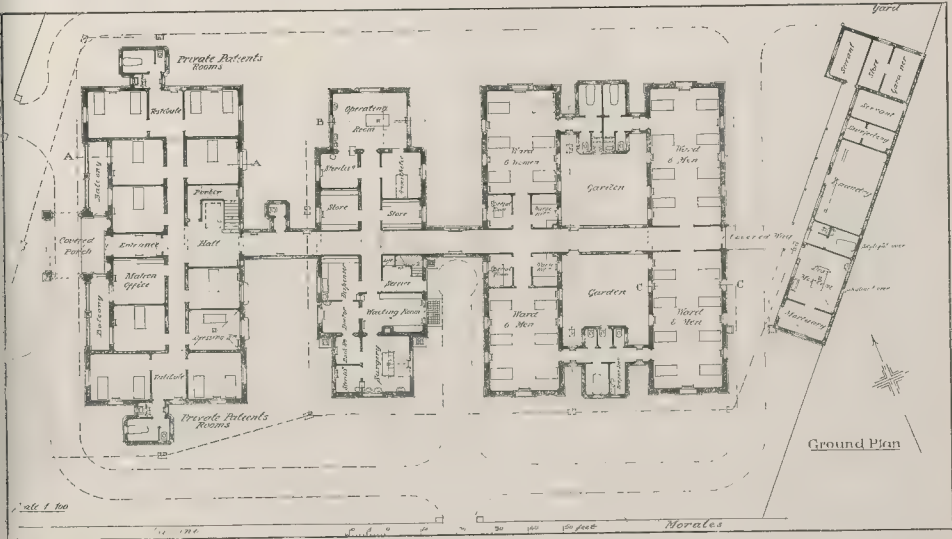


1st floor plan
British Hospital, Montevideo.

fifteen cottages are to be erected on sect. C
of the estate, each cottage to contain four
rooms and a scullery. The Architect's
estimate for the work is 3,531l.
STREATHAM COMMON.—In a report of the
Parks and Open Spaces Committee it was
recommended that the land and buildings
known as "The Rookery" should be pur-
chased for an addition to Streatham Common,
and that an amount of 3,075l. be sanctioned
for that purpose.
CAMBERWELL.—It is proposed to give per-
mission to the Camberwell Borough Council
to erect at Grove Lane-garden three green-
houses and a heating chamber.
THEATRES, ETC.—The following drawings
have been approved by the Theatres and
Music Halls Committee:—
East London Palace, Fieldgate-street,
Stepney—provision of permanent cinemato-
graph enclosure.
Nos. 382, 384, and 386, Edgware-road (cine-
matograph hall)—provision of a motor gener-
ator in the basement.
Hoxton Public Baths—provision of per-
manent cinematograph enclosure.
Nos. 137-141, King-street, Hammersmith
(cinematograph hall)—enlargement of entrance
and covering of exit passageway.
Middlesex Music Hall method of ventila-
tion of the premises.
Shaftesbury-avenue (proposed new theatre)

—additional lavatory accommodation at pit
level.
Victoria Palace, Victoria-street—extension
of the stage and provision of a flymen's room
and an electricians' room.
NEW HOTEL.—It is proposed to erect a new
hotel on a site bounded by Glasshouse-street,
Sherwood-street, Brewer-street, and Air-
street, W., to include a grillroom in the base-
ment and a winter garden on the ground
floor.
PRINCESS HALL, E.—Various alterations
are to be carried out at this hall, at 120,
Commercial-road, E., including considerable
enlargements and new lighting and heating
arrangements.
HANWELL ASYLUM.—In consequence of the
limited extent of the airing court at this
Asylum, the No. 4 male court is to be en-
larged at an estimated cost of 200l.

WAREHOUSE BUILDING MATERIAL AND ACCESSORIES,
ARGENTINA.
The *Boletín Oficial* of September 14 publishes
a notice stating that the "Dirección" has
accepted the estimate submitted by Messrs.
Ways & Freytag for the rebuilding of the
Customs warehouses on wharves Nos. 1 and 2,
in Buenos Aires. These warehouses were
recently destroyed by fire. The cost of the
work is estimated at 955,525 pesos currency
(about 34,000l.).



British Hospital, Montevideo. Mr. John Adams, Architect.

COMPETITION NEWS.

The Australian Federal Capital.

Some correspondence relating to the competition for the Australian Federal Capital appears on this page. A letter from the Secretary of the R.I.B.A. dealing with the same matter will be found on p. 509.

Training College, Glasgow.

The following notice appears in the *Glasgow Herald* of October 27:

"The Glasgow Provincial Committee propose to erect at Jordanhill, Glasgow, a Training College to accommodate 1,200 students, and, to aid them in selecting a limited number of architects to compete for the intended work, they invite architects willing to take part in the competition to send in their names by November 6 to the undersigned, with twenty copies of a statement containing such information as they may think likely to advance their claims."

The site for the proposed buildings was fixed some time ago, as mentioned in our issue of March 17 last (p. 338), and is a good one for the purpose. We understand, however, that there is a strong feeling locally that a public scheme of this importance—the cost will run well up to 100,000—should be made the subject of an "open" competition. If otherwise, the selection should in any case be made by skilled professional advisers.

School at Roman Hill, Lowestoft.

The award of the assessor (Mr. A. Morris Butler, F.R.I.B.A.) has been received by the Lowestoft Education Committee and confirmed as follows:—

First—Messrs. Bryan & Hodges, A.A.R.I.B.A., 60, Solent-road, West Hampstead, London, N.W.

Second—Mr. W. G. Wilson, F.R.I.B.A., and Messrs. Wills & Anderson, A.A.R.I.B.A., 5, Bloomsbury-mansions, Hart-street, W.C.

Third—Mr. Abel Round, M.S.A., 1, Newhall-street, Birmingham.

The premiums offered were 20, 10, and 5 guineas, and fifty-eight designs were received. The accommodation required was for 500 boys.

The whole of the competition designs are on view this week in the Council Chamber, Town Hall, Lowestoft.

Barnsley Public Baths.

The result of the competition for the proposed extension to the Public Baths at Barnsley is as follows:—

1. Mr. E. Burgess, London.

2. Messrs. Bowdler & Wallis, London.

3. Mr. E. W. Dyson, Barnsley.

The premiums offered were 50*l.*, 30*l.*, and 20*l.*

Municipal Buildings, Sofia.

H.M. Minister at Sofia reports that the "Commission Permanente de l'arrondissement de Sofia" invite the submission of designs for a new municipal building which it is proposed to erect at that place. Four premiums, to the value of 7,000 francs (280*l.*), 3,000 francs (120*l.*), 2,000 francs (80*l.*), and 1,000 francs (40*l.*) respectively, will be awarded in connexion with the competition. Architects desirous of competing must submit their designs to the "Commission Permanente de l'arrondissement de Sofia," Sofia, by whom they will be received up to 6 p.m. on December 15. Copies of the programme, etc., may be obtained on application to the "Commission," as above. A copy of the programme, together with a drawing, may be seen by British architects at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

BOOKS RECEIVED.

THE MECHANICAL WORLD POCKET DIARY. (London: Emmott & Co. 6d. net.)

BUTTERWORTH'S WORKMEN'S COMPENSATION CASES. Edited by His Honour Judge Ruegg, K.C., and Douglas Knockner. (London: Butterworth & Co.)

THE FIRE BRIGADE HANDBOOK. By James Compton Merryweather, M.Inst.M.E. (London: Merritt & Hatcher, Ltd.)

THE COMPETITION FOR THE AUSTRALIAN FEDERAL CAPITAL.

IN our issue for October 20, p. 446, we mentioned that the Minister for Home Affairs of the Federal Government had refused the suggestion made by the architects' associations of Great Britain and America that they should be represented on the Board to determine the competition for designs for the Federal Capital, and below we print some correspondence on the subject which we have just received from Australia.

The following letter was addressed to members of the Institute of Architects of New South Wales by the Hon. Secretary of the Institute:—

"DEAR SIR,—With reference to the competition for designs for the Federal City, as the Federal Government have refused to amend the conditions of this competition in the matter of the appointment of assessors, and the final decision is in the hands of the Minister alone, in spite of the recommendations made by the institutes throughout the Commonwealth as well as the Royal Institute in London, my Council has decided to ask the members of this Institute not to take part in the competition unless the conditions are made more satisfactory.

I am,

Yours faithfully,

ARTHUR WM. ANDERSON (Hon. Secretary)."

The following letters appeared in the *Sydney Daily Telegraph*:—

"SIR,—Referring to the remarks of the Minister for Home Affairs in connexion with the British and Foreign architects taking exception to the conditions of competition for the designs for the Federal City, the preliminary steps in this matter were taken a considerable time ago. When the Institute of Architects of New South Wales communicated with the other institutes of architects in the Commonwealth and, with their cordial consent, offered to the Minister their assistance in drafting the conditions of this competition, the Minister promised to lay the conditions before the institutes before they were published for any suggestions they might make, but he broke his promise absolutely. When the conditions were published this Institute immediately noticed that they were not in accordance with those laid down in ordinary competitions, and communicated in May last with the Royal Institute of British Architects drawing their attention to the unsatisfactory nature of the clauses relative to the adjudication and the final decision being in the hands of the Minister, and asking that if the opinion of the Royal Institute of British Architects was in accordance with the views of the Australian institutes they would assist us by communicating with the foreign institutes.

The British and foreign institutes have done as requested, so that their action, instead of being an expression of a want of confidence in the honesty and impartiality of Australian professional men, is carrying out the request and confirming the judgment of the Australian institutes, and is an expression of want of confidence in the final decision being left in the hands of the Minister.

We have done all we could to assist the Government in obtaining a satisfactory result, but our assistance was rejected, and the present position was inevitable when the Minister refused to be guided by the professional bodies in the Commonwealth. We are emphatically of the opinion that the laying-out of the Federal City is of such permanent and national importance that the conditions of competition should be drawn up in such a manner that they will attract the attention of the world's most gifted town planners.

JOHN F. HENNESSY,

President, Institute of Architects, N.S.W.

ARTHUR WM. ANDERSON,
Hon. Sec. Institute of Architects, N.S.W.
September 11."

"SIR,—The news contained in your columns of the 9th inst. with regard to the Federal Capital designs and Mr. O'Malley's decision that the conditions of the competition cannot be altered is of grave importance to Australia. By refusing to consider the suggestion of the

Royal Institute of British Architects that three assessors should be appointed, one from each of the American, British, and Australian institutes, instead of the unknown engineer, architect, and surveyor as now decided, Mr. O'Malley is depriving us of the services of the best architectural talent of Great Britain, Europe, America, and Australia. The Royal Institute of British Architects is a powerful body with far-reaching influence, and Mr. O'Malley's antagonism can only result in placing the united architects of the world in direct opposition to the successful issue of the Federal Capital competition. The assessors in all important competitions in Great Britain are appointed by the British Institute, and every condition must be approved before the members of this body are allowed to compete. Its members now include practically all the practising architects in Great Britain, and it is impossible to hold an important competition there without its approval. In the present instance the British Institute does not insist upon appointing even one of the assessors before allowing its members to compete, but merely desires to approve of a British assessor nominated by the Federal Government. This is a concession that would never have been granted had the conditions been issued in Europe.

If the members of the R.I.B.A. in Great Britain are warned not to compete, this warning will be issued in every country in Europe and in America. The architectural institutes in Australia, affiliated with the parent body, will also be advised, and in the circumstances can only refuse to recommend their members to compete. Thus there will be a world-wide boycott of the competition. Mr. O'Malley relies upon unknown "Continental hundreds" to supply designs in face of all opposition. When the premium was restricted to 1,700*l.* for the premiated design, practically all hoped departed of inducing Continental architects to enter into a competition in an unknown far-away land of which they know nothing and care nothing. These providential hundreds are non-existent, since every "young, progressive, and up-to-date" architect is certain to be a member of an architectural institute, and that institute's warning will be quite sufficient to prevent his unlikely desire to compete. Mr. O'Malley's statement that "there are hundreds of young, progressive, and up-to-date professional men who will compete; they have a reputation to make; Australia is a continent, sunny and cheerful, and its city will probably be better planned by men with Continental ideas than those cultivated in a more circumscribed atmosphere," is utter nonsense, and shows astounding ignorance of the position of professional architects all over the world. The British Institute has offered suggestions founded upon a wide experience of the conduct of competitions, and Mr. O'Malley replies with a childish insult. Mr. O'Malley considers that the position taken up by the British Institute shows want of confidence in the probity and impartiality of Australian professional men. It shows nothing of the kind, because architects in Australia are quite in agreement with the British Institute. The advice of the architectural institutes in Australia was ignored by Mr. O'Malley, and it is he who has shown want of confidence in Australian professional men.

If Mr. O'Malley would take his "Continental intellectual" outlook on this competition he would discover that architects in all other countries outside of Australia are the men who plan towns. It is the architect who is trained to design the form of cities as well as of buildings therein, and of necessity he has a knowledge of engineering and surveying sufficient to express his ideas. The help of the engineer and surveyor is invaluable in carrying out the architect's design, but no architect can agree to placing the majority vote in the hands of men untrained to understand the artistic expression of form in the design of a city.

The advice of our architectural bodies has been refused and that of departmental heads accepted. It is but reasonable to conclude that the failure of this competition will result in the appointment of the departments concerned to produce a design. If such a result should come about it will be a discredit to the fair name of Australia, and the Federal City can only be imagined as a town that our descendants will have much trouble, much expense, and much joy in pulling down and reforming.

W. HARDY WILSON.

Sydney, September 11."

CORRESPONDENCE.

Australian Federal City Competition.

MR.—I have just received from the Hon. Secretary of the Institute of Architects of New South Wales a copy of a notice issued by the Council of that body asking their members not to take part in the competition unless the conditions are made more satisfactory. The Competitions Committee of the Royal Institute are considering this notice in a view to recommending the Council to a similar action as soon as possible. I send you with this a copy of the notice I received.
IAN MACALISTER.

* The notice referred to and two letters on the subject appear on p. 508.—ED.]

Cooking Apparatus.

MR.—We have just been very much interested to have our attention called to the summary of Mr. Harold Gray's article, which appeared in your issue of September 22, on the subject of electric cooking apparatus. As figures are given in the summary referred to, direct comparison is practically impossible, the following remarks may prove of interest to your readers.

The second statement appears to make Mr. Gray's statements concerning the electric oven require a little consideration. The first of these is, "That a uniform heat is essential," a statement which, we believe, is incorrect, as the top heat, which Mr. Gray pretends to object to so strongly, is that essential feature of baking which so many do not possess, and are for that reason commercial failures. Further than this, it is a statement that this top heat can be controlled will, for after it has done its work it is necessary to so modify the heat that a steady cooking temperature is maintained, which demands rapid and complete control of the oven temperature, which is, so far, only obtainable in gas-ovens.

The second statement which calls for attention is that in gas-ovens "the food is bathed in the products of combustion of impure gas." This assertion is certainly liable to misinterpretation. Anyone unfamiliar with the chemical considerations of combustion and combustion would be extremely liable to infer from the above remark that the combination of poisonous substances is bound to give rise to a poisonous result, which is, of course, not the case, for if we took hydrogen and oxygen their combustible proportions, we should have a mixture suitable for respiration; but the result of the combination of this mixture with water, a substance the hygienic properties of which need not be enlarged upon.

Again, we might argue that the combination of such substances as sodium and chlorine, though in itself most objectionable and unpalatable, not to say poisonous would produce a substance unfit to eat and of a poisonous nature, but years have proved that common salt, the product of this combination, is a nutritious and extremely necessary. In a similar way experience has proved that the ducts of gas in a properly designed cooker do not affect the food cooked therein, and that these cookers are very good to use.

It would be very interesting to know what improvement Mr. Gray's electric oven represents over and above the best of those we have used, which give the following results:—

With an oven 14 by 12½ by 10 in. the heat of the oven at the start of the test was 61 deg. Fahr. Ten minutes later it had been raised to 260 deg. Fahr., the current used during the ten minutes being 249 of a unit, representing an hourly rate of 1,494 units of electricity consumed. At the end of the ten minutes the temperature of the oven was 550 deg. Fahr., the current used during the further ten minutes being 167 units, representing an hourly rate of 1,002, the total assumption for the twenty minutes being 416 units of electricity. The current was then so adjusted that a temperature of 410 deg. Fahr. was maintained in the oven, and it was found that the current necessary to maintain this temperature was 532 units per hour, these being supervised and checked by a fully trained electrical engineer.

There is one point particularly worthy of note—it was impossible on the particular oven tested to obtain a temperature of less than 410 deg. Fahr., a temperature somewhat in excess of that required for most cooking operations, and a point which clearly demonstrates the want of control over the heat in electrical ovens.

Having dealt with the oven, we should like to give a few comparative figures on the subject of water-heating, this being of such a nature that direct comparison can easily be made.

An ordinary gas-boiling ring used to heat all quantities of water will give, at a low

estimate, 55 per cent. efficient net; or, expressed in another way, it will return in the form of heated water 295 B.T.U. per cubic foot of gas consumed, which, with gas at 2s. 6d. per 1,000 cubic feet, gives a return in heated water of 9,825 British thermal units per penny.

Next, the gas-heated circulating boiler in practice will give an efficiency of 400 B.T.U. per cubic foot of gas used, which, with gas at 2s. 6d. per 1,000 cubic feet, represents 13,320 B.T.U. per penny.

Again, a good geyser as constructed to-day will return in the form of heated water 500 British thermal units of heat for every cubic foot of gas used, which represents (with gas at 2s. 6d. per 1,000 cubic feet) 16,650 B.T.U. per penny. As one Board of Trade unit of electricity represents, if converted wholly into heat, 3,437 British thermal units, it is easy to calculate the number of units of electricity required to give the same amount of heat per penny, as we have shown, can be returned in the form of heated water by the various methods set out above.

The resulting figures are tabulated below:—
NOTE.—In each case the price of gas is assumed to be 2s. 6d. per 1,000 cubic feet.

One pennyworth of gas used in a boiling stove returns 9,825 B.T.U., representing 2,859 units of electricity.

One pennyworth of gas used in a circulator returns 13,320 B.T.U., representing 3,875 units.

One pennyworth of gas used in a geyser returns 16,650 B.T.U., representing 4,831 units.

Assuming a low rate for electrical energy of one penny per unit, the figures given above represent a direct comparison of the cost of gas and electricity, the cost of gas throughout being one penny, the relative cost of electricity being 2.85d. for boiling stoves; 3.87d. for circulators; and 4.84d. for geysers. But it must be remembered that these figures represent cost calculated for gas at 2s. 6d. actually being used to-day, whereas the calculations for electricity allow for 100 per cent. efficiency, which is not the case, to our knowledge.

We trust that these remarks will be of interest to your readers, and that Mr. Gray will see his way clear to give the information sought concerning his improved oven as compared with the test we have set out above.

THE DAVIS GAS STOVE COMPANY, LTD.,
H. A. DAVIS, Managing Director.

New Indian Patent Act.

MR. MAY I through the columns of your paper bring to the notice of such of your readers as are interested in Indian patents the fact that a new Act comes into force in India on January 1, 1912, which will alter the conditions under which valid patents are obtainable? The particular point to which I should like to draw attention is that, under the new Act, valid letters patent cannot be obtained for an invention which has been previously used or published (as by the printed British specification) in India. Under the present Act, however, it is allowable to file an application at any time within one year of the filing of the British application or of the actual sealing of the British letters patent. Therefore, any intending applicants for Indian patents, of which the corresponding British specifications are now published, or will be published by December 31 next, should take care to have their applications filed before that date.

CHAS. B. KETLEY.

Rating of Land Values.

MR. Among many remarkable aspects of recent public affairs, perhaps none is more surprising than the complacency with which middle-class people allow themselves to be despoiled of their hard-earned savings with scarcely a word of protest, and the apathy of powerful trades that are being injuriously affected by recent legislative changes, yet appear voiceless in their own defence, either at meetings or through the journals who undertake to watch over their interests. At the present time, although land valuation has practically added nothing to the revenue, the menacing attitude of the Government towards those who have put their small economies into house property has reduced the capital value of such securities by at least 20 per cent. all round; while, except in very favoured situations, building as a speculation is almost at a standstill. The public are afraid to put their money into what is fast becoming an unprofitable and negotiable security; yet the auctioneering world, which represents the investor, and the trade societies and journals associated with building seem to have no more to say on the subject than if we were suffering from an unusually severe winter, or too great bounty of the sun during the holiday season, or some other matter utterly beyond our control. Friendly societies have not behaved thus in the matter of Mr. George's Insurance

Bill, nor the doctors, and they get some relief. Why, then, should the builder and his customer, the investor, without whom the trade can make no progress, continually "take it lying down"? The question is very serious, and becomes hourly more so, for if this new scheme of making site-values amenable to the rates is put in force the present fall in capital value will be followed by another, which, certainly in the case of mortgaged property, will obliterate all but the secured interests; while in many cases the large advances made by banks, building societies, and insurance companies will be unrecoverable.

It seems, therefore, that some kind of obligation rests on those having the ear of the public, and power and authority in association with these vast interests, to exert themselves with the object of preventing so great an injustice being completed as that involved in the proposed change.

Frequently the victim of these recent enactments is not in a position to endure the strain. House property has long been the favourite investment of elderly men, who, by industry and self-denial, have earned the right to an honourable old age and to make provision for their families. It seems, therefore, a cruel thing suddenly to introduce a change which must seriously diminish and in many cases will destroy their means of subsistence; and this at a time when a fresh start in life is almost impossible.

I think, sir, I have said enough to enlist your sympathy in this matter, and will only add that, although fraught with ruin to hundreds of middle-class families, the change will probably prove as delusive financially as the land legislation of two years ago—the real intention being socialistic and destructive.

HENRY CLORISTON.

INTERCOMMUNICATION COLUMN.

Decaying Floor.

SIR.—About three months ago a small bungalow of five rooms was completed by a local builder. It is now discovered that the flooring, which was to have been laid down directly upon 3 in. of cement concrete, rests upon ½ in. only, under which is nothing but rubbish. The latter appears to be damp, and the result is all the boards show signs of damp rot—which apparently is due also to the fact that they have been partially tarred only—and the joists are in the same condition, i.e., badly tarred; linoleum had been laid down or this would not have been found out.

As it is understood, it is impossible to prevent the boards eventually decaying. Would you kindly advise as to some efficient substitute to replace boards for flooring? I should like to know if some substance could be laid which would not necessitate the expense of removal of the joists and everything else under the boards. I am advised "wood block" flooring might serve, and should like to have some idea of the expense of laying, etc., or whether there is any other patent flooring cheaper and as efficient. S. G. H.

THE BRITISH SCHOOLS AT ATHENS AND ROME.

The annual meeting of the British School at Athens will take place on Tuesday, November 7, at Burlington House, at 5 p.m. The Dean of Westminster will take the chair, and the Director will give an account of the excavations undertaken by the School this year at Phylakopi in Melos. This year the School celebrates its twenty-fifth anniversary, and the occasion will be marked by a festival dinner to be held on the same evening, when Mr. George Macmillan, Chairman of the Managing Committee, will preside. The company will include Lord Morley, and among the speakers will be the Greek Minister (Mr. Gennadius), the Director of the School (Mr. R. M. Dawkins), Professor Ernest Gardner, Dr. Walter Leaf, and Sir Lawrence Guillemard. A short history of the School from its foundation will be produced in honour of the occasion. The annual meeting of the sister School at Rome takes place also at Burlington House on November 21, Professor J. S. Reid, Chairman of the Managing Committee, presiding. In connexion with this meeting there will be an Exhibition of student's work. Mr. J. S. Beaumont, a graduate scholar in architecture of the University of Manchester, has recently been appointed by the Gilchrist Trustees to the Gilchrist Studentship held at the School.

EDITORIAL SUMMARY.

The leading article is entitled "Education and Examination," and deals with the revised syllabus, printed on p. 499, of the Royal Institute of British Architects' Intermediate and Final Examinations.

A second article is given on page 498, commenting on the London County Council Tramways and St. Paul's.

"Notes" (p. 498) include remarks on: "The Oxford 'High' and Overhead Tramway Systems"; "The Crystal Palace"; "White-chapel Art Gallery"; "The Railway Unrest"; "Regent's Park and the Zoological Gardens"; "The Protection of Ancient Monuments"; "Balliol Chapel."

At the meeting of the Architectural Association on Monday Mr. H. H. Hill, B.A., read a paper on "The Architectural Association Excursion to the Loire, 1911," and showed a number of interesting lantern slides of buildings in the district. The paper is printed on p. 500 *et seq.*

Some information in reference to the Australian Federal Capital Competition appears on pp. 508 and 509.

In our Correspondence Column (p. 509) will be found letters on: "Cooking Apparatus"; "New Indian Patent Act"; "Rating of Land Values."

The Monthly Review of Construction, illustrated (p. 511), contains: "Determining Stresses: Collar-Beam Roof Truss"; "American Society for Testing Materials"; "Keeton System of Reinforced Concrete"; and "Notes."

The Building Trade Section (p. 515) contains: "Workmen's Compensation"; "Cement"; "Building Plans and Building Prospects"; "Applications under the London Building Act, 1894-1909"; "Projected New Buildings in the Provinces," etc.

The first of a series of six public lectures on "The Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer" was delivered at University College, London, on the 17th ult. by Mr. A. H. Barker, a résumé of whose remarks is given on p. 518.

A report of the decision in the case before the Tribunal of Appeal under the London Building Act, *i.e.*, "London and Westminster Bank, Ltd., v. the London County Council," is given on p. 520; also the case of "The London County Council v. Corbett."

Law Report (p. 521) refers to "Alleged Dangerous Premises at Islington."

MEETINGS.

SATURDAY, NOVEMBER 4.

Aberdeen Architectural Association.—Mr. A. E. Payne, A.R.C.A., and Mr. R. W. Gibbon on "A Holiday in Central France." Illustrated. 7.30 p.m.

Junior Institution of Engineers.—Reception by the President, Sir J. J. Thomson, F.R.S., and Lady Thomson at the Caxton Hall, Westminster. 7 p.m.

MONDAY, NOVEMBER 6.

Royal Institute of British Architects.—Opening address by the President, Mr. Leonard Stokes. 8.30 p.m.

Society of Engineers (Incorporated).—Mr. R. W. A. Brewer on "Two-Cycle Engines." 7.30 p.m.

Liverpool Architectural Society (Incorporated).—The first ordinary meeting of the session. Opening address by the President, Mr. Arnold Thornely, F.R.I.B.A. 6 p.m.

The Incorporated Clerks of Works Association (Carpenters' Hall, London-Well).—Paper by Mr. E. N. Craig on "City Working and the Stock Brick Industry." 8 p.m.

University of London (Victoria and Albert Museum).—Mr. Basil Fletcher on "St. Peter's and other Renaissance Churches in Rome." 5 p.m.

TUESDAY, NOVEMBER 7.

Institution of Civil Engineers. (1) Address by Dr. W. C. Uxwin, F.R.S., the President, and presentation of medals and prizes awarded by the Council. (2) Reception by the President in the Library after the meeting. 8 p.m.

University of London (University College).—Mr. A. H. Barker, B.A., B.Sc., on "The Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer."—IV. 5 p.m.

Bath, see Polytechnic (Lectures on Illuminating Engineering).—Mr. J. G. Clark on "Gas Lighting." 7.30 p.m.

University of London (British Museum).—Mr. Basil Fletcher on "Greek Architecture: The Mycenaean Period." Lantern illustrations. 4.30 p.m.

British School at Athens.—The Festival Dinner, Whitehall Rooms, Hotel Metropole, W.C., to commemorate the twenty-fifth anniversary of the School's foundation. 7.45 p.m.

WEDNESDAY, NOVEMBER 8.

Manchester Society of Architects.—(1) Extraordinary general meeting. (2) An informal discussion to be opened by Mr. J. J. Burnett A.R.S.A., Hon. LL.D. 6.30 p.m.

THURSDAY, NOVEMBER 9.

Sheffield Society of Architects and Surveyors.—Mr. W. S. Parnon on "The Architecture of Oxford." 7.45 p.m.

FRIDAY, NOVEMBER 10.

Glasgow Technical College Architectural Craftsmen's Society. Debate on "The Uses of (1) Stone, (2) Brick, (3) Concrete as Applied to a Country House," by Mr. R. Gilchrist, Mr. W. Orr, and Mr. R. Park. 7.45 p.m.

ILLUSTRATIONS.

Ilkeston Secondary School.

THIS school, about to be erected for the Derbyshire Education Committee, provides accommodation for 204 students. The building has been planned on axial lines, and all classrooms, laboratories, etc., are on the ground floor. The whole of the school is covered with a concrete flat, the Assembly Hall being covered with a dome of the same material. Cross-window ventilation is obtained in all cases by means of dormer windows placed under and over open-corridor roof. The Assembly Hall has been placed in the centre of the quadrangle, being octagonal on plan and having entrances on six sides.

The walls are to be constructed of brick, and the exterior covered with rough-cast. The approximate cost will be under 500, per head, which includes boundary walls, oak fencing, asphalt, and laying out of grounds.

Mr. George H. Widdows, A.R.I.B.A., is the architect.

Hospital and Sanatorium.

This design for the Isolation Hospital at Aberdare was placed first by Sir William Emerson in the competition held some time ago. Mr. Edward C. H. Maidman was successful also in the competition for a Consumptive Sanatorium, Cork, adjudicated by Mr. Albert E. Murray, A.R.H.A. An illustration of this building is given also.

Pugin Studentship Drawings:

Stamford St. Mary's.

THE tower of this church has never been restored, and is consequently one of the most interesting and valuable examples of the period. Iron bands have been placed along the walls and bolted through, but the original stone cutting has been untouched.

The belfry story windows had originally a central shaft with infilling bars to the main arch; traces of the mitres and base moulds are quite visible, and an old XVIIIth-century print hanging in the vestry shows these shafts as existing at that date.

Most of the window openings have been filled in with rough masonry, with the intention of strengthening the tower walls. This infilling has come away and left a fissure all round, showing how this mass only burdens the tower and in no wise helps it.

St. Cuthbert's, Wells.

The Cathedral Church of Wells, by the introduction of long panelled lights to the belfry stage, in the XIVth-century additions to the west towers, established a design which not only in the Diocese of Wells, but throughout the whole West Country, became general in tower building. The Church of St. Cuthbert's is perhaps the finest example of this. The long vertical lines of the mullions and the buttresses, terminating in the pinnacles in which the same vertical idea is expressed, carry away the effect of bulkiness which the plan (being the full breadth of the nave) makes almost inevitable. The church itself has a fine roof, but mostly the remainder is late work of a poor and debased character.

Howden St. Peter's.

St. Peter's tower is the dominating feature for miles around. It has a splendidly dignified effect, sitting at the junction of the four roofs.

The bell story is a late XVth-century addition and is not nearly as good as the rest. A deeply cut casement mould runs up the jamb and the arch of the long lights, and this gives definition to the mouldings and strengthens the vertical feeling of the design.

FIFTY YEARS AGO.

From the *Builder* of November 2, 1861.

The Affinity between Vigour in Architecture and Music.

THERE is something grand and manly in the wild savage vigour of a Romanesque grotesque. There is none of that fiddle-faddle finish we find in modern marble sculpture. When they wanted finish they could give it—it was done chisel in hand; no rasping, filing, Danneker-Ariadne-elegance. When they drew a line it was thick—could be seen at some distance; there was none of your petty German, fine-lined, modern Munich, Dusseldorf, Madonna sentiment. They drew a Madonna that could be seen all over the place—it made the people worship a good way off. They cursed hard and worshipped hard; and what they did they did with vigour. But look at a modern German, who gets religious first and the patriotic, over beer, increasing according to *schoppen* consumed.

It has been reserved for Richard Wagner to found a true school of opera, of dramatic music. His first attempts in this style were "Tannhäuser" and "Lohengrin," the former produced at Dresden, in 1845. Here he began to develop his ideas; but it is in his recent works, not yet performed operas—"Tristan and Isolde," "Rheingold" (Nibelungen)—that the full force of this system may be heard. He speaks of the effect the orchestra should have upon the soul thus: "The great melody, such as I conceive it, which embraces the whole dramatic world, should produce in the soul a feeling similar to that produced by a fine forest at the onset of the traveller just escaped from the noise of the town. He distinguishes (in the silent solitude) tones of infinite variety—he hears what he has never before heard; and he finds in them a sublime melody he forgets not—he cannot repeat it, but he returns to it over and over again." And such is the effect of a grand composition of Wagner's. Trust a lover of Wagner's music may spring up amongst our Goths. A. WARRINGTON.

STATUE OF LORD KITCHENER.

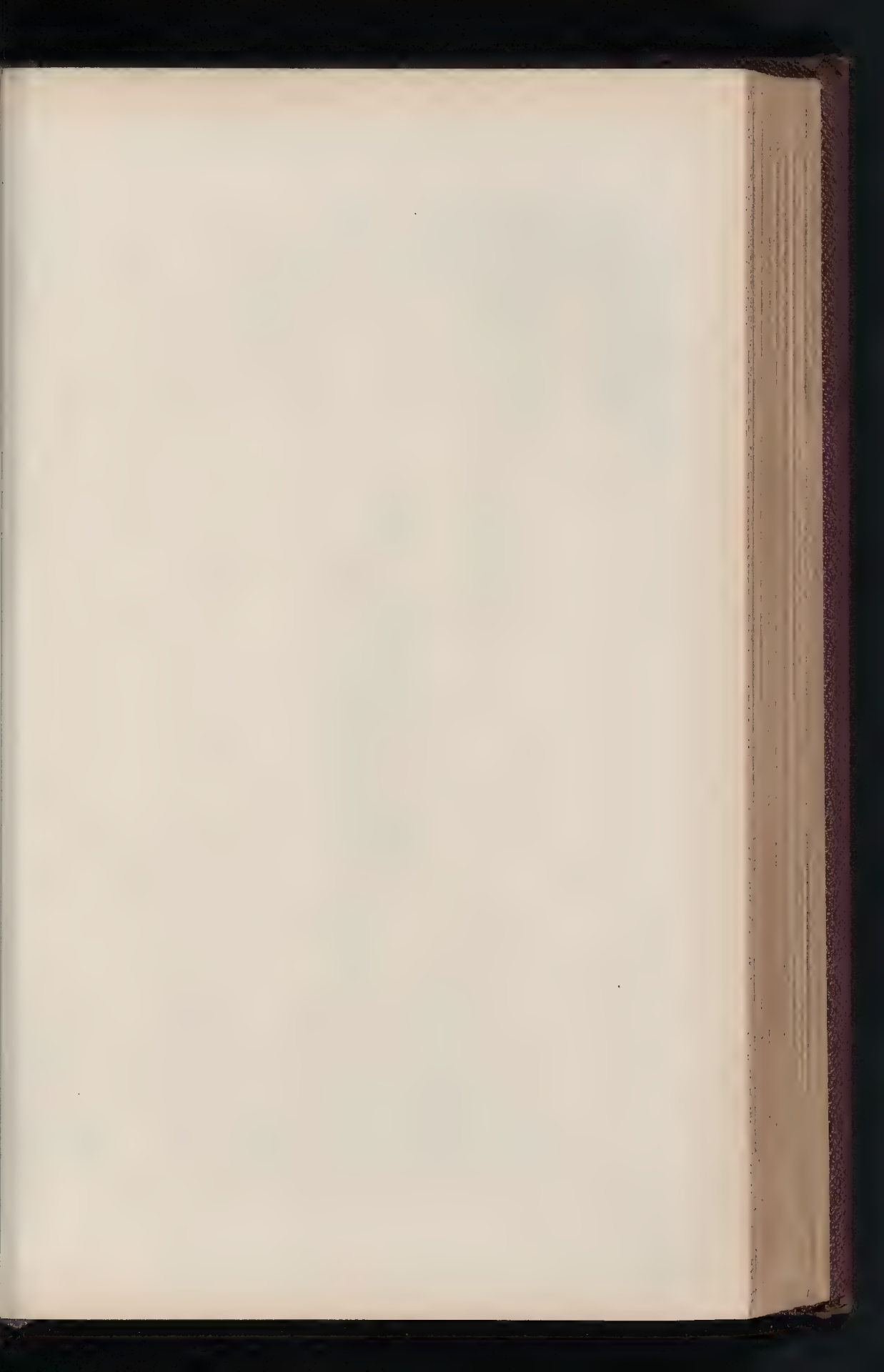
Messrs. Elkington & Co. will cast in bronze the equestrian statue for Calcutta. The stone pedestal, 12 ft. high, will bear four bronze panels depicting episodes of Lord Kitchener's military career; the portrait study of the figure is by Mr. March.

ROTHAMSTED, LEITS.

The late Sir Charles B. Lawes-Widdowson, Bart., affected, under his own directions and superintendence, an extensive enlargement and improvement of his ancestral home at Rothamsted, near Harpenden. There are yet remains of the timber and plaster house to which were made additions of brick, in the XVIIth century. In 1655 the Cressy family sold the property to the Witts, of Flemish descent, from whom it passed to the present family of Lawes. The hall are the oak beams and posts of the original house; subsequent changes are plainly manifest in the exterior brickwork of the walls, gables, and chimneys, varied in the thickness and colour; the south and main front, of the XVIIth century, presents an elevation of four shaped gables having small moulded brick pediments and moulded brick cornices; from above the central porch rises a brick bell-tower capped with a lead-covered clock turret. The dining-room ceiling is a fine specimen of Elizabethan plasterwork; nearly all the apartments are panelled in oak, some in a pleasing version of the linen-fold design; there are handsome oak staircases and richly-carved chimney-pieces, with many examples of contemporary furniture of common designs.



ST. MARY'S CHURCH, STAMFORD, Lincs.—DRAWN BY MR. J. B. F. COWPER

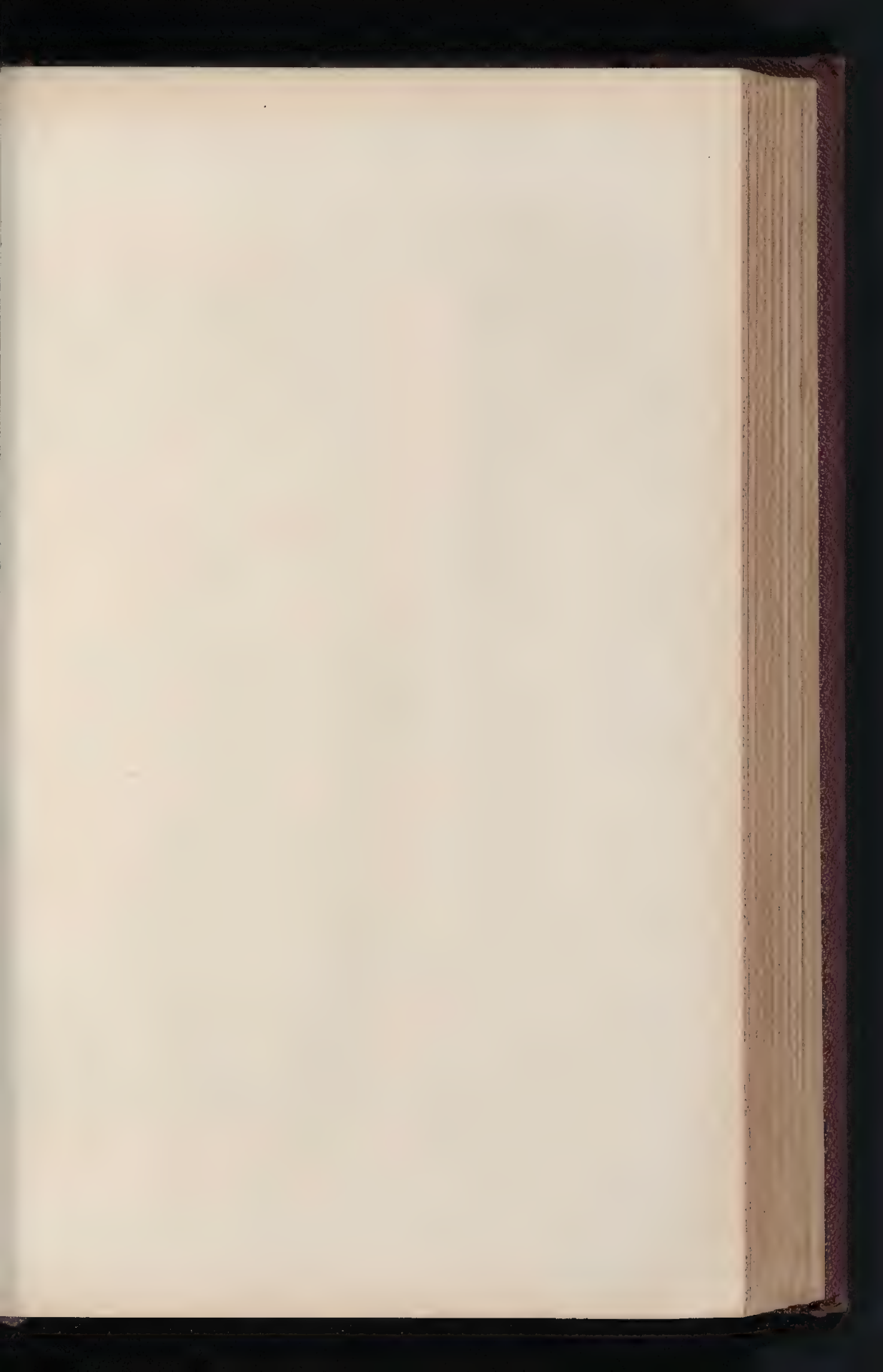


ISOLATION HOSPITAL,
AT
ABERDEEN - GLAM.
Selected Design.
Edward C. H. Maichman
Edinburgh.
Architect.

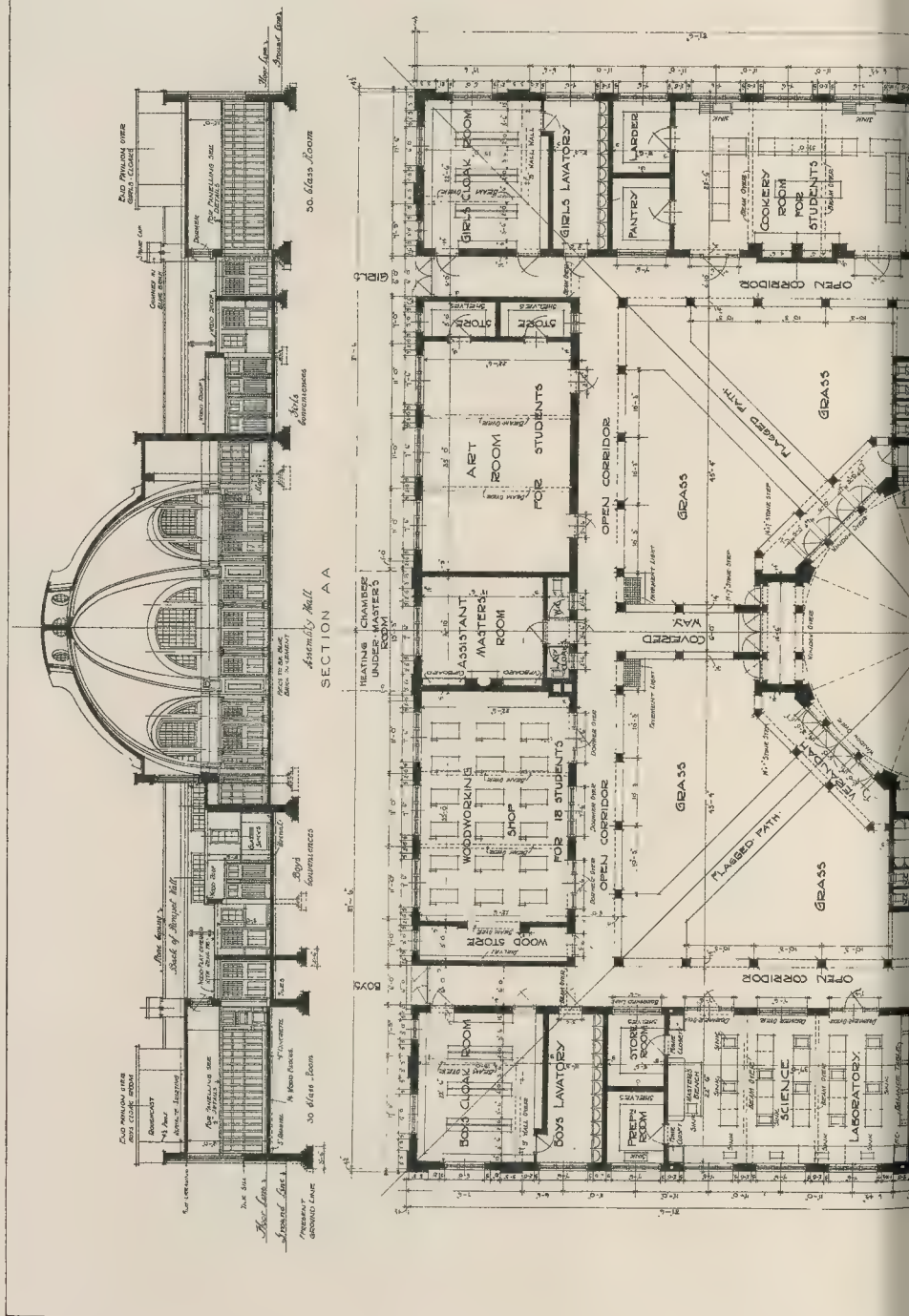
Plan of the Hospital showing the main building, the clock tower, and the surrounding grounds.

ISOLATION HOSPITAL
AT
ABERDARE - GLAM.

Selected Design.
Edward C. H. Maidman
Edinburgh. *Architect.*

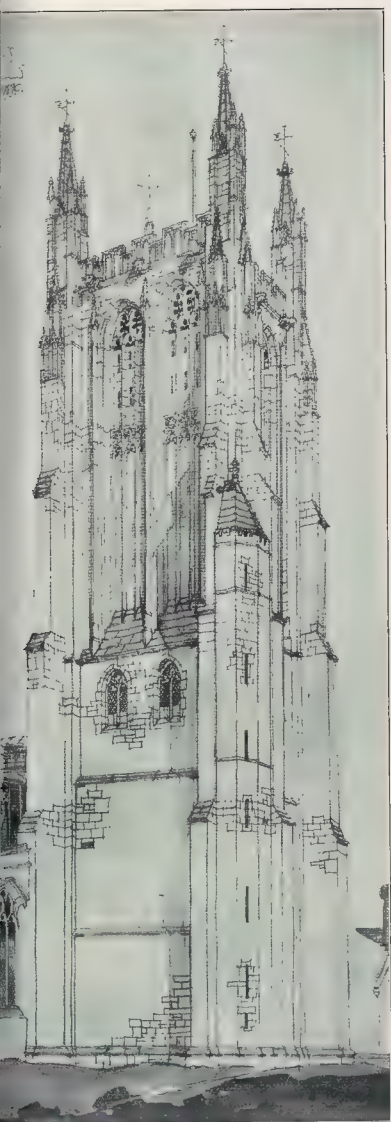


THE BUILDER, NOVEMBER 3, 1911.

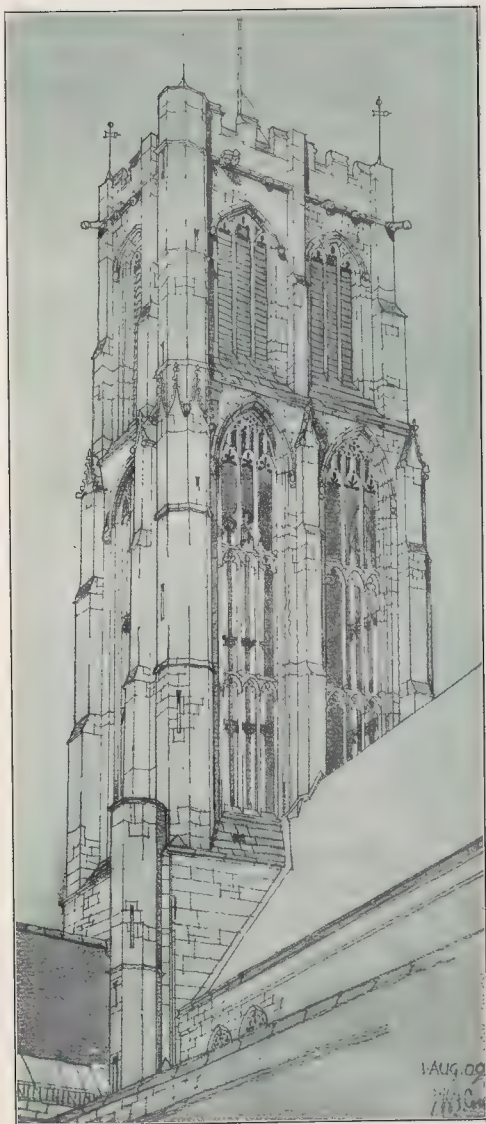




THE
CONSUMPTIVE
SANATORIUM.
CO. CORK.
First Premised Design
Edward C. F. Maitland,
Barrington & Co. Architects



ST. CUTHBERT'S CHURCH, WELLS.



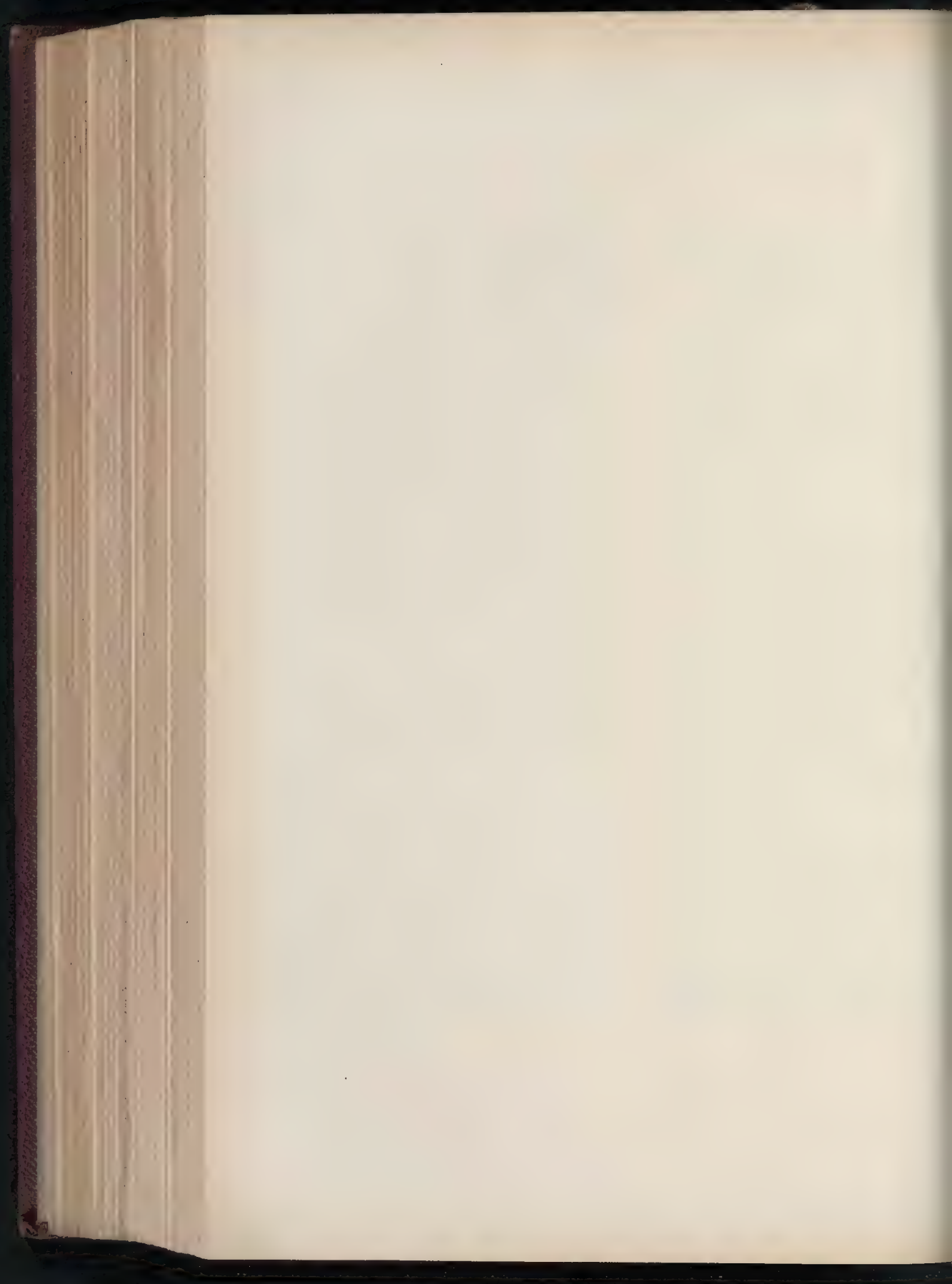
CHURCH OF ST. PETER, HOWDEN, YORKSHIRE.

Sprague & Co., Ltd., Printers, 4 & 5 East Haning St., E.C.

R.I.B.A. PRIZES, 1911.

THE PUGIN STUDENTSHIP AND £40.

AWARDED TO
MR. J. B. F. COWPER.



MONTHLY REVIEW of CONSTRUCTION.

DETERMINING STRESSES: COLLAR-BEAM ROOF TRUSS.

WHEN obtaining the stresses in the various members of roof trusses by means of graphic statics it will be found that the simpler wooden more often give rise to difficulties than the complex trusses of larger span in iron or

considering a collar-beam truss of 20 ft. span as shown in Fig. 1, the reactions can be

found to enable the "closing" of the stress diagram properly.

This arises from the fact that one factor has been disregarded—a most important one—the bending at the joints of the collar-beam. It is a well-known fact that the tendency of such a truss is to "spread" at its feet, thrusting the walls out sideways. Such being the case, the reactions will not be parallel as we have so far established, but must be inclined to one another, their direction meeting somewhere in the vicinity of the truss.

It is therefore best to determine first the amounts of the stresses in each of the members, and these can be calculated by taking a section through the member and taking moments about the nearest joint.

Taking moments about the joint o in Fig. 4 the

$$\text{Stress in CH} \dots \frac{14\frac{1}{2} \times 8\frac{1}{2}}{7} = 13.43 \text{ cwt.}$$

$$\text{Stress in GH (Fig. 5)} \frac{21\frac{1}{2} \times 6\frac{1}{2}}{5} = 28.68 \text{ cwt.}$$

$$\text{Stress in DH (Fig. 6)} = \frac{11\frac{1}{2} \times 2.9}{7} = 6.1 \text{ cwt.}$$

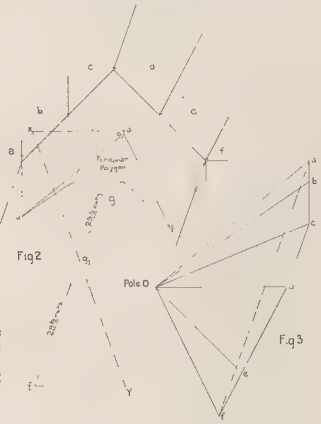
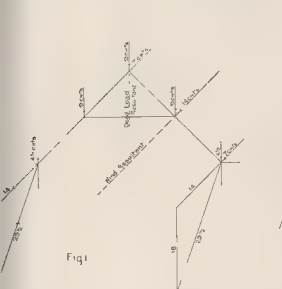
$$\text{Stress in BG (Fig. 7)} \frac{9 \times 10 + 14\frac{1}{2} \times 6\frac{1}{2}}{7} = 26.28 \text{ cwt.}$$

$$\text{Stress in EG (Fig. 8)} = \frac{14\frac{1}{2} \times 2.9 + 21\frac{1}{2} \times 2\frac{1}{2}}{7} = 12.7 \text{ cwt.}$$

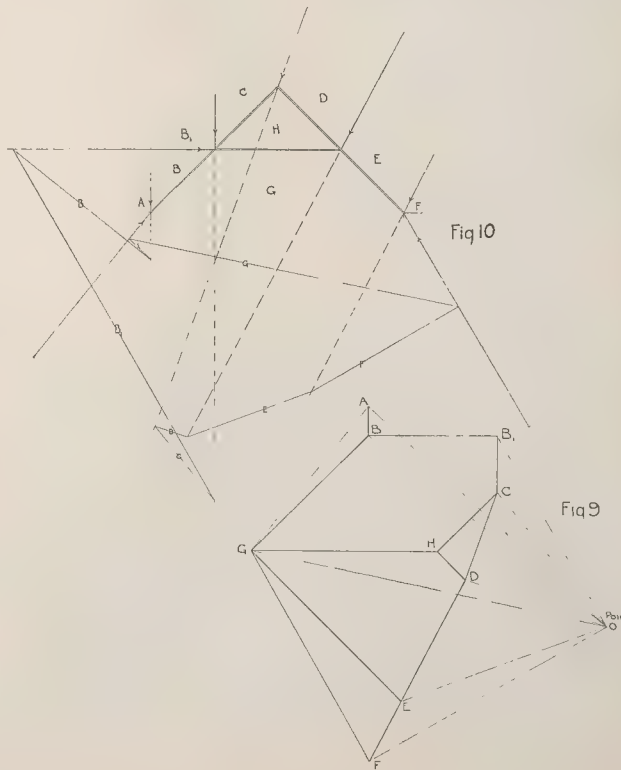
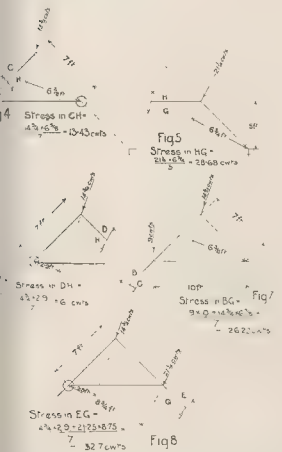
Thus we know the stress in each member, and they are all compressive stresses. The stress diagram can be constructed from these stresses, and the reactions form the closing sides, as also an extra external force will be found which is necessary to maintain equilibrium.

Take any suitable point G (Fig. 9) and draw GH parallel to HG in the truss, and equal in length (to the force scale) to 28.68 cwt. From G draw the other sides GB and GE parallel to their respective truss members and equal in length to the stress amount. At H draw HC and HD as shown. Join DE, which should be parallel and equal in amount to the external force in the roof at DE, and CD should also correspond to the force on the truss.

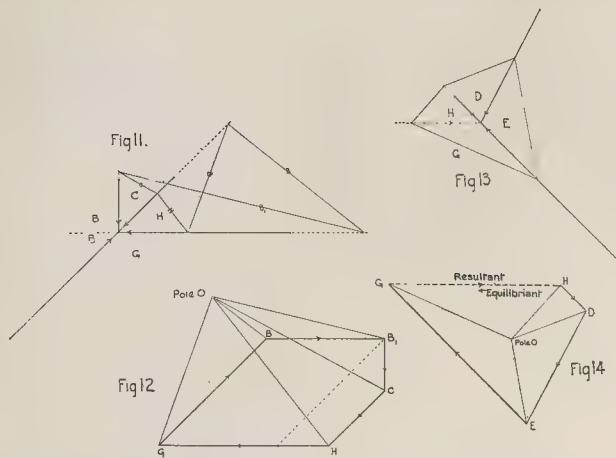
From C draw CB₁ vertically equal to CB₁, the external force on the roof of 9 cwt. Draw BA from B in a similar manner equal to 4½ cwt., the amount of the external force AB on the roof. Draw from D force EF (Fig. 9) parallel and equal to EF on the roof. To close the line of loads (Fig. 9) we require a force BB₁ to maintain equilibrium at the joint BCHG. We therefore show this virtual force on the



drawn out without the aid of a polar ray diagram by considering each set of loads separately, i.e., dead load and wind. It will be found that each set is equally distributed on the abutments; therefore, combining the total of each set of loads at each abutment as shown, we get resultants of 29½ cwt. at points inclined as shown. Reversing the directions we have the reactions at the abutments. The same result is obtained by the funicular polygon and polar ray diagram, as shown in Figs. 2 and 3. The point of the funicular polygon is a point through the resultant of all the forces at must



Draw a line through o (a₁f₁) parallel to and equal to it in length, and through the points also draw lines parallel to a₁f₁ horizontal lines a₁x and f₁y to intersect the lines continued as shown. Join which intersects a₁f₁ at g₁. Then a₁g₁ is amount of the reaction at a₁ and f₁g₁ amount at the abutment f₁. These will amount to 29½ cwt. each as before. This is the elementary one of resolving one into two parallel forces. From the information now at hand the stress diagram in most cases could be easily completed, not so in this case, as the point G cannot be



roof as a load, although really it is a bending resistance in the roof truss.

To find the reactions, join GA and GF (Fig. 9) and draw lines parallel and equal in amount to these intersecting their respective abutments. To prove that all the forces balance one another, complete the polar ray diagram (Fig. 9) and draw the funicular polygon (Fig. 10), when, the last sides of polygon closing, the truss is proved to be in equilibrium and the correct stresses found.

As there is no actual force BB_1 acting externally on the roof truss, this must be exerted by the rafters themselves, and is really their resistance to bending. The method just described may be greatly simplified, as there is a direct method to determine the amount and direction of the virtual force available.

The upper portion of the truss being a triangle, it is self-contained so far as stresses are concerned, and requires no extra virtual force to maintain equilibrium therein. Of course, there are the reactions, but these are provided for by the lower portion of the rafters. We therefore have four joints left—the two at the ends of the collar where the collar-beam joins the principal rafters and the two abutments.

Take first the joint CHG and indicate the various forces there to scale, as Fig. 11. Draw a force polygon (Fig. 12), when it will be seen that a force BB_1 is required to complete the polygon. Take any pole o and draw a polar ray diagram, transferring the rays back to their respective fields (Fig. 11). Where BB_1 meets is a point through which this virtual force acts, and its position is as shown dotted at BB_1 at the joint. The amount of the force is the length of BB_1 (Fig. 12) measured to scale.

The right-hand joint can be worked out in the same way as shown in Figs. 13 and 14, and gives the same amount, i.e., 21½ cwt.

The load line can then be drawn and the stress diagram worked out without trouble. Using graphical methods alone, the same results can be obtained by first considering the loading in the upper portion of the truss, as in Fig. 15. The resultants are obtained from the stress diagram (Fig. 16) where $GB = 19\frac{1}{2}$ cwt. and $GE = 25$ cwt., acting at the inclination shown. Next take the lower portion of the truss (Fig. 17) loaded with these loads in addition to the external loads thereon, and by parallelograms of forces resolve these forces as shown.

The $19\frac{1}{2}$ cwt. at B produces a compressive stress in the rafter of 26 cwt., and a tensional stress in the collar-beam of $11\frac{1}{2}$ cwt. The force at E produces a compressive stress in the collar-beam of 32 cwt. and 33 cwt. in the principal rafter at the end.

The resultant stress in the collar-beam is the algebraic sum of the two stresses, or $32 - 11\frac{1}{2} = 20\frac{1}{2}$ cwt. compression. There being no other defined force to resist this, the inertia of the rafters are called upon to perform the duty, which they do by their resistance to bending. Therefore, show this as an external virtual force acting against the collar-beam, as BB_1 (Fig. 10). Combining the loads at the abutments with the lowest loads on the truss gives the amounts and directions of the reactions. The load diagram can now be drawn as before.

The virtual force of 20½ cwt. at BB_1 can be resolved into two parallel forces of 10½ cwt. each acting in the same direction (horizontally) at the abutments. These multiplied into the leverage to the collar-beam give the amounts of the bending moments at the centre of each principal, or $10\frac{1}{2} \times 5 \text{ ft.} = 51\frac{1}{2} \text{ ft. cwt}$

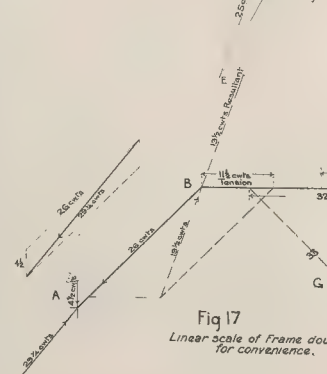
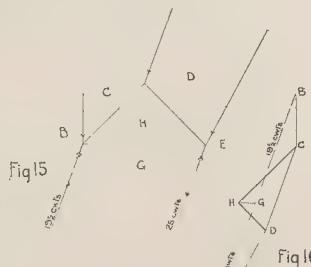
THE AMERICAN SOCIETY FOR TESTING MATERIALS.

THE extremely useful character of this Society is abundantly demonstrated by the subjoined brief summary of the proceedings at the fourteenth annual meeting held in July at Atlantic City. For the convenience of readers who are interested in special subjects, we deal with some of the various reports and papers submitted under classified headings.

Preservative Coatings.

The Committee on Preservative Coatings presented a voluminous report, including the sectional reports of several sub-committees.

The sub-committee undertaking the inspection



of test panels and bridge painting at Havre Grace reported on the condition of numerous qualities of paint which are still undergoing long-time weathering tests. This eminently practical method of procedure has already the effect of proving the unreliable nature of some paints, and when the final report is presented it will be a valuable guide to architects and engineers, as well as to paint manufacturers. A similar investigation is in progress at Atlantic City, under the charge of another sub-committee, the plates having been painted by the Association of American Paint Manufacturers.

The sub-committee on linseed oil reported the results of analyses in seven different laboratories, the average results obtained to the present furnishing reliable constants for raw linseed oil. Their report includes a paper on experiments conducted by the Bureau of Standards to determine the coefficient of expansion of linseed oil from 4 deg. to 40 deg., the data obtained being of value in permitting the specific gravity of such oils to be corrected for variations of temperature.

The sub-committee on white paint tests has formulated the details of a comprehensive exposure investigation. Some 120 mixtures will be examined, the grinding and mixing of the paints having been undertaken by Professor Allen Rogers, of Brooklyn. The Pennsylvania Railroad Company have agreed to prepare the panels, which will be painted by the Baltimore and Ohio Railroad Company and it is believed that the Departments of Agriculture and of Commerce and Labour will arrange for exposure of the panels at an experimental farm near Arlington, Virginia.

The sub-committee on paint vehicles has recently started laboratory tests on the time of drying and the physical character of the films given by various drying, semi-drying, and non-drying oils to which varying amounts of driers have been added. Exposure tests will also be made by the committee.

A paper on "Further Results of Westinghouse, Church, Kerr, & Co. Tests," by Mr. C. M. Chapman, gives results of tests of over 1,000 coatings on 3,000 panels exposed to the weather. The object of the tests was to show the protection afforded against rust. The results show that for short periods a single coat of red-lead, white-lead, or on the chromatic paints is satisfactory. Carbon graphite, and iron oxide paints appear to be equally useful, and a mixture of graphite and iron oxide seems to be better than either material alone. White-lead appears superior to any other pigment except red-lead for coat work after exposure for one or two years. For two-coat work it is best for one year, other materials show up as well after two years. The durability of red-lead priming was established.

Mr. Henry A. Gardner, in a paper on "Practical Testing of Drying and Semi-drying Paint Oils," described exposure tests recently started in the grounds of the Institution of Industrial Research at Washington for the Association of American Paint Manufacturers on forty-eight pine panels, 2 ft. by 3 ft., covered with standard white pigment reduced with different oil for each panel.

Cement and Concrete.

Mr. Russell S. Greenman read a paper "Practical Tests of Sand and Gravel"

ete." The author recommended sand as delivered and testing by the United States Geological Survey. He quoted results showing any sand can be judged by its degree of voids, loam, and grading, as determined in the laboratory and regarded field tests as valuable indicating the proper proportions of sand as delivered. With members who took part in the discussion, the author emphasised the importance of determining the percentage of loam in sand and the reliability of such matter.

"Expansion and Contraction of Concrete while Hardening" was the title of a paper by Mr. Albert T. Beck, who referred to experiments by the United States Office of Roads. Specimens of concrete were dried immediately after moulding and found to commence shrinking directly, but with very wet mixtures perceptible expansion occurred for a few days. At the end of three months the contraction was about 0.05 per cent. Specimens kept wet showed expansion while in that state and began to contract as soon as dried. Mixtures seeming to expand more than made with more water. The behaviour of material appeared to resemble that of timber. Professor Alfred H. White read a paper, "The Destruction of Cement Mortars by Expansion and Contraction." This communication, although of interest and suggesting a field for fruitful work, is one giving laboratory results which practical purposes must be treated with a deal of reserve. One conclusion, however, is in confirmation of what is already known to experts that the use of much cement in mortar used for rendering is apt to cause expansion and contraction, and for the richer the mixture is in cement water is the change of volume as the temperature of temperature variations.

Standard Specification for Steel Reinforcement Bars.

The Committee on Standard Specifications stated their proposals for steel used in reinforced concrete work, most of the clauses similar to those generally adopted in practice. Two classes of metal are contemplated—mild and hard steel; the former the ultimate tensile resistance of 55,000 lb. per square inch and the yield of 33,000 lb. per square inch, and the latter with the minimum tensile strength of 60,000 lb. per square inch and the yield point of 30,000 lb. per square inch. The draft states that hard-grade steel will be used only when specified. Provision is made for smaller elongation in the case of cold and cold-twisted bars, and for cold twist tests suited to both qualities of steel.

Building Brick.

A paper by Dr. D. E. Douty and Mr. L. L. described "Some Further Experiments on the Absorption, Porosity, and Specific Gravity of Building Brick," conducted by the United States Bureau of Standards. The results find that the best test for absorption is the four-hour boiling method, the results more harmonious than those of any other,

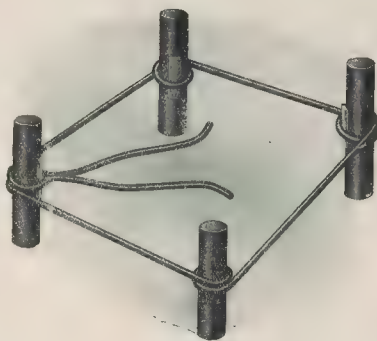


Fig. 2.

and eliminating the injustice done to soft bricks by reliance on short-immersion tests. Some of the results obtained by different methods of testing are given below:—

Method of Testing.	Percentage Absorption.	
	Whole Brick	Half Brick.
Immersion for ninety days and boiling for four hours	20.5	20.0
Boiling for four hours	20.2	19.9
Immersion for ninety days	18.8	18.7
Immersion for seven days and boiling for one hour	18.3	19.1
Partial immersion for ninety days	18.2	19.4
Vacuum	17.7	17.8

Sewer and Drain Pipes.

The Committee on Standard Specifications and Tests for Clay and Cement Pipes presented a voluminous progress report. The work of this section is divided into three classes—(1) To determine the requirements to be fulfilled by sewer and drain pipes; (2) to ascertain the inspection and tests necessary in the case of materials; and (3) to draw up specifications for laying pipes under the usual conditions. An elaborate syllabus has been prepared of points coming into the first two classes, and some of them have been relegated to sub-committees for investigation. Some time will necessarily elapse before the final recommendations of the committee can be formulated for presentation.

Professor A. Marston read a paper on "Methods of Testing Sewer Pipe and Drain Pipe," a communication eliciting a good discussion in the course of which the methods

adopted at St. Louis, Brooklyn, and elsewhere were described.

Iron and Steel.

As on previous occasions, a good deal of attention was devoted to these metals, among the chief contributions being a report on the "Corrosion of Iron and Steel"; an important paper by Dr. Allerton S. Cushman on the "Manufacture of Pure Irons in Open-hearth Furnaces"; two papers on "Hardness Tests," one by Messrs. B. Stoughton and J. S. Macgregor; and a report on the "Heat Treatment of Iron and Steel." Four standard specifications for steel were also presented in addition to that for reinforcing bars already mentioned.

THE KEEDON SYSTEM OF REINFORCED CONCRETE.

VARIOUS methods have been introduced from time to time for securing the stirrups or shear members of reinforced concrete beams to the main bars working in tension and compression. The latest device of the kind is that of Messrs. Richard Johnson, Clapham, & Morris, Ltd., of Manchester, the connexion being made by the application of a key, as shown in Fig. 1. Here the stirrup consists of a piece of round steel rod forming a loop through which the main reinforcing-bar is passed and keyed in position, the two ends of the stirrup being bent so as to assume a diagonal position for better resisting tension on diagonal planes in the concrete, and the extremities are bent over at right angles for anchorage.

The same kind of arrangement is adopted for the lateral reinforcement of columns, as represented in Fig. 2.

One manifest advantage of the system is that ordinary merchant bars can be employed as reinforcement, thus obviating the delays that may sometimes occur in cases where specially rolled bars are used, and enabling the builder to obtain material from any steel merchant in the vicinity of the works to be executed.

It is claimed by the patentees that when the web members are keyed in position on the main bars of a beam the series of projections formed at the points of attachment have the effect of constituting an efficient mechanical bond to supplement the natural adhesion between the concrete and the steel. Moreover, it is pointed out that the strength of the material used in the construction of the main bars is not impaired in any way, as the metal retains the original fibre and structure obtained during the process of rolling in the mill. The stirrups are made from high-grade drawn-steel, and, together with suitable keys, are supplied, ready-made, by the patentees, with or without the main bars.

Fig. 3 illustrates the general arrangement of connexions between beams and columns in the "Keeton" system of reinforced concrete, which, in our opinion, possesses the merits of practicability and simplicity.



Fig. 1.

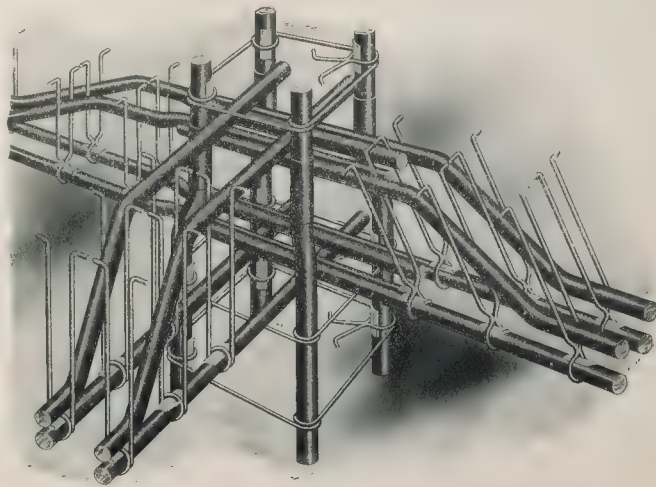


Fig. 3.

CONSTRUCTION NOTES.

Moving a
XIIIth Century
Church Tower.

In order to facilitate enlargement of the church at Bochoit, a German town near the borders of Holland and Belgium, it was decided to move the tower for the distance of 9-30 metres and to place it on new foundations. The tower dates from the XIIIth century, and it will be readily understood that the operation of shifting so ancient a structure was one involving extreme care. The weight was considerable, the walls were hollow and filled with loose material, and the stones were very friable.

Work was commenced by cutting openings through the side walls for the insertion of twenty-six rolled steel beams, in two groups of thirteen, destined to carry the weight of the tower. Then the north and south foundation walls were laid bare to permit supports to be built up under the ends of the beams, the supports being incorporated 256 screw-jacks. At the bottom of each support was a concrete foundation, above this longitudinal timbers with transverse ties, then came the jacks and more longitudinal timbers with ties carrying a row of five longitudinal steel beams providing a runway for rollers, and over the rollers were balks of timber faced on the under side with steel plate. Outside the tower a track was formed on concrete foundations constructed on the new site for the structure.

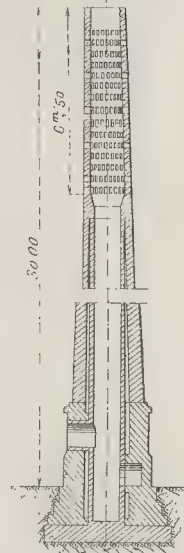
When all preliminaries had been settled, the tower was lifted bodily from its foundations by raising the jacks 25 millimetres. It was then rolled along the track to the new site and connected with the foundations by courses of brick laid in cement. The rollers employed were 60 centimetres long by 5 centimetres in diameter, and the structure supporting them was proportioned so as to keep the pressure on the concrete foundation slab within 25 kilogrammes per square centimetre, and the pressure on the soil within 1-7 kilogrammes per square centimetre. The whole of the work, including construction of the new foundations, was completed within three months at the cost of 45,000 francs.

Americans
Control
British Timber
Reserves.

How did Yankee syndicates and capitalists acquire such a grip on British Columbian standing timber that, as the Agent-General for British Columbia recently estimated, fully 50 per cent. of this valuable asset of the British Empire has passed into their hands? Simply because about five years ago the province of British Columbia badly needed money, and finding that commodity hard to raise through the taxation of a sparse and poor population, threw open its timber limits to prospectors, just as gold claims are open for staking in new countries. The effect of this was to throw practically all the timber of the province on the market at one dump. In 1906 and 1907 about 35,000 square miles of timber were staked, and this made the stakers responsible to the Government for ground rents aggregating 400,000. per annum. But those who had taken up the claims had for the most part no money. They were forced either to cut and sell their timber or to get rid of their claims. Then the shrewd American speculator saw his chance and seized it. Quietly but steadily American banks began buying British Columbian timber limits, and these deals are still in progress. In fact, some who ought to know hold that to-day 75 per cent. of British Columbian standing timber is held by rich Americans. These men will not sell at present; they are doggedly holding for the inevitable rise which must follow hard on the heels of the urgent demand for timber from the three prairie provinces where no trees grow, and settlers by the hundred thousand are each year calling for timber for their frame-houses, from the railways now being completed along the prairies and right into British Columbia, to say nothing of the outlet which the approaching completion of the Panama Canal must provide for British Columbian timber in the Eastern States of America and in Europe.

A Smoke-
Diffusing
Chimney.

In a paper contributed to the German Society of Engineers the author describes a form of chimney-shaft provided with an arrangement in the upper part intended to dilute and diffuse smoke and noxious fumes in the outer air. The diffuser consists of a continuation of the shaft proper, its walls being pierced by conical openings radial to the centre of the chimney, the wider end of each opening being at the outside. Wind enters freely through these openings, breaking up and diluting the upward stream of smoke or gas and creating strong eddies in it. Owing



Smoke-Diffusing Chimney.

to the conical form of the openings, those on the side away from the wind allow comparatively little of the smoke to escape. It is said that practically all the smoke, diluted and whirling in eddies, passes out at the top of the chimney and diffuses itself very rapidly in the surrounding atmosphere. Chimneys of this type are intended particularly for use in places where sulphurous fumes prove destructive to surrounding vegetation, but it seems probable that the idea might very well be applied to boiler chimneys generally in large centres of population.

FEAR of an approaching Preservation shortage in the world's supply of timber is causing increased attention to be paid to the methods of preserving timber from decay. This is especially noticeable in the United States, where a number of papers on the subject have recently been published. It is generally agreed that impregnation of the timber with creosote is the best method of treatment, but under the name "creosote" a number of liquids varying widely in composition are being sold, and no one is yet able to say which liquid, or mixture of liquids, is the most effective preservative. Creosote is commonly regarded as a coal-tar distillate, but in recent years large quantities of water-gas tar and its distillates have been used as creosote. Water-gas tar is derived from petroleum or petroleum distillates. In a paper recently communicated to the

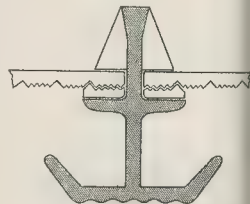
New York section of the Society of Chemical Industry Mr. Weiss has shown that creosote is a more powerful antiseptic than the so-called creosote oil obtained from coal, but the fact that oil-tar is more abundant in many parts of the United States than coal-tar has induced many to advocate the use of its distillates in admixture with the coal-tar substitutes for coal-tar creosote. It is obvious that the action of creosote is mainly a preservative action, and, therefore, that distillates are equally good for preservation.

Although coal-tar creosote has been used for timber preservation for more than a century, scientific investigations have yet shown which constituent of the creosote is the most valuable, and specification of creosote contracts still reveal a great divergence of opinion as to the constitution of creosote. According to Mr. Charles H. H. this divergence of opinion is based upon the unsupported by scientific facts, and a much trouble to those engaged in the creosoting industry. He complains that descriptions of creosote mentioned in specifications and publications are not available for use in most of the wood-preserving industry erected in America. Some estimate of magnitude of the creosoting industry in the United States may be formed from the fact that the annual consumption of creosote in that country amounts to fifty-six million gallons.

In England coal-tar creosote is more abundant but very large quantities of water-gas tar are also made here, and if oil-tar distillates are as effective as coal-tar distillates for preserving timber the fact should be made known. Evidence hitherto published does not conclusively prove that oil-tar distillates are either superior or inferior to coal-tar creosote for preservation.

New System
of Glazing.

A FORM of glazing bar is on the market by the Société du Vitrage Rationnel, designed not only to hold the sheets of glass, but also to receive and away water of condensation and any which may find its way through the joints. As shown in the accompanying section, the bar is in the form of an inverted T with a transverse flange for carrying the glass. The lower flange is bent up at the sides to form a gutter beneath the joints. The panes of glass are of special construction, having grooves



New System of Glazing.

different width and depth, disposed diagonally to the edges of the pane, and designed to break up moisture condensed on its surface, beads of water being conveyed along the gutter and finally deposited in the gutter of the glass bar.

In roofs where expansion and contraction are anticipated, the panes are placed with mastic, and held in position by a zinc strip moulded to fit the upper part of the glazing bar and fixed by screws. The horizontal part of the strip acting as a spring makes a joint while permitting the iron bar to expand to expand and contract freely. In where expansion is not an important consideration, the panes of glass are bedded on mastic in the usual manner.



THE BUILDING TRADE.

WORKMEN'S COMPENSATION.

THE Home Office has issued the statistics of compensation and of proceedings under the Workmen's Compensation Act, 1906, and the Employers' Liability Act, 1880, during 1910. There have been collected from the seven groups of industries—mines, quarries, glass, factories, harbours and docks, constructional works, and shipping covering 10 employers and more than 7,000,000 employed persons coming within the provisions of the Compensation Act of 1906. In the year 1910 compensation was paid in 3,510 cases of death and in 10,000 cases of disablement. The average amount in cases of death was 153*l.*, and in cases of disablement 5*l.* 14*s.* The annual cost for compensation, taking the seven groups of industries together, averaged 7*l.* 8*d.* per person employed. It was lowest at 4*l.* 5*d.* each person in the case of persons employed in factories, and highest in cases (20*s.* 2*d.*) and in docks (20*s.* 6*d.*). The total amount of compensation paid under the Act in the seven groups of industries was £225,750, as compared with £274,238*l.* in the previous year. Including management other costs the total charge borne by seven industries probably amounts to £4,000,000. These figures include, in addition to accidents, cases of the various industrial diseases (now twenty-four in number) included under the Workmen's Compensation Act. Compensation was paid in 438 cases of death from disease, and 438 cases of disablement. The total number of original claims for compensation under the Workmen's Compensation Act were finally settled within the cognate of the Courts in England and Wales in 1910 was only 3,862; in Scotland, 466; and in Ireland, 658. The decision was in favour of the workman in 786 per cent. of the cases. The returns in the seven grouped industries made compulsory, but, no such returns were required from the building trade, we extract any exact information as to the burden the Act imposes on this trade.

In the heading of factories includes shipbuilding, workers in wood, and the manufacture of machines, appliances, and tools, and constructional work includes the construction of railways, tramways, canals, harbours, docks, bridges, tunnels, waterworks, roads, and engineering works. Thus in persons comprised in the description "Building Trades" may be employed in the above headings, but, as the construction of buildings, except when they form part of an engineering work is excluded, particulars concerning the building trade are relegated to the second part of the report, which gives information as to the claims where the Courts have had jurisdiction of the cases.

Where we find that in England and Wales cases were taken into Court as compared with 637 in 1909, but memoranda were registered in 435 cases, in which lump sums awarded, averaging 40*l.* 10*s.* 3*d.*, and 37 cases where weekly sums averaging 8*l.* 8*d.* were also awarded. It is impossible to find in the report the sums awarded as compensation in the building trade, but in the cases settled the sums totalled 12,273*l.* and the weekly sums 95*l.* 4*s.* 6*d.* The burden placed on employers is, of course, not represented by the actual sums paid as compensation, but, because the costs, etc., were not included in the figures given, nor compensation under contracting-out schemes; and, finally, because the amount paid to insure itself the liability and not the actual compensation paid is the burden placed on the employer. In this latter connexion an illustration contained in the report is of great interest, as from the returns made by insurance companies it is estimated that the total amount of compensation paid, including legal and medical expenses, bears to premiums paid in the proportion two to one; thus the actual amount paid in

compensation must be increased by one-third to show the burden imposed upon the employer.

It would be more satisfactory if better returns could be obtained as to the compensation paid in other industries than those seven grouped undertakings in which returns are now compulsory.

BUILDING PLANS AND BUILDING PROSPECTS.

THE latest returns published in the Board of Trade *Labour Gazette* as to the building plans submitted to the local authorities in the third quarter of the year so far as they afford any indication of building prospects cannot be considered very satisfactory. As compared with the same quarter a year ago, the returns available for the United Kingdom and Ireland, but exclusive of the County of London, indicate a net decrease in expenditure of 310,118*l.*, or 8*l.* 5 per cent. The greatest decrease is shown in dwelling-houses, 401,809*l.*, and shops and other business premises show a decrease of 29,369*l.*, but factories and workshops give an increase of 54,214*l.*, and churches, schools, and public buildings of 112,204*l.*; "other buildings, additions, and alterations" show an increase of 14,644*l.* The statistics as to districts are also interesting, but we only quote those that show an increase and those in which the largest decreases have occurred.

Increases are confined to "other districts in England to those specifically tabulated," 73,528*l.*, or 22*l.* 6 per cent.; Wales and Monmouthshire, 7,210*l.*, or 7*l.* 2 per cent.; Ireland, 4,123*l.*, or 2*l.* 9 per cent., and Lancashire and Cheshire, 3,442*l.*, or 0*l.* 6 per cent. The decreases are headed by the Midlands, with 175,616*l.*, or 24*l.* 7 per cent., next comes Outer London, with 147,752*l.*, or 21*l.* 9 per cent., and then the Northern Counties, with 60,938*l.*, or 36 per cent.

CEMENT.

THE Council of the Institute of Chemistry have inaugurated a series of lectures, the first of which was delivered by Mr. Bertram Blount, F.R.C., at King's College, Strand, on the 26th ult.

In the unavoidable absence of the President, Dr. Beilby, the chair was taken by Professor J. Millar Thomson, LL.D., F.R.S., who opened the proceedings with a reference to the scheme of lectures, which, he said, was an extension of the work of the Institute on lines mainly directed to benefit advanced students of chemistry. Its aim would be to indicate the scope and object of the work actually carried out in various branches of professional chemical practice, as distinct from academic training; while occasionally the lectures would deal with matters of forensic and ethical interest.

Professor Thomson then welcomed the Institute to King's College, and called upon Mr. Blount to deliver his lecture, the first of two, on "Cement," of which the following is a brief abstract.

The lecturer limited his discourse to the consideration of calcareous cements as being of predominant importance, and more particularly to the Portland cement industry, the size of which would be judged by the fact that the world's production is estimated at 25,000,000 tons per annum, valued roughly at 35,000,000*l.* The industry is essentially a chemical one, and in the interests of both manufacturer and consumer is, and should be, controlled by the chemist.

The earliest form of calcareous cement is probably calcium sulphate sufficiently dehydrated to form plaster of Paris. Its disadvantage, lies in its lack of plasticity and its liability to attack by water. On the other hand, calcareous cements, properly so-called, while being plastic, are capable of hardening, and are resistant to water. The common fallacy that the setting of lime mortar is due to the action of lime on the sand with which it is mixed was once more exploded by the lecturer. It has long been known that some siliceous materials have an advantage over others as aggregates for mortar. These are known generally as "pozzolanas," and their usefulness depends on the fact that they contain hydrated silica or attackable

silicates which interact with lime and form compounds more or less resistant to the action of water. Similarly it has been known that some limestones are better than others in providing strong and resistant lime for mortar.

There seems to be no record that limestones were deliberately and intelligently chosen for the hydraulic quality of the lime which they furnished until the time of Smeaton who, in considering with what material he should build the Eddystone Lighthouse, ascertained that Aberthaw limestone was undoubtedly hydraulic, and, desiring to know why, applied to Mr. Cookworthy, a chemist of the period, whose office as consultant was creditably fulfilled. It was found that those limestones which were most hydraulic contained the largest proportion of argillaceous material. But, not content with this, he reasoned that this quality might be improved by the addition of what was then known to be capable of conferring hydraulic properties on ordinary lime, and accordingly used trass, a pozzolanic material.

From the subject of hydraulic limes the lecturer went on to discuss the manufacture of so-called "Roman cement," a crude form of Portland cement made by burning lumps of clayey limestone. The foundations were thus being laid of one of the largest chemical industries in the world. Starting with the notion of imitating Roman cement, the progenitors of the Portland cement industry arrived at the idea that when chalk and clay were mixed and burned an hydraulic material was produced which, when ground, would set and form a strong, sound cement. The function of the chemist who concerns himself with this industry was dealt with at some length. When a new works is to be started there has to be considered the nature and available quantity of the raw materials, the accessibility of a supply of fuel, the suitability of the proposed site, the choice of process and the appropriate plant, and such matters of transport, supply of labour, and probable markets, which go far to determine the commercial success of any undertaking. The function of the chemist continues after the works are started, and on him depends the smooth control of the quality of the cement produced.

In the next lecture, to be given in the latter part of November, the chemist, properly so-called, and testing of cement will be dealt with.

GENERAL BUILDING NEWS.

CATHEDRAL TOWER, BIRMINGHAM.

THE repairs to the tower of Birmingham Cathedral have been carried out under the direction of the architects, Messrs. J. A. Chatwin & Son, and it is stated that not a single piece of new stone has been put into the casing. The tower was erected in 1710 from the design of Mr. Thomas Archer, a pupil of Vanbrugh. The cost of the present repairs is about 1,500*l.*, and the contractors were Messrs. R. Bridgman & Sons, of Lichfield.

NEW CHURCH, BOLTON.

St. Barnabas' Church is to be erected at an estimated cost of 10,000*l.*, on a site at the corner of Thomas Holden-street and Chorley Old-road. The design has been prepared by Mr. Frank R. Freeman, architect, of Bolton, and the contractors are Messrs. J. C. & F. Woods, of Bolton.

NEW CHURCH, FARNHAM.

The new parish church of St. Thomas-on-the-Bourne, Farnham, Surrey, has just been completed by Messrs. Mardon & Mills, of Farnham, from designs of Mr. H. S. Sidebotham, of Guildford, in conjunction with Sir Charles A. Nicholson. The materials are the local Bargate stone for the exterior, with a brick for the interior, which has been plastered and discoloured white, the dressed work for windows and capitals of pillars being of Douling stone. The church consists of the permanent and completed chancel and sanctuary, organ loft, with clergy and choir vestries and lavatories, heating chamber, and the first three bays of the nave, the latter being at present only carried to the stop of the arcade with a temporary roof covering. The space below the organ loft is the invalids' aisle, and is so arranged that they can be wheeled into church on the level. The north

aisle is used as the temporary side chapel, but eventually a portion of the old church will be removed from its present site and rebuilt to the north of the new chancel, for use as the permanent side chapel for day services. This will be the next portion of the building to be undertaken. After that, the nave and aisles will be completed by three more bays, and the clestory continued from the chancel westwards, and finally the west tower will complete the fabric.

PARISH CHURCH ENLARGEMENT, WALTON, LIVERPOOL.

The original Parish Church of St. Mary and vicarage were founded in 1326. The rebuilding of the present church was completed in 1842, and a complete restoration was carried out in 1887. During Archdeacon Spooner's rectorship great progress has been made in church extension in the large parish of Walton, and two new buildings have been erected and opened for service during the past year. Archdeacon Spooner and the wardens applied for permission to remove the pulpit from the north to the south side of the chancel entrance, to make alterations in choir stalls, necessitated by the removal of the organ to the north side of the chancel, and to introduce additional choir stalls; to erect a side chapel on the south side of the church; to construct arches in the south wall between the proposed side chapel and the body of the church, to furnish such chapel with a communion table, communion rails, and seats, and to make other alterations at a total estimated cost of 2,000/. The chapel, which is called the Hornby Chapel, is in memory of the Rev. Thomas Hornby. The architects are Messrs. Nagington & Shennan, of Liverpool.

NEW CHURCH, BRISTOL.

The church of St. John's, Fishponds, has been consecrated by the Bishop of Bristol, and the accommodation is for 525 people. It has been built at a cost of 3,243/., including fittings, by Mr. W. F. Read, builder, from the plans prepared by Mr. E. H. Lingden Barker, architect, of London and Manchester.

SCHOOL, JARROW.

The new secondary school which has been erected at Jarrow by the Durham County Council has just been opened. The new building is situated on a site over five acres in extent on the north side of Field-terrace. The main building is two stories in height. The classrooms will provide accommodation for 300 day students, and, in addition, laboratories and lecture-rooms for scientific and technical subjects have been erected. The accommodation on the ground floor comprises six classrooms, a physical laboratory with preparation room and store, and a chemical laboratory with preparation, store and dark-rooms adjoining. A gymnasium is provided in the west wing; while in the east wing there is the lecture theatre. The further accommodation on the ground floor includes the assembly hall, two stories in height, with gallery at one end, headmaster's room, library and administration-room. On the first floor, in addition to four classrooms, there are the cookery and laundry-rooms, students' dining-room, botanical laboratory, elementary and advanced art-rooms, clay modelling-room, manual instruction workshop, mechanical laboratory, and engineering workshop. Rooms for the assistant mistress and master are also on this floor. The contractor for the school buildings was Mr. T. Lumsden, Jarrow, for the playing field and fencing, Mr. J. W. Henderson, Gosforth; heating, Messrs. R. J. Ward & Co., Newcastle; tar paving, Mr. E. Clarkson, Boldon; while Messrs. Fell & Co., Hexham, have laid out the grounds. The architects were Messrs. Remondson & Newby, South Shields, and Mr. T. Weddell acted as clerk of works. The total cost, including furnishings, etc., is about 25,000/.

PIER FOR PORTHCAWL.

At a meeting held in the Exchange Restaurant, Cardiff, it was proposed to erect a pier and pavilion at Porthcawl. Details of a scheme were submitted by Mr. E. Mellis, A.M.I.C.E., and it was decided to form a syndicate to obtain the provisional order and apply to Parliament for the necessary powers.

NEW BUILDINGS IN LONDON.

Warehouse and factory, Stamford-street, S.E. (5,000/.); Mr. A. Sykes, architect, 45, Finsbury pavement, E.C. Rebuilding of Woolwich Police Court, S.E., and West London Police Court, Vernon-street, West Kensington, W., by Mr. F. Dixon Butler, architect, Metropolitan Police, New Scotland-yard, Westminster, S.W. House, Kidbrooke-grove, Blackheath, S.E. (4,000/.); Messrs. Belcher & Jones, architects, Cliford-street, Bond-street, W. Messrs. William Taylor & Co., builders, Lower Mall, Hammersmith, W. Pulling down of Nos. 6, 7, 8, and 9, Little Turnstile, Holborn, and erecting

blocks of shops and offices over; architects, Messrs. Homer & Lucas, 35, Bucklersbury, E.C.; builders, Messrs. Spiers & Son, St. John's Wood, N.W.

MEMORIAL TO SIR REDVERS BULLER.

The memorial to the late General has been erected in Winchester Cathedral, and takes the form of a black marble tomb on a plinth of polished green marble, surmounted by a recumbent figure in bronze of the late General. The sculptor was Mr. Bertram Mackenno, A.R.A., who has depicted the figure as a soldier in a greatcoat, asleep on the battlefield, a common soldier's blanket beneath him, and a knapsack for a pillow. The memorial was unveiled and dedicated on Saturday last by Lord Grenfell and the Dean of Winchester respectively.

TRADE NEWS.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to Edmond United Free Church and Hall, Kelso, N.B.

The Shipcote Hall, Gateshead, is being ventilated by means of Shorland's patent exhaust roof ventilators, supplied by Messrs. E. H. Shorland & Brother, Ltd., of Failsforth, Manchester.

The Tempersford School, Beds, has recently been fitted with one of D. O. Boyd's hygienic ventilating school grates supplied by Messrs. O'Brien, Thomas, & Co., Upper Thames-street, and Excelsior Works, South Bermondsey.

Mr. John Adams, architect of the British Hospital, Montevideo (see p. 506), who is now in London, would be pleased to confer with any British house that would install a heating system throughout the building at a minimum cost.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council, the following applications under the London Building Acts were dealt with, the names of the applicants being given in parentheses.

Lines of Frontage and Projections.

Battersea.—Retention of wooden hoods at Nos. 9, 10, and 12, Shepperton-lane, Battersea (Mr. H. Buchan).—Consent.

Battersea.—Projecting clock in front of No. 120, Battersea Park-road, Battersea (Mr. W. Watkins).—Consent.

Deptford.—Building on the eastern side of Warwick-street, Deptford (Mr. H. W. Horsley, for Messrs. Herbert & Sons).—Consent.

Greenwich.—Projecting signboard at No. 191, Westcombe-hill, Greenwich (Southern Automobiles, Ltd.).—Consent.

Hampstead.—Addition to greenhouse on the western side of Parkhill-road, Hampstead (Messrs. Duncan Tucker & Co. for Miss Willing).—Consent.

Holborn.—Erection of a building with a forecourt boundary upon the site of Nos. 245 to 260, High Holborn (Mr. H. P. Monckton for the Pearl Life Assurance Company, Ltd.).—Refusal.

Islington, East.—Retention of a signboard in front of No. 151, Englefield-road, Islington (Blaker Engineering Company, Ltd.).—Consent.

Islington, South.—Projecting one-story shop in front of No. 238, Upper-street, Islington (Messrs. Drivers, Jonas, & Co. for Mrs. C. E. Merson, Mr. R. J. Hayward, and others).—Consent.

Paddington, South.—Retention of a wooden staircase in front of No. 2, Forchester place, Paddington (Messrs. Deacon & Allen).—Consent.

Wandsworth.—Erection of buildings on the western side of Ellerton-road, the southern side of Magdalen-road, and the northern side of Burntwood-lane, Wandsworth (Messrs. Holloway Brothers).—Consent.

Woolwich.—Bay windows to four houses on the northern side of Glenlyon-road, Eltham (Mr. J. J. Bassetti).—Consent.

Woolwich.—One-story building on the western side of Griffin-road, Plumstead, northward of No. 2 (Mr. E. H. Wright for Mr. C. G. Lambeth).—Refusal.

Width of Way.

Bow and Bromley.—Building at the rear of No. 132, St. Stephen's-road, Bow, at less than the prescribed distance from the centre of the roadway of Chad-street (Messrs. Andrews & Foxwood for Messrs. Devine & Co.).—Consent.

Deptford.—Addition to a building on the southern side of Mary Ann's-buildings, Deptford (Mr. O. Archer for the Salvation Army).—Consent.

Kensington, North.—Erection of a building on the eastern side of Old Court-place, Kensington (Messrs. J. Barker & Co., Ltd.).—Consent.

St. Pancras, North.—Clubhouse and cottages upon a site on the eastern side of a footway leading from York-rise to Chester-road, St. Pancras, with a forecourt boundary at less than the prescribed distance from the centre of the said footpath (Messrs. Matthews & Son for the Mansfield Bowling Club, Ltd.).—Consent.

Wandsworth.—Erection of a building on the south-western side of a way leading from Mitcham-lane to Eardley-road, Streatham (Mr. W. Bartholomew for Mr. Parker).—Refusal.

Woolwich.—Erection of a building upon the site of No. 1, Beresford-square, and Nos. 1, 1B, 1, and 2, Beresford-street, Woolwich, abutting also upon Salutation-alley (Mr. R. M. Allen for Mr. G. St. John).—Refusal.

Width of Way and Lines of Frontage.

Kensington, South.—Retention of a permanent wooden staircase at No. 4, Thurloe-mews, South Kensington (Messrs. W. Hodges & Co., Ltd.).—Consent.

Lines of Frontage and Construction.

Islington, North.—Erection of a cathedral crane at No. 6, Hercules-place, Holloway (British Ever Ready Electrical Company, Ltd.).—Refusal.

Lewisham.—Temporary wood and glass shed at No. 2, Brockley-road, Lewisham (Messrs. Thompson Brothers).—Consent.

Width of Way, Lines of Frontage, and Construction.

City of London.—Iron and glass gantry over George-yard, Bouverie-street, City, at premises of the Daily News, Ltd. (Messrs. Treadwell & Martin).—Consent.

Greenwich.—Steel and iron barge building sheds and a sawmill upon a site on the northern side of Rope-walk, Greenwich, between Anchor and Hope-lane and Angstein's Wharf, and erection of a steel and iron gantry at the said premises (Messrs. W. C. & Sons, Ltd.).—Consent.

St. George, Hanover-square.—Erection of a steel, iron, and concrete gantry to connect two blocks of premises of Messrs. Keen, Robinson, & Co. Ltd., over the public way of Denmark-street, Stepney (Messrs. Keen, Robinson, & Co. Ltd.).—Consent.

Width of Way, Deviation from Certified Plan, and Cubical Extent.

St. George, Hanover-square.—Re-erection of a garage building in Pembroke-mews, Halkin-street, Westminster (Mr. E. Wimpsey for Messrs. Rawlings Brothers, Ltd.).—Consent.

Width of Way and Buildings for the Supply of Electricity.

Hoxton.—Erection of a fixed girder a movable runway across Bath-place, Hoxton, at the Shoreditch Borough Council's electricity power station (Mr. C. N. Russell for the Shoreditch Metropolitan Borough Council).—Consent.

Space at Rear.

Kensington, North.—Erection of a building upon the site of No. 14A, Pembridge-place, Kensington, with an irregular open space at the rear (Mr. J. S. Beard for Sir W. Cooper).—Refusal.

Construction and Alteration of Buildings.

St. George, Hanover-square.—Iron, glass and concrete staircase enclosures in an open court at the rear of No. 9, Berkeley-square, St. George, Hanover-square (Mr. F. Foster).—Consent.

Space at Rear and Alteration of Buildings. Marylebone, West.—Water-closet addition to the rear of the Wallace Head public house, Blandford-street, St. Marylebone (Mr. W. Ingram for the New London Brewery Company, Ltd.).—Consent.

Buildings for the Supply of Electricity.

Hampstead.—Wooden cooling tower at the Hampstead Metropolitan Borough Council's electricity generating station, Lithos-road, Hampstead (Mr. A. P. Johnson).—Consent.

Alteration of Buildings.

City of London.—Additions and alterations at the premises of the Daily News, Ltd., the eastern side of Bouverie-street, City (Messrs. Treadwell & Martin for the Daily News, Ltd.).—Consent.

Formation of Streets.

Wandsworth.—Barriers across Broad-water and Klamata-street, Garratt-lane, Tottenham (Messrs. Grundy, Ltd. & Co.).—Consent.

Wandsworth.—Adaptation as a street of way or part of a way leading from Mitcham-lane to Eardley-road, Wandsworth (Mr. Bartholomew for Mr. Parker).—Refusal.

Uniting of Buildings.

City of London.—Uniting of Nos. 4 and Wood-street, City, by an opening at the ground-floor level, so far as relates to formation of an additional opening at basement level (Mr. S. Mart).—Consent.

London.—Doors of special construction in iron doors to open openings at the offices of Messrs. Peek Brothers & Winch. Trundleys-road, Deptford (Fireproof Ltd., for Messrs. Heath & Sons).—**London, West.**—Formation of three open a party-wall at a proposed garage of London General Omnibus Company, Ltd., street, Newington (Messrs. A. L. Gibson for the London General Omnibus Company, Ltd.).—**Consent.**
Leitch.—Erection of additional stories to L. N. and O at the premises of the Electric Company, Henley-road, Northwich (Mr. B. Dawson).—**Consent.**
Recommendation marked + is confined to the views of the Metropolitan Borough Council concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

Aden.—House, near Bridge of Dee (Mr. W. E. Gauld, 11a, Dee-street, Leam).
Albion.—Proposed extensions to Alma (3,000), for Messrs. Francis Webster & Sons, sailcloth, etc., manufacturers. Addition to Iron Works (2,500), for Messrs. A. & Son, Ltd.
Amman.—Bank, near the church, for the City and Midland Banking Company, Ltd. (School (1,140); Messrs. Smith & Sons, builders, 18, Lancaster-road, Kettering).
Blackburn.—School (5,000); Mr. J. T. Black, architect, Market-place, Kettering.
Birmingham.—Rebuilding Mossend-street Works, Messrs. W. Beadmore, Ltd.
Birmingham, City.—Hospital (1,000); Mr. J. E. Litchman, Derwent-street, Birmingham.
Birmingham, Offices.—Offices for the Blyth Harbour Commissioners; Messrs. Cackett & Burns Dick, 24, Grainger-street West, Newcastle.
Birmingham, Children's home.—Beacon-road (Mr. C. F. Hain, builder, care of Mr. Thynbridge, clerk, Board of Guardians, in).
Birmingham, Proposed school.—near Wesleyan, 1, Nottingham-road (1,000); Trustees, John Chapel, Nottingham-road, Birmingham.
Birmingham, School.—School (5,000); Mr. D. Pugh, architect, Charles-street, Cardiff.
Birmingham, Extensions.—to Grammar School; P. Elford, Secretary, Education Committee, Oxfordshire County Council, Oxford.
Birmingham, Alterations.—to school, Abels-street; Mr. E. Jones, Secretary, Education Committee, Burnley Town Council.
Birmingham, Lloyds Bank.—Lloyds Bank (7,000); J. Slater, Wedgwood-place, Burslem.
Birmingham, Dispensary.—Dispensary (500); Clerk, Alfred Guardians, Radford.
Birmingham, School.—School (3,600); Mr. C. W. County Architect, Brecon.
Birmingham, School.—School (6,000); Mr. J. Julian, hall, Cambridge.
Birmingham, Extensions.—to school (Mr. J. King, Russell-street, Wihaw, Gwyndyn—Chapel; Mr. J. Teinson, architect, Cardigan; Jas. Morgans, 1, Llyweddafydd, New Quay).
Birmingham, Enlargement of Whitwood Mere School.—School (100 extra places); the Messrs.
Birmingham, Residence.—Curzon Park (1,700); Messrs. Dickens, Lewis, & Haynes, architects, Shrewsbury; Messrs. Treasure & Son, builders, Shrewsbury.
Birmingham, Victoria-road.—for the Messrs. and Liverpool District Banking Agency.
Birmingham, Additions.—to St. Oswald's Roman Catholic Schools (ninety extra places); the Messrs.
Birmingham, New water scheme.—S. F. C. Howard, Surveyor, Dawlish Urban District Council.
Birmingham, Artisans' dwellings.—Trinity (3,430); Mr. F. Cottle, Surveyor, Tas Town Council.
Birmingham, Proposed enlargement of St. Martin's Schools.—Schools (1,200); Mr. R. Knockner, Secretary, Education Committee, Dover Town Council.
Birmingham, Lodging house.—School (3,000); Mr. Bell, architect, Merry street, Motherwell.
Birmingham, Jute warehouse.—Mid street, for Messrs. Don & Duncan.
Birmingham, Buildings.—Nicholson-square (Mr. T. P. Marwick, 43, York-place, Birmingham).
Birmingham, Twenty-three houses and lay-out of land.—Avenue-road; Mr. W. Eger, architect, 12, Queen's-road, Erith.

* See also our list of Competitions, Contracts, in another page

Exeter.—Business premises, Sidwell-street; Mr. J. A. Lucas, architect, Guildhall-chambers, High-street, Exeter. Extensions, Sanatorium (5,000); Mr. T. Moulding, Surveyor, Exeter Town Council.
Featherstone (near Pontefract).—Homes for aged miners; Mr. W. Hamilton, Fearnley, Featherstone.
Folkestone.—The following plans have been passed:—Motor garage, rear of Marine-terrace, for Mr. A. H. Holbein; Messrs. Bromley & Dahl, architects. Alterations and additions to "Seaholme," The Riviera, Sandgate, for Dr. Wesley Smith; Mr. A. R. Bowles, architect.
Fox Platt.—School; Mr. J. Hyde, Secretary, Education Committee, Mossley Town Council.
Galway.—School (2,000); Messrs. Cooper & Dickinson, 12, South Frederick-street, Dublin.
Glasgow.—Factory; Mr. T. A. Miller, 12, Randolph-street, Glasgow. Extensions to engine works, Canal-street (2,500); Messrs. J. Monro & Sons, architects, 28, Bath-street, Glasgow. Extensions to works (3,000), for the Harvey Engineering Company, 224, West-street, Glasgow.
Glasgow, St. Peter's Church.—Church (10,000); Messrs. Webster & Cannon, builders, 42, Cambridge-street, Aylesbury.
Hebburn-on-Tyne.—Picture hall and theatre; Mr. H. E. Kelvey, 79, Rushmore road, Manchester.
Hilarywood and Winton.—Schools (5,000 each); Mr. R. Littler, architect, 16, Ribblesdale-place, Preston.
Holyake.—High school for girls (9,000); Messrs. John Lee & Son, builders, Higher Behington.
Joppa.—Terrace villas, Brunstone-gardens (3,000); Mr. G. S. Carrara, 1, Eskine-place, Edinburgh.
Kenley.—Adaptation of Commemoration Hall into boys' secondary school (5,500); County Architects, Surrey County Council, Kingston-on-Thames.
Kinglassie.—School (7,800); Mr. G. C. Campbell, Methil, Fifeshire.
Kinning Park (Glasgow).—Rebuilding saw-mills (10,000); Messrs. H. & D. Barclay, architects, 245, St. Vincent-street, Glasgow.
Kirkby Woodhouse.—Church institute and Sunday-school (2,500); Mr. Louis Ambler, architect, 201, Temple-chambers, E.C.; Messrs. Coulson & Lofts, builders, 37, St. Andrew's-street, Cambridge.
Kirkstall.—Chapel and school; Trustees, Zion United Methodist Church.
Leith.—Extensions to works, Leith-walk (2,500), for Messrs. Jas. Bertram & Son, Ltd. Lemington.—Institute; Franklin Brothers, builders, Newcastle.
Leven (Fifeshire).—Proposed additions to Davis Foundry (10,000), for Messrs. Harry Balfour & Co.
Lisburn.—School (3,000); Mr. Jas. Hunter, Lisburn.
Long Four (near Londonderry).—School (5,000); Mr. D. R. Wray, architect, 21, Ship Quay-street, Londonderry.
Lower Bebbington.—School (1,000 places); Mr. R. P. Ward, Secretary, Education Committee, Cheshire County Council, Chester.
Luton.—Infirmary (6,000); Messrs. Gotch & Saunders, architects, Market-place, Kettering.
Manchester.—Alterations and additions to Summer House (1,500); Mr. J. H. Reynolds and Mr. C. H. Wyatt, Joint Secretaries, Education Committee, Manchester City Council.
Middlebrough.—Six cottages on asylum ground (220, per house); Mr. S. E. Burgess, Surveyor, Middlebrough Town Council.
Morley.—Additions to Grove Mills for Messrs. David Bradley, Ltd.
Muirhead.—School, Coumar Angus-road (2,000); Liff School Board.
Newcastle.—School (5,000); Mr. Harrison Ash, Newcastle.
Newport (N.B.).—Post-office buildings (2,100); Messrs. McCulloch & Jamieson, architects, 20, Whitehall-street, Dundee.
Nifferton (East Riding Yorks).—Proposed school, Westgate; J. J. Bickersteth, Secretary, Education Committee, East Riding of Yorks County Council, Beverley.
Nuneaton.—Additions to factory, Seymour-road, for Messrs. H. Singaby & Son.
Padiham Green.—Additions to school (2,100); Mr. R. Littler, architect, Ribblesdale-place, Preston.
Paisley.—Extensions to Messrs. Eadie Brothers' works, Violet-street (2,200); Mr. J. C. Bennett, 12, High-street, Paisley.
Alterations and extensions.—nurses' home buildings, West Mount; Surveyor, Paisley Parish Council, Church-halls, North Croft; Mr. Peter Coates, Garthland-place, Paisley.
Petersfield.—New block of infirmary; Mr. A. J. Mackenness, Clerk, Petersfield Board of Guardians, High-street, Petersfield.
Pontsarn.—Sanatorium (7,177); Messrs.

John Morgan & Son, builders, Monk-street, Pontsarn.
Portobello.—Extensions to Harbour Green Pottery; Messrs. Carlyle & Buchan, 42, Brighton-place, Portobello.
Retford.—Schools (6,000); Mr. L. Maggs, architect, Shire Hall, Nottingham.
Richmond.—Rearrangement of St. Mary's Schools; architect, care of the Managers.
Rock Ferry (Birkenhead).—School, Lees-avenue; Messrs. W. Tomkinson & Sons, builders, 21, Dansie-street, Liverpool.
Rosemount (near Londonderry).—School (3,500); Mr. E. J. Foyl, Strand, Londonderry.
St. Austell.—Cottage hospital; Mr. A. Clarke, builder, Penventon, Redruth.
Shaw (near Oldham).—Picture hall (2,700). Mr. Herbert Laugman, 120, Lord-street, Southport.
Sheffield.—United Methodist Church, Chantry-road (2,500); Trustees, Woodstock Church, Sheffield.
Sherburn (Co. Durham).—School (5,000); Mr. W. Rushworth, architect, Shire Hall, Durham.
Somerton.—School; Mr. A. A. Newman, Secretary, Education Committee, Newport (Mon.) Town Council.
Southampton.—The following plans have been passed:—Ten houses, Newcombe-road, for Mr. W. B. Hill; twenty houses, Newton, Ash Tree, and St. Catherine's roads, for Mr. J. Smith. Plans have been lodged for six houses, Newton-road, for Mr. F. Lowe; also for the development of Athorley Estate, Hill-lane, for Messrs. Jurd & Sanders.
Southend.—Tramway shelter, pierhead (700); Mr. R. Birkett, Electrical Engineer, Southend Town Council.
Southwick.—Presbytery, adjoining St. Hilda's Roman Catholic Church; Messrs. Jos. Potts & Son, builders, 57, John-street, Sunderland.
Springfield.—Extensions, asylum (3,700); Messrs. Gillespie & Scott, architects, 4, Queen's-gardens, St. Andrews, Branch store, Arbour-lane, for the Chelmsford Star Co-operative Society.
Station Town.—School; Mr. J. A. L. Robson and Mr. A. J. Dawson, Joint Secretaries, Education Committee, Durham County Council, Durham.
Twickenham.—The following plans have been passed:—Alterations and additions to Brandon's Brewery, London road, for Mr. W. Simmons; alterations to pavilion, Island Hotel, Eel Pie Island, for Mr. H. G. G. Walker Gate, School; Messrs. Mars & Tweedy, architects, 17, Eldon-square, Newcastle-on-Tyne.
Ware.—Alterations to factory for Messrs. Allen & Hanbury.
West Hyde (Herts).—School (200 places); Mr. U. A. Smith, Surveyor, Herts County Council, Hertford.
Wheel Harmony (Redruth).—Housing scheme; Mr. Sampson Hill, architect, Green-lane, Redruth.
Whitby.—Rebuilding of Custom House Hotel for Messrs. Forster's Bishop Middleham Breweries, Ltd.
Wigan.—A plan has been passed for four houses in Platt-lane for Mr. John Knowles.
Yarmouth.—Maltings, Laughing Image Corner, for Messrs. E. Lacon & Co.

BUSINESS PREMISES, GRAY'S INN-ROAD, LONDON.

In reference to our notice on page 479 and illustration in last week's *Builder* relating to this building, the general contractors for the building were Messrs. Patman & Fotheringham, Ltd., London, W.C.

MANCHESTER BUILDING TRADE EXHIBITION.

The Seventh Manchester Building Trades Exhibition, organised by Mr. Walter Cawood, of the City Hall, Deansgate, Manchester, will be held in March next, for a period of eleven or twelve days. The Exhibition is supported, we are informed, by the trade organisations in the North of England, prominent amongst whom are the Manchester, Salford, and District Building Trade Employers' Association, Manchester and District Branch National Registration of Plumbers, and the Institute of Plumbers, Ltd.

BUILDERS' LABOURERS' WAGES.

An adjourned meeting of the National Builders' Labourers' Union was held on the 27th ult. at the Co-operative Hall, Downing-street, Manchester, to consider a letter received from employers in the trade in reply to a communication sent by the officials of the union asking for an increase of wages which would mean a minimum of 6d. per hour. Mr. T. O'Garra, President of the Building Trades Federation, presided. A resolution was passed asking the employers to submit the whole question of wages, rules of employment, etc., to the Board of Arbitration in the building trade, or to an independent arbitrator, with a view to avoiding a cessation of work.

HEATING AND VENTILATION.

THE first of a series of six public lectures on "The Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer" was delivered in University College on the 17th ult. by Mr. Arthur H. Barker. Sir Aston Webb presided, and said that the lectures were the result of a communication between the Institute of Heating and Ventilating Engineers and the University of London. They were to provide teaching for regular engineering students who might wish to specialise, and for engineers and architects engaged in practice. Architects were supposed to take no trouble in securing the best form of heating and ventilation for their buildings, but that was not the case. It was an extremely difficult thing to ventilate and heat a building used by people of different ages and requirements.

Mr. A. H. Barker then read his paper, the title of which was "On the Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer." In the course of his remarks the author said:—

"In proposing to discuss the nature of the unsolved problems in heating and ventilation I am fully aware that I am committing myself to a review of the entire field of heating and ventilation. There is perhaps no part of this field which is not replete with problems which have not been fully solved, many of which can in the nature of things never be fully solved.

A considerable part of the science of heating and ventilating may be perhaps described as a science of leakages. Many of the problems which the heating engineer is called upon to solve are similar to one which often confronts the gas engineer—to determine how much of the gas put into a main will leak away before it gets to the customer's burner, or shall I say before it gets past the customer's meter? The solution, of course, depends entirely on the skill and care with which the mains are put in, and perhaps on the skill and care with which the customer's meter is adjusted, on the quality of the ground, and the traffic which passes over it, the temperature, and the number and extent of the minor earthquakes experienced. It is impossible to determine the quantities with precision unless a great many things are known which never can be known exactly.

The function of the heating and ventilating engineer is the application and utilisation of heat and air. In the broadest sense, all these applications may be said to be within his sphere. But this is the age of the specialist, and the applications of heat and air are so numerous that no one branch of engineering can sufficiently deal with them all.

The application of heat and air, as in the case of every other branch of engineering, has been subdivided into a large number of special branches. There is the boiler engineer, who deals with their application at high temperatures for special purposes; the power engineer, the metallurgical engineer, and many others.

At the other end of the scale we have the refrigerating engineer, whose special function is the removal of heat and the expansion of air and other gases, the consequent attainment of low temperatures.

The profession of the heating engineer lies somewhere between these limits, within a region bound by undefined limits of temperature. As regards heat, the greater bulk of his work lies between the limits of 30 deg. and the boiling-point of water. Of course, there are many instances in which he is concerned with the maintenance of lower or higher temperature than these—up to, say, 600 deg. for special industrial purposes—and he is sometimes, though rarely, concerned with very low temperatures.

He has sometimes to deal with high-pressure steam, but rarely above 100 lb. per square inch. His functions, however, in practice, go considerably beyond these bare limits.

As for air, he treats it chiefly at atmospheric pressure in regard to its temperature, composition, cleanliness, humidity. He sometimes has to do with air at low and high pressures. He is concerned to some extent with air compression.

He has to do with laundrywork, cooking apparatus; he has close connexion with the building trades, including that part of the structural design which is out of sight—

plumbing, drainage. He has to do with electricity, as far as this form of energy is used for development of heat and for the generation of power in small quantities, especially for such purposes as the driving of fans and laundry machinery. He is also concerned with constructional work, furnace work, refrigeration, and, to some extent, the generation of power.

It will be seen that the sphere of the heating engineer cuts into a large number of other trades, with all of which he is more or less concerned. The special branch with which he is more directly concerned than any other is the maintenance of the temperature in, and the delivery of air into, inhabited buildings. This is the branch with which I shall deal in the first place.

In relation to his *clients* the heating engineer occupies a position which is in some respects different from that occupied by other engineers.

There are few private persons wishing to light their houses by electricity, for instance, who would endeavour to carry the work out without the assistance of a specialist. Few persons would venture to put in an engine or boiler or even an acetylene gas plant without trained assistance.

On the other hand, the man who wishes his house to be heated and ventilated can do the work himself after a fashion. He can put large fires in his grate and open his windows. He can buy gas radiators, and connect them to gas pipes which the gas company puts in for him. His domestic staff can dry his clothes by hanging them out on a line or putting them in front of the fire. He can even hire a local plumber to put him in boilers and radiators, or if he is of a mechanical turn of mind he can even do this work with his own hands.

It does not at first sight appear to be a problem of any considerable complexity merely to provide a certain amount of heat and a certain quantity of air to a building.

If, therefore, the heating engineer is to justify his existence, he must be able to show that he can do this work so much better and more cheaply than the unskilled man that it is worth the while of the latter to call in his help.

A considerable part of the real science of heating and ventilation consists in the knowledge of how far the laws of mechanics, physics, and chemistry are not applicable. The study of the negative side of the science is, in practice, at least as important as that of the positive side. It is, for instance, easy enough to determine what would be the heat lost from an air-tight window if there were no wind, no rain, and an even temperature on each side. One of the essential investigations applicable to questions of this kind is how far the ordinary rules of heat transmission are not applicable to such cases. This is the kind of negative science in which heating engineering largely consists.

In this restricted sphere of warming and ventilating buildings the fundamental and comprehensive problem which the heating engineer has to solve is how to provide the most healthy possible conditions within a building at the lowest possible cost. This is the parent problem of the whole subject, and I shall have to ask you to bear with me while I consider it in some detail.

It is necessary for the fully-equipped practitioner to appreciate fully every condition that bears on the solution of this problem. That solution is essentially divided into three parts:—

Firstly, to discover what those conditions are, and, secondly, the means by which they can be provided; and, thirdly, how they can be provided in the easiest and cheapest way.

The third section is an essential part of the problem. It may perhaps be granted provisionally that if a certain temperature is maintained on a thermometer, and if a certain large regular and liberal supply of clean fresh air is thoroughly mixed with the air in a room, this does, with certain limits, constitute healthy conditions.

The production even of these simple conditions in a large number of rooms simultaneously in itself involves the application of a large and complicated set of natural laws, but the study of these is a comparatively simple matter.

The heating engineer will in future have more and more to inquire what is the cheap way in which equally satisfactory conditions can be secured. It would even at present be of little use to lay down that, in order to secure healthy conditions, certain results must be obtained, if the obtention of those results is so expensive that an ordinary citizen could not hope to attain them. The effect of increasing the stringency of the requirements is that the ordinary citizen or even the ordinary committee of public body endeavours to do without them and takes the risk of the results, or endeavours to get what he considers tolerable conditions for himself by means cheaper in first cost. It is for the heating engineer to know not only what are the most desirable conditions, but also how they can now be secured, and the factors which bear on the relative cost of the various methods at present known, and also what the lowest conceivable cost at which such conditions can possibly be obtained.

There are two distinct elements in the technical success of an installation of heating and ventilation, apart from the question of cost. The perfectly-successful plant is one which secures conditions within a building which are as healthy as living in the open air, and produces a feeling of perfect comfort in the persons using the building. Under these two conditions are both satisfied there is always room for improvement in the results obtained. No conditions can be considered satisfactory, even for a time, however healthy they may be, unless a person subjected to those conditions is maintained in a state of reasonable bodily comfort. If he is actually conscious of his bodily comfort, he ought at least to be unconscious of any comfort.

This element, therefore, though important is certainly secondary in real importance; the commercial engineer it is more important than the other element. A heating engineer who produces conditions which are uncomfortable is brought to book at once. If he produces conditions which are unhealthy though comfortable, he may never be brought to book till the day of judgment, and he has not then if he pleads ignorance or throws the responsibility, as I think I should be able to show, in present conditions has a perfect right to do, on the medical authorities, and on the persons responsible for the control of finance.

It would perhaps be satisfactory from a point of view of comfort that a person should be conscious that any system of heating and ventilation exists or is absent when suitably engaged in any ordinary occupation—is, that he should be conscious of neither heat nor cold, stuffiness nor draughtiness.

It has latterly been the custom to treat pulmonary diseases, such as phthisis, by ventilation known as the open air treatment. The lowness of temperature to which sufferers are often subjected in carrying out this treatment is not infrequently, indeed, usually said to produce, especially at first, more or less acute discomfort. Such conditions have nevertheless been proved to be of great advantage.

The patient experiences a positive feeling of comfort when he allows himself to be closed in a room that is warm. Such conditions, though extremely comfortable for a time, have a most prejudicial effect on the health of the recovering patient. It is, indeed, quite easy to conceive that perfectly comfortable conditions might be attained in a room which were nevertheless extremely dangerous.

It is thus clear that there is no essential connexion between feelings of bodily comfort and the prevalence of healthy conditions, though it is probable that a constant valence of conditions which are necessarily uncomfortable does tend to be prejudicial to health. It is not easy to define either constitutes comfortable conditions, or healthy conditions. Individuals differ greatly in their estimate of bodily comfort. Conditions which to one person are perfectly comfortable, may to differently-constituted persons represent the acme of discomfort.

In this latter connexion one of the difficulties arises from the fact that Nature has made the human body singularly adaptable to whatever conditions it may be placed in. Indeed, it is held by some of the

need medical thinkers that one of the things essential to bodily well-being is constant change of condition, and that there is to maintain a suitable standard of a constant change of atmospheric condition of some kind is essential.

order to be able even to commence his on accurate lines the engineer requires now in minute detail what is the condition of the atmosphere as regards chemical composition, temperature, humidity, and ment, which must be maintained in a in order to secure not only comfort, also healthy conditions. The nature of investigation which must be undertaken under that this information may be obtained, as I have said, of the most difficult order known to modern science. For reason, no scientific instruments have or possibly can be devised which will the information directly, and even if an instrument were in existence produced observations of such a difficult order would be necessary that is almost and possibility that the information be of been obtained.

chief function of ventilation is held by of the most eminent authorities to adapt condition of the air so that it will be able for helping to maintain the proper temperature.

most of the theories as to the function of ventilation which have done duty for the hundreds of years, or since mankind thought on the subject at all, have been altered by recent experiments to be wholly wrong. It is not very long since that carbon dioxide was regarded as an active respiratory agent, and the quantity of this poison in the air determined its value or healthiness. It is now known to be not in the deleterious, even in quantities vastly in excess of that contained in the worst breathing air.

According to Dr. Leonard Hill, up to 300 to parts per 10,000 it has no considerable effect on the organism. By another of those yellow automatic regulating mechanisms, excess of CO₂ simply stimulates the thing, the effect of which is that a man immersed in such an atmosphere comes to breathe very deeply. It does not lead to the least increase of the amount of CO₂ in the blood. Small percentages of 100 to 200 parts per 10,000 are of no account. Six hundred parts per 10,000 produce headache, irritation of the heart, sweating, and the thing becomes distressing. Higher percentages, 1,100 to 1,200 parts per 10,000 produce coma, but do not quickly destroy life.

An extraordinary fact is that the quantity of CO₂ in the blood is kept constant whatever the nature of the atmosphere breathed, the automatic regulatory effect of the thing in the blood on the respiratory centres. Then it is considered that the rough rule thumb hitherto used by the ventilating engineer that the proportion of CO₂ in the breathing air must not exceed ten parts per 10,000, and that this rule was originally arrived at by assuming the theory that CO₂ is an active poison, it will be seen that a small change in practice may possibly be sight, although even now the greatest authorities on hygiene adopt this or a similar rule based on a microscopic percentage of CO₂. Another similar theory which has also been only exploded is that an excess of oxygen in the breathing air produces more rapid combustion and so endangers life by burning the body too quickly. It is now known that the body cannot be made to burn faster, like a fire, by a greater supply of oxygen. A very large excess, however, is poisonous, and arrests the metabolism of the body.

A defect in the quantity of oxygen, which as from 21 to 15 per cent. of the quantity normally present in breathing air, is known to have very little effect on a healthy subject. A candle will not burn in containing less oxygen than 17 per cent. in an atmosphere, but the percentage can be altered to about fourteen without notably affecting the bodily functions. The proportion normally present in the air is about 21 per cent. With 12 per cent. only the breathing becomes altered. With 10 per cent. the colour of the face takes on a leaden hue, the heart palpitates, and bodily and mental activity become difficult. At about 6 per cent. consciousness is lost, and death takes

place when the oxygen sinks to 3 to 4 per cent., or about one-sixth part of the quantity normally present in breathing air.

Another theory largely held, but now proved wholly erroneous, is that the presence of ozone destroys the organic germs in the air, and has a stimulating effect on the organism. The extremely minute quantities of ozone, however, present in ordinary air is now known to have no such effect. It is true that concentrated ozone will destroy or oxidise germs, but if ozone existed in the air in sufficient quantity to do any damage to the bacteria it would produce inflammation in the lungs of persons breathing it. What has been supposed to be the odour of ozone in seaside air is now known to be the slight smell of decaying seaweed, and it is certain that there is no greater proportion of ozone in seaside air than there is in any other air.

On the authority of Haldane, there is no evidence whatever of the existence of any poisonous organic impurity in the air of crowded rooms. Expired air is certainly entirely void of particulate matter; it is, in fact, much freer from germs than is the ordinary air of the street.

The smell which is noticeable in crowded rooms, especially in an assembly of uncleanly persons is now known to consist of the products of putrefaction of particles of dirt on the skin and on the clothes. It has no detrimental effect whatever except that it produces a feeling of nausea in persons of æsthetic temperament.

It will be thus seen that all the explanations that have done duty in the past of the undoubted evil effects of breathing bad air are definitely disproved, and it has not even yet been definitely settled what is the feature of vitiated air which does, in fact, or which appears to produce results prejudicial to health or of fresh air, which has a contrary effect.

The smell, temperature, degree of humidity, and absence of movement of breathed air, as well as the presence of disease germs are causes which so far as is at present known produce evil results, but what degree of absence of these features is necessary that there may be no evil results whatever is not known, and perhaps cannot be exactly known for the reasons previously stated.

It is probable that the best opinion on the point is fairly unanimous that the chief evil effects are due to the temperature and the moisture in bad air, which exercise a bad effect on the working of the automatic temperature mechanism of the body.

The presence of these features in bad air make it more difficult for the surplus heat to be abstracted from the body, and produce results which are a direct consequence of that effect. Very little consideration, therefore, will show us what the radical alteration in the theories of ventilation these facts, assuming them to be well established, must produce, and it is difficult to say what changes in practice we are on the eve of witnessing on account of these discoveries.

It is only within comparatively recent years that much attention has been devoted to the humidity of the air as an element in efficient ventilation. If the air is too dry, say, below 50 deg., it has certain evil results. It takes up moisture from every object that will yield it, causes a shrinkage of wood, produces cracks in floors and fissures in beams, and damages furniture. Its effect on the human organism is that it absorbs moisture from the skin, from the nasal passages, mouth, the throat, and the lungs. It makes the skin dry and rough, and aggravates throat and catarrhal troubles, and is in some cases the developing cause of such disorders.

Persons are, as a rule, constantly passing into and out of rooms, which may be very dry, into the outside air, which may be very moist owing to its lower temperature. This is probably the cause of colds and inflammation of the throat and bronchial passages. It produces in some persons a feeling of lassitude. It has a tendency to lower the temperature of the skin too rapidly, owing to a rapid absorption of moisture. On the other hand, air that is too damp interferes with the normal loss of heat from persons, and again causes a feeling of oppression. Now, it is difficult to conceive that variations in the humidity alone can be very serious, because Nature provides an atmosphere which is extremely variable in humidity.

There is one feature in vitiated air which is not directly connected with its chemical composition, but is of very great importance in connexion with healthiness of living inside four walls, that is the amount and character of the dust in the air. Any person who has watched closely the course of a beam of sunlight through the air of a room cannot fail to have observed the innumerable multitudes of dust particles which appear to fill every cubic inch of space. The very smallest movement sets in motion uncountable millions of dust particles, and, if a close watch be kept on the air passing into the nose or mouth of the persons breathing, these particles can be actually seen entering these passages. As expired air is practically free of all particulate matter, it is clear that the dust entering the body through the nose and mouth remains there. Since among these millions dust particles there must be a large number of disease germs, it is obvious that every human being is exposed every breath he takes to the attacks of diseases.

The particular feature of ventilation which helps in removing the dust is that the exhaust or foul air should be taken from the very lowest possible level—if possible from a horizontal grating in the floor—but in any case through an aperture right at the floor level, such that there is no sill or unperforated ledge between the actual floor level and the hole through which the air passes. The reason is that it is found on analysis that there is a much greater concentration of dust particles close to the floor than anywhere else, and the number of particles always increases the nearer the floor.

When air is warmed by contact with hot surfaces there is, to my mind, a great deal of evidence to show that it undergoes some change, the nature of which, so far as I know, has never been properly defined, and I am not sure that even the existence of a change is generally recognised. I can only define the effect of the change as a devitalisation. In my own mind I am satisfied that this change does take place, apart from the change of temperature, the change in the quantity of CO₂, or in humidity. I have no doubt it has much to do with the prevalent unpopularity of central heating for private houses and other buildings as now practised in this country and elsewhere, and particularly with the unpopularity of the Plenum system. The investigation is difficult because at least half of the necessary observations relate to matters which are purely subjective. It has to do with the variable sensations of individuals. So far as my experience goes, air is not affected in this sense by a surface below a temperature of 130 deg. Fahr. Above this temperature it is always noticeable by people who are affected by it, and the hotter the surface the more it is noticeable. It is something, I believe, quite different from the burnt smell which emanates from very hot radiators, and which indefinitely resembles the smell of wet paint. The latter smell is said to be due to the charring of organic particles, but I am certain that the feeling of lassitude to which I have alluded is some thing different from the presence of this smell.

May I now review the position in which the above discussion leaves us, as seen from the point of view of the ventilating engineer? Please observe that I have not yet said anything whatever in regard to heating, nor in regard to cost; I have only considered the outlines of the root problem of the ventilating engineer, that fundamental problem which meets him at the very outset—what is good air and what bad?

The object is to attain healthy and comfortable conditions by regulating the composition of the air in a room in the broadest sense. We know from experience that untreated vitiated air is injurious to breathe; of that there can be no possible doubt. Neither is there any possible doubt that the air which Nature provides is generally good to breathe as regards chemical composition.

It is, however, within the region of doubt whether and to what extent natural air can be improved for breathing purposes by altering its temperature and humidity and by extracting some of its dust. Nature provides elaborate automatic regulating mechanisms in the human body which counteract the effect of variable temperatures, humidity, and excessive CO₂, and to some unknowable extent provides for the elimination of dust entering

the mouth and nose. It is more than a probability that it is conducive to health to give these automatic mechanisms plenty to do in order to keep them alive. In other words, it is not healthy to make the air so uniform, draughtless, and generally perfect that the automatic mechanisms are allowed to perish or deteriorate by atrophy.

It appears to me to be doubtful whether heating air by means of hot surface does not destroy its vitality. If it is so, the reason for it is entirely unknown. Now we know, or think we know, what is the chemical composition of atmospheric air, although it is more than a little disconcerting to reflect that it is only within the past few years that some hitherto entirely unknown elements have been discovered in atmospheric air in comparatively large quantity. I do not know that any attempt has been made to ascertain what effect, if any, these newly-discovered elements have on the human body.

We also know, in the same doubtful and expectant fashion, what is the composition of expired air, but we do not know, and apparently no man can tell us with certainty, which are the features of expired air, which are deleterious.

We are told that it is not the excess of carbon dioxide, since vastly greater quantities of this gas can be endured without the slightest effect. It is not the deficiency in the quantity of oxygen, nor the absence of ozone. There is no poisonous organic impurity in expired air. There is, however, a smell in a crowded room which, though easily perceptible to the senses, appears to baffle all attempts at chemical analysis. Again, the dangerous ingredient in air is said not to be dust. Dust is not generally dangerous if of an inorganic character, or even if organic and free from certain bacteria or micro-organisms, which are the exciting cause of certain diseases. What, then, is the trouble with vitiated air? The only answer that it is possible to give to this inquiry at present is that it is, probably the temperature and humidity (I ask you to mark that word "probably"); it has possibly something to do with the smell, and possibly something to do with the germs, if and when unhealthy persons are present. It may be the lack of movement. It needs no explanation to show from this analysis that if a ventilating engineer wishes to tackle this root problem on sound lines this analysis affords him no assistance whatever.

It is clear that, at least one solution consists of making the air in a room good to breathe by sweeping such vast quantities of atmospheric air through it that the difference between the composition of the inside and the outside air is microscopic. This is a kind of counsel of despair. A man normally takes into his lungs $\frac{1}{2}$ cubic ft. or 25 cubic ft. of air per hour. He completely consumes the oxygen in 5 cubic ft.

All our medical authorities, after explaining to us that this or that or the other is not the dangerous ingredient in vitiated air, are careful to safeguard themselves by stating that all they have said does not operate as an argument in favour of diminishing the maximum degree of carbonic impurity to be allowed in breathing air.

I hope I shall not be taken to be committing the absurdity of depreciating the achievements of physiology, that is far from my intention. I yield no man in my profound admiration for what has been done in this direction. I wish merely to emphasise the extraordinary difficulty I had almost said the impossibility of obtaining any reliable results on a matter of such difficulty as this.

Our scientific solution of this root problem is to provide him with 200 times as much at least, or, for good ventilation, with 1,000 times as much. If in any other branch of engineering your authorities demanded a factor of safety of from 200-1,000, what conclusion would you draw as to the state of knowledge in that branch?

But we may be told that fresh air is cheap enough; we can get any amount of it for nothing, and we at least know with a sort of wavering uncertainty that if we do use plenty of it the result is good. But is fresh air so cheap?

It must not be forgotten that whether it is good for them or not people will not have plenty of fresh air unless it is warmed, and

unless it is introduced without draught, and that to warm in the most economical way 16,000 cubic ft. of fresh air costs roughly 1 lb. of coal.

If every person in this country, where the climate is mild, were supplied even with 2,000 cubic ft. of fresh air per hour, duly warmed according to the latest Board of Guardians' notions of health and comfort for paupers, it would cost some ten or twenty million tons of coal every ordinary winter, even in a mild climate like this. Every human being gives off per hour a quantity of heat which may be set down as roughly 400 450 B.T.U. This heat is carried away along with the other heat in the ventilating air. We are told even that one of the objects of ventilation is to carry this heat away when all the time we are flinging into the air additional heat, which is also enormously expensive in the mass, and which is also wasted.

Observe the extreme want of logic in the whole proceeding. The heat in the air as such serves no useful purpose; the vast proportion of it which is blown through the room serves no useful purpose beyond that of diluting to a certain arbitrary degree certain products which medical authorities tell us are not in the least deleterious, and all this in order to mask the operation of certain products which appear to be unrecognised, but which certainly are deleterious, for there can be no question that expired air is deleterious to breathe.

What the engineer wants to know is precisely this: If a thousand persons are enclosed in an air-tight room, which is maintained at, say, 60 deg. by some means; if we remove 900 cubic ft. of CO₂ per hour from the air of the room, and 70 lb. of moisture, and restore 1,000 cubic ft. of oxygen to it, and remove 400,000 thermal units; and if some means can be found to remove the organic smells and the dust, "will the air be kept in a perfectly fit state to breathe? Will it, in fact, be as good as the outside air? If not, why not? And what else is necessary?"

It is in order to avoid—I will not say shirk—the solution of this and similar problems that we are compelled at present to adopt the device of flooding the interior of a building with vast quantities of fresh air. At any rate, this is the best solution that has been hitherto devised, expensive though it is. At present, the problem is not really acute, because the world's coal supplies are still adequate, but the problem will assume another shape when this is not the case."

Professor Cormack proposed a vote of thanks to Sir Aston Webb for presiding.

Sir James Crichton-Brown,

in seconding, said that Dr. Leonard Hill had been making certain experiments on human beings, and his conclusions seemed to point to the fact that we attached too much importance to the carbon dioxide in the air, and that larger quantities can be inhaled without any detriment whatever. Temperature and humidity brought sickness, nausea, and fatigue; what we wanted was a cool, dry atmosphere. If, as the lecturer had shown, microbes increased according to the age of houses, cathedrals and mansions would need to be pulled down and rebuilt every twenty years. The problem had been complicated by past Budgets. But under previous Budgets there had been a window tax, yielding two millions per annum, under which every skylight and every zinc plate for ventilation was liable to taxation. Architects built houses with as few windows as possible, and in Edinburgh a number of buildings were erected without windows at all, lighted entirely by artificial light.

The resolution was carried, and Sir Aston Webb, in responding, said that before architects could do much they must have some definite data from scientific men on which to found a scheme of ventilation. The engineer wanted to lay down his scheme and get the architect to put his buildings round it, but that was not always possible.

NEW COAL EXCHANGE, SWANSEA.

This building is to be erected at a cost of 20,000*l.*, from the designs of Mr. C. T. Rother, architect, of Swansea. The designs were selected by means of a competition.

TRIBUNAL OF APPEAL UNDER THE LONDON BUILDING ACT.

London and Westminster Bank, Ltd., v. London County Council.

The Tribunal of Appeal under the London Building Act (Mr. A. A. Hudson, Chairman) sat at Caxton Hall, Westminster, last Friday to give their decision in the appeal of London and Westminster Bank against the decision of the Superintending Architect regarding the building lines of Wimbledon Park-road and Augustus-road. Mr. Courtham represented the appellants, and Mr. Duddy the respondents.

The facts of the case, which occupied greater part of two days, and was reported in the *Builder* of October 20, were as follows: The bank bought a piece of land some years ago at the corner of Wimbledon Park-road and Augustus-road, Southfields, in view of future development of the district, there being at that time no buildings in the road between Southfields Station and the County boundary. The Bank Company heard that some villas were going to be erected in Augustus-road, and to prevent any building line being established to their detriment they commenced the building of their bank premises, and proceeded very slowly, got as far as the first story, then stopped work, owing to the action of the Superintending Architect, who fixed a building line for both Wimbledon Park-road and Augustus-road. The Superintending Architect took existing buildings at Seymour-road as a basis for determining the building line, which was nearly a mile away, as determining the building line of Wimbledon Park-road, and he took the villas nearly erected in the Augustus-road at the time of his visit as the building line of Augustus-road. Further, it was alleged that in determining the building line of Wimbledon Park-road, he took account of a bend in the road, where the bank premises were situated, and the result of the fixing of the two lines was to practically destroy the bank site. The contention of the appellants was that the whole of Wimbledon Park-road ought not to have been taken into consideration in fixing the line, and, further, that the bank was erected first in Augustus-road, and thus a building line was set up. The Council held that the Superintending Architect was right in taking the whole road into account, and that there was no reason why that part from Augustus-road to the County boundary should be deemed to be a different part of the road. With regard to Augustus-road, the contention was that the Superintending Architect was bound to take into account the buildings already there when he visited the place, and these buildings were the villas erected at the same time that the bank was being erected. There was no conflict of evidence as to whether the bank or the villas were erected first.

The Chairman said the Tribunal found there was no general line of buildings existing between points A and B on the architect's certificate plan. These points really were between Augustus-road and the beginning of the property of the railway company. With regard to Augustus-road, they found there was no general building line except between points marked A and B, which was between Albee-road and the beginning of the bank premises. The effect of the decision was that there was no building line where the bank premises were erected.

Mr. Munroe asked that, as the bank had succeeded in both particulars, they should be awarded costs.

The Tribunal decided that, taking all the circumstances into account, no order should be made as to costs.

London County Council v. Corbett (now Lord Rowallan).

On Friday last the Tribunal of Appeal sat at Caxton Hall, Westminster, to hear the parties in the matter of an application to the London County Council with reference to the order of the Tribunal, dated August 1906, and the undertaking given by Mr. Cameron Corbett (now Lord Rowallan) respect to the formation of streets on the St. German's Estate, leading out of the southern site of Downhill-road. Mr. Corbett represented the London County Council, and Mr. Macmin the owner of the St. German's Estate.

Mr. Walsh explained that on August 1905, the Tribunal made an order preventing the owner of the St. German's Estate from erecting any buildings on the estate for a period of five years from building on certain portions of their estate so as to enable, if it was thought proper, for roads to be made giving communication with the Forster Estate, which adjoined St. German's Estate. Mr. Macmin took the preliminary objection that the covenant which Lord Rowallan entered into was dead. The order of the

al said that the County Council should liberty at any time before September 29, to apply to the Tribunal for an extension of order, whilst Lord Rowallan entered covenant not to build on the portions estate mentioned before September 29. That date was passed, and he contended the covenant was dead and could not be enforced.

Chairman said notice was given by the Council on September 13, and he over the objection.

Walsh, by means of plans, explained to the Tribunal how the two estates were laid out and asked that the order restricting building on the points shown on the St. German's map should be extended for a period.

Alfred Milwood, from the department Superintending Architect of the London County Council, said he visited the estate on September 6. He explained the condition of with regard to the roads on the Forster

overing the Chairman, witness said that had been sanctioned on the Forster and agreed upon by the parties, and was a legal obligation to make it, which gave communication between the estates. Chairman said that being so they did not want to go into the state of the road, was plenty of power under the London County Act to deal with roads.

Macmin said that all the roads witness dealing with were on the Forster Estate or on his.

Walsh said that was his difficulty. It had been so slow on the Forster that they had no guarantee that the would be made. Hence they asked for extension of the order for a time.

Walsh expressed the opinion that the on the St. German's Estate should be made for the present until the roads on the Forster Estate were made.

Stewart (a member of the Tribunal) seemed as if the County Council wanted to put pressure on one estate, to get to bring pressure on the other estate to make it.

Macmin: Yes, and over whom we have control.

Chairman said the idea of holding this open seemed to be to make the Forster go quicker.

Macmin said that the County Council sanctioned a group of roads on the Forster Estate made no provision or agreement as to construction of the roads to take in the of land reserved under the order of

Walsh said that there was an appeal the Forster Estate to the Tribunal in 1907, the case was adjourned for the express of negotiations taking place between the parties, the joining up of these

The case had never been resumed. or considerable discussion with regard to the appeal of the Forster Estate in had reference to dealing with the land

ed by the order. Chairman said they had better leave matter out and confine themselves solely question of whether the roads sanctioned the Forster Estate did afford such comation between the estates as would make strictions on the land on the St. German's unnecessary.

Ernest Van Putten, Engineer and Surveyor to the Lewisham Borough Council, said his view was that the residents in Birkwood and Balloch roads, and other roads on St. German's Estate, would suffer great inconvenience in getting to Bellingham and Key Stations unless they got a further unication.

J. Slater (a member of the Tribunal) had even if they retained the restriction, power had either the Council or the Tribunal to say that a road should be made? Macmin said he thought by negotiation with Forster Estate they might get over the difficulty.

Slater said that was what they tried to do years ago. Macmin said at that time the Forster Estate absolutely against making any communication with the Council or the Tribunal at all. Now, however, they were making roads, and they might be induced to a third to communicate with Muir Kirk-

Macmin said he had the Surveyor of Forster Estate present, who would say his had absolutely no intention of making a third road. They did not want communication with the Council or the Tribunal, as they feared their property was superior to that of St. German's Estate. After five years ought they ought to be able to wind up estate. He submitted that the communication which were wanted five years ago had made on the Forster Estate.

or further discussion between the parties, chairman said the Tribunal felt that the

St. German's Estate owners ought to have the opportunity of winding up their estate, and they suggested that the parties should try to arrive at a settlement.

Ultimately the case was adjourned for the following suggestions to be considered:—The St. German's Estate to be at liberty to make a road in continuation of Muir Kirk-road up to the estate boundary, although such road would be a *cul de sac*. The St. German's Estate to be at liberty to build houses fronting such road, and the restriction on the continuation of Ardock-road to be not extended; these suggestions to be the subject of agreement between the Council to the estate, or to be made the order of the Tribunal.

Mr. Macmin said if they agreed they would come before the Tribunal with the minutes of an order.

No order was made as to costs.

WESTMINSTER CITY COUNCIL.

At the fortnightly sitting of the Westminster City Council, on October 26, the following, amongst other matters, were done with:—

Widening of Argyl-place.—The Improvements Committee reported having considered communications from H.M. Commissioners of Woods and Forests to the effect that it will shortly be necessary to settle definitely designs for the rebuilding of Crown property in various parts of Regent-street, and as a result the Committee considered that the widening of Argyl-street at its junction with Regent-street should be now decided upon, as such a widening is likely in the future to lead to the development of Great Marlborough-street into an alternative thoroughfare to Oxford-street, between Bond-street and Soho. They therefore recommended that the Council should purchase from the Crown 1,107 sq. ft. of land for 16,500l., which will allow the widening of Argyl-place, between Regent-street and

King's-street, to 60 ft. Mr. G. W. Lawrence pointed out that the matter wanted careful consideration, because great as would be the boon in making the alternative thoroughfare, still it must be realised that the rent of the roadway would probably remain narrow for several generations. Mr. H. Simm pointed out that the price asked was an enormous one, and practically represented 800l. per foot for 20 ft. of Regent-street. After further discussion the recommendation was agreed to.

Widening of Pimlico-road.—The same Committee stated that the Highways Committee had asked them to consider the question of improving the junction of Commercial-road and Ebury Bridge by the removal of No. 1, Pimlico-road. At the present time the Committee did not feel justified in materially altering the property, which is occupied by the Council. They are of opinion, however, that the site should be dealt with by a comprehensive rebuilding scheme, and that in the event of such a scheme being formulated, consideration should be given to the carrying out of a suitable improvement of the site. In the meantime they agreed that the pavement should be set back 3 ft.

LAW REPORT.

KING'S BENCH DIVISION.

(Before Mr. Justice COLLIERIDGE.)

Alleged Dangerous Premises at Islington.

Sugden v. City of London Brewery Company.

THIS case was heard last week, an action by the plaintiff to recover possession of the Island Queen public-house, Hanover-square, Islington, together with the outbuildings and offices. It raised the question whether the tenants of public-house premises with outbuildings and stables were liable to rebuild a portion of the premises pulled down in conformity with a breach by the tenants of the covenants to repair. In May, 1910, the stables had fallen into such a state of disrepair that a notice was served upon the tenants, under the Conveyancing Act, requiring them to do the necessary repairs. They refused, and the question was whether upon the facts, which were really undisputed, the landlord was right in seeking to recover possession. The indenture was dated September 20, 1894, and the covenant provided for proper repair of the premises. The defendant pleaded that the stables were originally of defective construction, and that it was due to that fact that they had fallen into a dangerous condition. They further pleaded that the continuance of the covenant

became impossible in consequence of the notice of the County Council.

The defence (went on Counsel) was evidently based upon the application of the case to that of *Lister v. Lane*. By *Lister v. Lane*, if one leased to a man a house which at the time of the demise was so faultily constructed that it was bound to tumble to pieces before the expiration of the term under the covenant to repair, then the man was not obliged to rebuild. He (Counsel) submitted that *Lister v. Lane* only applied when the whole of the subject-matter at the time of the demise was in the condition which brought about the state of things complained of. Where only a subsidiary portion of that which was demised had fallen into disrepair, *Lister v. Lane* could have no sort of application. The stables in this case were a subsidiary part of the whole property demised. The plaintiff did not accept the defendant's view that the dangerous condition of the stables was due to the settling of the foundation. He attributed the dangerous condition to a weight being placed on the floor of the loft greater than the floor was calculated to bear, thus causing the walls to be thrust out of the perpendicular. Undue weight had been placed upon the rafters. This defect might have been repaired if they had been attended to in time.

Evidence was called for the plaintiff in support of the contention that the dangerous condition of the stables was attributable to undue weight having been placed on the floor of the loft.

On behalf of the defendants evidence was called to prove that the ground on which the stables were erected was made up, and that the foundation of the building was bad.

Without hearing Mr. Fox on the law, his Lordship gave judgment for the defendants. He came to the conclusion that the walls were erected on a bad foundation, and that the roof was of defective and faulty construction. If he was right in the view that these were the causes which produced the mischief, then they did not come within the provisions of the covenants of the lease, and it did not lie on the tenants to make good the mischief caused by those two defects.

Judgment was accordingly entered for the defendants, with costs.

LONDON COUNCILS.

Acton.—The Works Committee have decided that the work of erecting a school for 860 children should be proceeded with.

Bethnal Green.—With regard to the alterations to be carried out at the Public Baths and Washhouses, where the committee-room and superintendent's office is to be converted into eleven men's first-class baths, the following tenders have been accepted:—Messrs. Measures Brothers, Ltd., steel girder and two steel stanchions, 12l. 1s. 7d.; Messrs. Doulton & Co., Ltd., eleven porcelain baths and fittings, 155l. 7s. 6d.; Messrs. Ellis, Geary, & Co., terrazzo work, partitions, and flooring, 75l. 19s. 3d.; Messrs. J. Wouter Smith, Gray, & Co., calorifier, 71l. 10s.

Croydon.—An offer of 4,200l. has been received from Dr. Carnegie for the erection of a public library at Thornton Heath. The following plans have been passed:—Messrs. Drake Bros., Shirley, near Croydon, ten houses, Silverleigh-road; Mr. R. C. Palmer, Sherwood-road, five houses, Elm Grove road.

East Barnet Valley.—The Surveyor has been instructed to report as to sites for public conveniences at the top of Station-road and near the Arch, East Barnet-road. Paving works are to be carried out in Bulwer-road, Leicester-road, Station-road, Lytton-avenue, and Victoria-avenue.

Hammermith.—The Council have decided to raise no objection to the proposal of the managers of the St. Stephen's Roman Catholic Schools, Rylett-road, Hammermith, to enlarge such buildings. The tender of Plascom, Ltd., Wolverhampton, has been accepted for paving the carriageway of Wells-road with 2-in. old macadam mixed with Plascom for first layer, and 2-in. of new granite gouted with Plascom for the second layer, at 5s. 6d. per yard super. A plan has been passed for the erection of a billiard hall on the site of Nos. 150, 152, and 152A, King-street, for the Temperance Billiard Halls, Ltd.

Henwell.—The Surveyor has been instructed to prepare estimates for the wood-paving of the margins of Uxbridge-road, from Boston-road to Church-road. Instructions have been given to the Surveyor to prepare plans and estimates for making-up Cowper-road.

Hendon.—Tenders are to be invited by the Rural District Council for the construction of an observation ward at the Isolation Hospital. The following plans have been passed:—Mr. W. Chems Grove, fifteen houses, Bolton-road, Pinner; Mr. A. W. Marshall, five houses, West End-lane; Mr. H. R. Matthews, garage,

The Broadway, Harrow Weald; Mr. R. Murray, offices and transformers, 30, Manor road, Edgware, for the North Metropolitan Electric Light Company. Plans have been lodged by Messrs. C. & E. Steele for five houses, Longley-road, Pinner.

Heston and Isleworth.—The following plans have been passed: Messrs. Fuller, Smith, & Turner, alterations to Cross Lances, Hounslow, and to the Swan, Isleworth; Mr. W. H. Ansell, additions to Wavertree, St. Peter's-road, St. Margaret's; Messrs. Nowell Parr & Kates, alterations to Lord Clyde and Duke of Cambridge, Hounslow, the Victoria Tavern and Red Lion, Isleworth, and the Jolly Farmer, Hounslow. Messrs. Smee & Houchin have lodged a plan for a chapel in Staines-road, Hounslow.

Holborn.—The Council have agreed to the application of Mr. J. Sawyer, on behalf of Messrs. A. W. Gamage, Ltd., for permission to extend the existing subway under Robin Hood-yard. The Borough Surveyor has been instructed, owing to a subsidence of the roadway in Denmark street, to report as to the necessity of relaying the whole of the roadway.

Hilford.—Workshops are to be erected at the electric station at a cost of 375*l*. The following plans have been passed: Messrs. J. D. & S. J. Mould, hall, Richmond-road; Mr. E. T. Dunn for Mrs. Stroud, twenty-four houses, Farnham-road; Mr. A. T. Haines, for Mr. C. G. Rooke, four houses, Bradford-road; Mr. G. Smith, five houses, Brook-road; Mr. J. Derrett, four houses, Abbey-road.

Midlesex.—Land situated in the Edgware-road adjacent to the Silk Bridge over the Silk Stream arm of the Brent reservoir is to be purchased from the Ecclesiastical Commissioners by the County Council for 600*l*, as the site for the new court-house, Hendon. A site in Mayfield road, Stroud Green, is also to be purchased from the Hornsey Town Council for 8,222*l*, for the erection of the Stroud Green High School for Girls.

Poplar.—Improvements are to be made to the public electric lighting of the Borough, and all gas lamps are to be replaced with incandescent electric lamps as soon as practicable after mains have been extended to those thoroughfares where only gas is now available. In connexion with the extension of the generating-station buildings, the Surveyor is to carry out excavations for, and the construction of, foundations in connexion therewith, at an estimated cost of 2,726*l*. Tenders are to be invited for the erection of the superstructure, the Borough Surveyor being allowed to compete.

St. Pancras.—The tender of the London Asphalt Company, Ltd., has been accepted for relaying part of the west side of Brunswick-square with 2-in. asphalt at 8*s*. per yard super, and free maintenance for two years, and thereafter at 6*d*. per yard super, per annum for maintenance for ten years.

Southwark.—In connexion with the widening of Hain-pole, 1,200 ft. of super. ft. of land had been given up to the public, and the Council have decided to pave this, including the resetting of the kerb, laying new footway paving and completing the asphalt of the street throughout, at an estimated cost of 1,371*l*. A deputation has been appointed to wait upon the Public Control Committee of the London County Council to put before them the question as to the necessity of erecting a new mortuary and coroner's court to replace the one situated at Collier's-rows, which is of faulty construction and too small for present requirements.

Stepney.—Electricity mains are to be extended to Parnham-street, Limehouse; Skidmore-street, Mile End Old Town; and Pennington-street, St. George-in-the-East. The Borough Engineer has been instructed to carry out the work of reconstructing the existing sewer in Diggon street, Mile End Old Town, at an estimated cost of 140*l*.

Wandsworth.—Tenders are to be invited for paving the following new streets: Cotford-street, Tooting, between Okeburn-road and Church-lane; Valley-road, Streatham, between Sunnyside road and entrance to Messrs. Curtis Brothers' dairy. Plans have been passed for Mr. M. W. Hudson for additions to Price's Bakery, Garratt-lane, Springfield; also for Mr. F. J. Meech for four houses in Chilterton-road.

Watford.—The Rural District Council has accepted the tender of Messrs. King & Son, at 120*l*, for sewer construction work.

OBITUARY.

Mr. J. L. Clemence, J.P.

It is with regret that we record the death of Mr. John Louth Clemence, J.P., F.R.I.B.A., who has just passed away at his residence, 14, Marine-parade, Lowestoft. Mr. Clemence, who was eighty-nine on August 29 last, commenced his work very early in life—at fourteen years of age. He

was first with Professor C. R. Cockerell, and worked with him in his office at the Bank of England. Later on he joined Sir Morton Peto, and had a large share in his schemes for laying out and developing Lowestoft. He planned practically the whole of that part of Lowestoft, says the *Lowestoft Journal*, which comprehends the Esplanade, Wellington-esplanade, and Marine-parade, and later on he was responsible for the most important buildings that were erected. Chief amongst these is St. John's Church, the Wesleyan Chapel in High-street, and the Town Hall as it stood before being improved and enlarged some years ago. He superintended the restoration of St. Margaret's Church in 1871. He was also architect for Lowestoft Hospital. Some of the pupils of the deceased were Sir J. Wolfe Barry, K.C.B. (engineer of the Tower Bridge), Edward Barry, the late Mr. Boardman, architect, of Norwich, and Mr. S. P. Pells. Mr. Clemence was a captain in the 11th Suffolk Volunteers. He took a lively interest in the public affairs of Lowestoft. He was a member of the old Improvement Commission, and later on he became an Alderman of the Town Council, a position he held till 1894. He served the office of Mayor in 1886-1887. During the time Mr. Clemence was on the Town Council he did valuable work for the borough, and he was a keen critic of all that went on around him. When he retired from the Council in 1894 he continued to still act the part of critic, with a ready wit, and an aptitude for verse-making. Mr. Clemence married, but his wife predeceased him some years ago. The funeral was attended by the Mayor (Mr. T. E. Thistle), members of the Corporation and of the magistracy.

Mr. George Wise.

We regret to announce the death of Mr. George Wise, who was found dead in his office-chair at Billingsgate Market on the evening of October 25. At the subsequent inquest held by Dr. Waldo, the City Coroner, it was found that death was due to heart failure. Mr. Wise was recently engaged as Clerk of Works for the Corporation of the City of London upon works at the Guildhall, Billingsgate Market, and Leadenhall Market, under Mr. Sydney Perks, the City Surveyor. He supervised the erection of the Leicestershire and Rutland County Asylum, under Messrs. Eyraud & Pick; the Kent County Asylum, Chatham, for Messrs. John Giles & Gough; and, under Mr. George T. Hine, the Claybury and Bexley Asylums, for the London County Council, and the East Sussex Asylum. He was one of the oldest members of the Incorporated Society of Clerks of Works, and throughout a long career was much esteemed and respected by his employers and by all who had business relations with him.

TRADE CATALOGUE.

Messrs. Teuten & Co., Ltd., iron founders, of 221, Upper Thames-street, London, E.C., forward us their latest illustrated supplementary catalogue and price list of new designs in metal registers, ranges, bath-sinks, etc. The "Ideal" portable copper and the "Popular" washhouse boiler (for gas) are useful specialties which should find a ready market. Messrs. Teuten also supply ornamental cast and wrought work for verandahs, external stairs, and builders' ironmongery of every kind.

PATENTS.

APPLICATIONS PUBLISHED.

17,093 of 1910.—Owen Jones Owen: Utilisation of slate refuse and manufacture of artificial slates or tiles therefrom.
22,873 of 1910.—Christopher Richard Ford: Flashlight openers and the like.

23,754 of 1910.—Charles Leslie Newland: Flushing cisterns.
30,215 of 1910.—Davy Brothers, Ltd., and Thomas Edmund Holmes: Overload relief apparatus for cranes.

1,088 of 1911.—William Smith Duggan: Back-draught-preventing chimney-pot and ventilator.

1,174 of 1911.—James Damrel Prior: Domestic firegrates.

4,284 of 1911.—Charles Minot March: Sliding and swinging windows.

12,113 of 1911.—Francis Feyens and Armand van de Poel: Pneumatic or hydraulic hammers.

12,562 of 1911.—Arthur Edward Towell: Flushing cisterns.

12,889 of 1911.—Otto Wenzel: Bucket elevating mechanism.

15,013 of 1911.—Emil Abraham Kling: Portable derricks.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

October 19.—By T. P. & A. SAUL. Morton, Lincs.—Agricultural estate, 1,287 acres, *f*.

By EDWARD WALKER. Snaithon, Yorks.—Cliffe Farm, 104 a. 1 r. 4 p., *f*. By CHESHIRE, GIBSON, & CO. Quessett, Cheshire.—Great Barr Hall and 682 acres, *f*.

October 20.—ALFRED MANSELL & CO. Llandrinio, Montgomery. Tre-Derwen Farm, 79 a. 1 r. 1 p., *f*. Alderbury, Wiltshire. Enclosures of pasture, 22 a. 1 r. 13 p., *f*.

October 23.—By ALEX. ROBINSON. Camberwell.—10, Camberwell-rd. (s.), *ut*. 59 yrs., *g*. 7*l*. 10*s*. p., *f*. By WINTERBON & SONS. Nuneaton, Warwick. Flour mills, *f*.

By BRADSHAW, BROWN, & CO. Stratford.—18 and 20, Hatfield-rd., *ut*. 41*l*. 12*s*.

81 and 83, Chatsworth rd., *f*. w. 46*l*. 16*s*. Leytonstone.—83, 87, and 88, Fairlop-rd., *ut*. 76 yrs., *g*. 12*l*. 12*s*. w. 6*s*. 6*d*.

74, 75 and 88 (even), Warwick-rd., *ut*. 69 yrs., *g*. 38*l*. 10*s*. w. 21*s*. 17*s*.

By DEBBENHAM, TOWNSON, RICHARDSON, & CO. Tooting.—1 and 154, Mitcham-rd., *ut*. p. 39 and 91, Bickersfield-rd., *f*. w. 2*l*. 12*s*.

By LINNETT, LANE, & BETTREDGE. Willenden.—1 and 2, Haines Cottages, *f*. w. 31*l*. 4*s*.

By S. & G. KINGSTON. Finchbeck, Lincs. Nunery Farm and arable land, 424 a. 3 r. 20 p., *f*.

Croftree Farm, 35 a. 2 r. 28 p., *f*. Arable land, 99 a. 2 r. 3 p., *f*.

Moulton, Lincs.—Pasture land, 8 a. 2 r. 25 p., *f*. By JOHN HOLLINGSWORTH. Fulham. 24, Chessilton-rd., *ut*. 69 yrs., *g*. 8*l*. *er*. 40*l*.

October 25.—By DONALDSON & SONS. Dalston.—94 to 106 (even), Shrubland-gr., *ut*. 38 yrs., *g*. 31*l*. 5*s*. y. 2*l*. 21*s*.

Wandsworth.—Westbury-st., 167 a. 20*r*. 53 yrs., *f*.

By HAROLD GIFFIN. Battersea.—15, Tipton-rd., and 147 a. 2*s*. 6*d*. *ut*. 54 yrs., *g*. 1*l*. 8*s*. w. 3*s*. 10*s*.

By LAMBERT & SYMES. Breckley, Kent.—Moultons Estate, 260 acres, *f*.

By BRUSHWOOD & CO. Gravesend, Kent.—120, Old-rd., West, *f*. y. 24*l*.

Pimlico. 35, Denbigh-st., *ut*. 191 yrs., *g*. 10*l*. p. Caledonian-rd.—214, 220 and 222, Copenhangen-st., *ut*. 43 yrs., *g*. 1*l*. y. 11*s*. 16*s*.

7, Carlisle-st., *ut*. 30 yrs., *g*. 4*l*. w. 1, 2, and 3, Offord-st., *ut*. 27 yrs., *g*. 9*l*. y. 7*s*. 12*s*.

99, Bonnam-rd., *ut*. 48 yrs., *g*. 8*l*. y. 4*s*. 27, Dennis-st., and 35, Carlisle-st., *ut*. 30 yrs., *g*. 4*l*. y. and w. 67*l*. 4*s*.

High Burnet—Bedford-rd., Radcot, and Westbourne, *f*. y. 30.

By J. ANTHONY TRYTHALL. Beckenham.—69, Kent House-rd. (s.), *ut*. 56 yrs., *g*. 9*l*. y. 30*l*.

By DONALDSON & SONS. Tottenham Court-rd.—59, Whitfield-st., *f*. y. 56*l*.

Kennington.—9, Rutley-gdns., *ut*. 56½ yrs., *g*. 12*l*. 12*s*. y. 3*l*.

By THOMSON & CO. Ravenstonedale, Westmorland.—Farms, etc., 743 acres, *f*.

By HENRY HEYDICK & CO. Birmingham, Warwick.—23 and 27, Great Lister-st., *ut*. 20 yrs., *g*. 6*l*. 8*s*. y. 62*l*.

Edginstown, Warwick.—46, 48, 50, and 52, Gillott-rd., *ut*. 80 yrs., *g*. 17*l*. 1*s*. y. 11*s*.

October 26.—By CHAS. CANEY. Peckham.—18, Edith-rd., *ut*. 53 yrs., *g*. 7*l*. *er*. 40*l*.

By WM. CLARESON. Dulwich.—4, Park-rd., *f*. p.

By FRANK JOLLY & JAMES. Brixton.—25 and 27, Raeburn-st., *ut*. 63 yrs., *g*. 13*l*. w. 10*l*. 4*s*.

Hackney. 32, Christie-rd., *ut*. 33 yrs., *g*. 4*l*. 10*s*. y. 26*l*.

East Ham. 60 to 72 (even), Goldsmith-av., *f*. w. 200*l*. 4*s*.

Stepney.—26, 38, and 60, Urmston-st. (s.), *f*. y. 40*l*.

By NEWSON & SHEPHERDS. Bowes Park.—8 to 16 (even), Russell-rd., *ut*. 67 yrs., *g*. 24*l*. w. 14*l*. 10*s*.

Holloway.—12, Clifton-rd., *ut*. 31 yrs., *g*. 6*l*. p. 21, Wedmore-gdns., *ut*. 60 yrs., *g*. 6*l*. y. 30*l*.

Canonbury.—17, Marquess-rd., *ut*. 34 yrs., *g*. 10*l*. p. Holloway.—81, Parkhurst-rd., *ut*. 11 yrs., *g*. 8*l*. 5*s*. y. 30*l*.

By STIMSON & SONS. Tooting.—57 and 59, Moffat-rd., *f*. w. 36*l*. 8*s*. 74 and 76, Defoe-rd., *ut*. 55 yrs., *g*. 7*l*. w. 5*s*. 10*s*.

Merton.—171 to 179 (odd), High-st., *ut*. 25 yrs., *g*. 6*l*. 10*s*. w. 10*l*. 5*s*.

Beiton.—79, Helidon, *ut*. 78 yrs., *g*. 7*l*. y. 40*l*.

RECENT SALES.—Continued on page 523.

or some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments xvii.; Auction Sales, xxiv. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

Competitions.

ENGINEERING, etc.—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 17.—**Reading.**—**OPEN-AIR BATH.**—Construction of a concrete bathing-place, with campheathing, footbridges, buildings, galvanised-iron screen fences, and other works at Coley, Reading. Drawings, specification, and general conditions seen, and form of tender from Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

NOVEMBER 22.—**Swindon.**—**ENGINE, ETC.**—Erection of a 250-kw. Diesel oil-engine, generating set, accessories, switchgear, etc. Specification and form of tender from Mr. A. Dimmack, A.M.Inst.M.E., Electricity Works, Swindon, on deposit of 11. 1s.

FURNITURE, PAINTING, MATERIALS, etc.

NOVEMBER 6.—**Chorley.**—**DECORATING, ETC.**—Alterations, furnishing, and decoration to Board-room, etc., at the Union Workhouse. Specifications and drawings at the Union Offices, 14, High-street, Chorley. Mr. R. E. Aspdon, Clerk to the Guardians.

NOVEMBER 6.—**Heywood.**—**PAINTING, ETC.**—For painting and decorating the technical school. Specification at the Education Office. Deposit of 11. 1s. Mr. G. G. Boucher, Town Clerk, Municipal Buildings, Heywood.

NOVEMBER 7.—**Macclesfield.**—**PAINTING.**—For the internal painting and decorating of the recently erected private patients' villa. Specification, Clerk to the Asylum, County Asylum, Parkside, Macclesfield.

NOVEMBER 7.—**Selby.**—**FLOORING.**—For flooring over swimming bath at the Public Baths. Plans seen, and specifications and quantities from Mr. Bruce Gray, F.R.S.Edin., Newlands, Selby.

NOVEMBER 8.—**Redruth.**—**PAINTING, ETC.**—For internal decoration at the police-station. Mr. Albert E. Brookes, County Surveyor, Truro.

NOVEMBER 9.—**London.**—**FITTINGS.**—For supply of lavatory fittings to post-offices. Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

NOVEMBER 13.—**Birmingham.**—**PAINTING.**—For cleaning, painting, and decorating the interior of the Parish Offices, Edmund-street, Newhall-street, and Cornwell-street. Specifications seen, and particulars from Messrs. W. H. Ward, architects, Paradise-street, Birmingham.

★ NOVEMBER 16.—**London.**—**STORES.**—The London General Omnibus Company, Ltd., invite tenders for supply of various stores during 1912. See advertisement in this issue for further particulars.

★ NOVEMBER 18.—**London.**—**STORES AND MATERIALS.**—The Port of London Authority invite tenders for supplies of stores and materials during the twelve months ending December 31, 1912. See advertisement in this issue for further particulars.

NOVEMBER 21.—**Grimsby.**—**PAINTING.**—For painting and cleaning interior and exterior of Strand-street School. Specifications at the Education Offices, Mr. D. Chandler, Clerk, Education Offices, Grimsby.

N.D.—**Rotherham.**—**PAINTING, ETC.**—For painting, etc., of exterior and interior of the buildings at the Masbro' Cemetery. Borough Engineer, Town Hall, Rotherham.

ROADS, SANITARY AND WATER WORKS.

NOVEMBER 6.—**Hastings.**—**SEWER.**—For the laying of about 1,140 feet of 6-in. stoneware pipe sewer. Drawing and specification seen, and form of tender at the office of the Borough Engineer, Mr. F. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

NOVEMBER 8.—**Erith.**—**STREETS.**—For private street works. Plans seen, and specifications and quantities from the Surveyor's Office, Bexley-road, Erith. Deposit of 11.

NOVEMBER 8.—**Twickenham.**—**STREET.**—For sewerage forming, levelling, paving, channelling, metalling, and making good Northumberland-row. Plan and specification seen, and quantities from Mr. Fred W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham. Deposit of 11. 1s.

NOVEMBER 9.—**Chisle.**—**ROAD.**—For the widening of a portion of the Stockport-road. Plans seen, and specification and quantities from Mr. E. Sykes, Council Surveyor, Council Offices, Chisle, near Manchester.

★ NOVEMBER 9.—**London.**—**LAVATORY FITTINGS.**—The Commissioners of H.M. Works and Public Buildings invite tenders for the supply of lavatory fittings to post-offices. See advertisement in this issue for further particulars.

NOVEMBER 10.—**Hale.**—**ROAD.**—For the making-up of Leigh-road. Plans and specifications seen, and quantities, on deposit of 11. 1s. from the Council's Surveyor, Mr. T. Blagburn, Council Offices, Ashley-road, Hale, Cheshire.

NOVEMBER 13.—**Bromley.**—**ROADS.**—For sewerage, levelling, paving, metalling, channelling, and making good the roads in the Parish of Orpington. Plans and sections seen, and specifications from the Council's Surveyor, Mandlen House, Sidcup-hill, Sidcup, Kent. Deposit of 11. 1s.

NOVEMBER 13.—**Ilford.**—**ROAD.**—For making-up Park-avenue. Plans and specification seen, and quantities, on deposit of 21. 2s. from Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Ilford.

NOVEMBER 13.—**Ilford.**—**ROAD.**—For making-up Norman-road. Plans and specification seen, and quantities from Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Ilford. Deposit of 21. 2s.

NOVEMBER 14.—**Lewes.**—**MATERIALS.**—For supply of materials. Forms of tender from Mr. F. J. Wood, A.M.Inst.C.E., County Surveyor, County Hall, Lewes, Sussex.

NOVEMBER 14.—**New Malden.**—**ROADS.**—For

various road works for the Maldens and Co. Urban District Council. Drawings seen, specifications and forms of tender from Engineer and Surveyor, Mr. R. H. J. A.M.Inst.C.E., Council Offices, New Malden, Deposit of 31. 3s.

NOVEMBER 14.—**Southall.**—**PAVING, ETC.**—paving, etc., at Featherstone-road and Vauxhall. Plans and specifications seen, and quantities from Mr. R. Brown, A.M.Inst.C.E., Engineer and Surveyor, Public Offices, Southall.

NOVEMBER 14.—**Wellington.**—**SEWER.**—construction of a 9-in. stoneware pipe sewer. Plans and particulars from the Council's Surveyor, Mr. George Riley, 14, Walker-street, Kingston, Salop.

NOVEMBER 16.—**Chelmsford.**—**GRANITE.**—For supply of about 1,000 tons of Guss granite and granite chippings. Forms of tender from the Borough Surveyor, 16, London-chelmsford.

NOVEMBER 16.—**Wallington.**—**ROAD.**—making-up Hall-road. Plans and specifications from the Council's Surveyor, Mr. R. M. C. F.S.I., Katharine-street, Croydon. Deposit of 11. 1s.

NOVEMBER 16.—**Wombwell.**—**SEWER.**—For relaying of about 300 lin. yds. of 12-in. iron pipe sewer and about 480 lin. yds. of stoneware pipe sewer, in Station-lane, and specifications seen, and quantities, on deposit of 11. 1s. from Mr. W. Quest, the Surveyor to the Council, Town Hall, Wombwell.

NOVEMBER 21.—**Acton.**—**ROADS.**—For making-up various roads. Plans and specifications from Mr. F. Sadler, Surveyor, Council Offices, Acton, W.

NOVEMBER 21.—**Goolle.**—**PAVING.**—For paving back streets in Old Goolle. Specifications and quantities from Mr. C. G. Bradley, C.E., Council Offices, Goolle. Deposit of 11. 1s.

NOVEMBER 21.—**London.**—**STREET.**—Construction of a new 70-ft. street, about 800 ft. being a diversion of Millbank-street, at the junction of the new street, S.W. Drawings and specifications, form of tender, etc., from the Engineer of the Council, Mr. Maurice maurice, C.M.G., at the County Hall, St. James's, S.W. Deposit of 21.

NOVEMBER 21.—**Southampton.**—**SEWER.**—construction of brick sewer and granite corner sewer. Plans and specifications with Engineer, Mr. Herbert Walker, M.Inst.C.E., King-street, Nottingham. Quantities on deposit of 51.

NOVEMBER 22.—**Spilsby.**—**SEWERAGE.**—For construction of a new 70-ft. street, about 800 ft. being a diversion of Millbank-street, at the junction of the new street, S.W. Drawings and specifications, form of tender, etc., from the Engineer of the Council, Mr. Maurice maurice, C.M.G., at the County Hall, St. James's, S.W. Deposit of 21.

NOVEMBER 22.—**Southampton.**—**SEWER.**—construction of brick sewer and granite corner sewer. Plans and specifications with Engineer, Mr. Herbert Walker, M.Inst.C.E., King-street, Nottingham. Quantities on deposit of 51.

NOVEMBER 23.—**Porthcawl.**—**STREETS.**—private street improvement works. Plans and specifications seen, and quantities and form of tender from Mr. A. S. Lilley, A.M.Inst.M.E., Surveyor, Council Offices, Porthcawl. Deposit of 21. 2s.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Applicants to be
*CLERK OF WORKS.	Todmorden Education Com.	31. 3s. per week	Nov.
*ASSISTANT CRAFTSMAN.	Metropolitan Asylums Board.	1201. per annum	Nov.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, BOARDS, TIMBER, Etc.—Great Hall, Winchester House, E.C.	Churchill & Sim.	Nov.
*STOCK-IN-TRADE of TIMBER MERCHANT, SHOREDITCH—On the Premises.	H. W. Smith.	Nov.
*FREEHOLD PROPERTY, CITY OF LONDON—At the Mart.	Debenham, Tewson, Richardson, & Co.	Nov.
*FREEHOLD BUILDING SITE, CITY OF LONDON—At the Mart.	Debenham, Tewson, Richardson, & Co.	Nov.
*FACTORY PREMISES, VAUXHALL BRIDGE-ROAD—At the Mart.	Skelding & Holland	Nov.
*STOCK OF TIMBER—On the Premises.	Skelding & Holland	Nov.
*FREEHOLD WORKS, TIMBER STORE, Etc.—On the Premises.	Skelding & Holland	Nov.
*LAND FOR GARDEN SUBURBS, BEATON & SHIPLEY—Mechanics' Institute, Bradford.	Tyler & Co.	Nov.
*FREEHOLD PROPERTY, OXFORD-STREET—At the Mart.	E. Fox & Bousfield	Dec.

RECENT SALES (Continued from page 522).

Hammersmith, 71, Overstone-rd., u.t. 54 yrs., g.r. 71. 7s. 9d.	£285
Camdenwell—29, Kitson-rd., u.t. 46 yrs. g.r. 61. 1s. 6d.	180
Bethelhithe—16, Cope st. (s.), l. p.	150
Southwark—Ralph st., l. p. 30 ft. x 10 ft. x 10 ft. yrs. g.r. nil	155

By HENRY HENDRIKS & Co.
Birmingham, Warwick—Cambridge-st., f.g.r.
£501, reversion in 49 yrs.

Contributions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; y. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; lb. for line; st. for street; rd. for road; sq. for square; pl. for plot; ten. for terrace; cres. for crescent; av. for avenue; gds. for gardens; yd. for yard; gr. for grove; h.b. for house-bus; p.h. for public-house; o. for offices; s. for shops; ct. for court.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the special rate of 1s. 6d. per annum, with delivery by Friday Morning's Post in London and its suburbs.
To Canada, post free, 11s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Japan, etc., 12s. 6d. per annum.
Remittances payable to J. MORRIS & Co. should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

PRICES CURRENT OF MATERIALS.

*Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest, which should be remembered by those who make use of this information.

BRICKS, &c.	Per 1000 Alongside, in River.	£ s. d.
Best Stocks.	135 0	
Picked Stocks for Facings.	2 7 0	

BRICKS, &c. (Continued.)

Per 1000, Delivered at Railway Depot.	£ s. d.	
Flettons.	4 s. d.	
Best Farnham.	1 10 0	Double Headers 12
Red.	3 12 0	One Side and two Ends 17
Best Red Pressed.	5 0 0	Two Sides and one End 15
Ruabon Facing.	5 0 0	One End 15
Best Blue Pressed.	3 15 0	Spalls & Squints 15
Staffordshire.	4 0 0	Best Dipped Salt Glaz. Sticks 10
Do. Bulnose.	4 0 0	Headers 10
Best Southbridge.	4 0 0	Quoins, Bulnose, and Flats 14
Fire Bricks.	4 0 0	D'ble Sticks 14
Glazed Backs.	10 12 6	Double Headers 13
Best White and Ivory Glazed.	10 7 6	One Side and two Ends 17
Quoins, Bulnose, and Flats 14	7 6	One End 15
D'ble Sticks 14	7 6	Spalls & Squints 15
Second Quality White and Dipped Salt Glazed, per 1000 less than best.		

BRICKS, &c. (Continued).

and Pit Sand	6	9	per yard, delivered.
Ballast	5	6	"
Hard Cement	30	0	"
and Blue Lias lime 12 0			"
The cement or lime is exclusive of the ordinary charge for sacks.			
Blue Lias	13s. 0d.		per yard delivered.
Blue Fireclay in sacks 27s. 0d.			per ton at rly dep't.

STONE.

Per Ft. Cube.			
Bricks—delivered on road wagons, s. d.			
ington Depot, Nine Elms Depot, or	1	04	
delivered on road wagons, Nine Elms	1	04	
In Stones (30 ft. average)—			
Whitbed, delivered on road wagons,			
ington Depot, Nine Elms Depot, or	2	3	
Basebed, delivered on road wagons			
ington Depot, Nine Elms Depot, or	2	41	
Basebed, delivered on road wagons,			
ington Depot, Nine Elms Depot, or	2	41	
Basebed, delivered at Railway Depot.			
in blocks, s. d.			
Closeburn Bed	1	10	
Freestone	2	0	
Bed Mansfield	1	10	
Dale in	2	4	
Freestone	2	4	
Talsarn & Gwespyr	2	8	
Stone	2	8	
Stone	2	8	

Robbin Hood Quality.			
Per Ft. Cube, Delivered at Railway Depot.			
Random blocks	2	10	
Delivered at Railway Depot.			
own two sides landings to sizes (under			
super)	3	8	
Two sides ditto	3	6	
own two sides slabs (random sizes)	0	11	
24 in. sawn one side slabs (random sizes)	0	7	
24 in. ditto, ditto	0	6	
WORK—			
Per Ft. Cube, Delivered at Railway Depot.			
Random blocks	3	0	
Delivered at Railway Depot.			
own two sides landing to sizes (under 40 ft.			
super)	2	8	
Two sides ditto	3	0	
own two sides slabs (random sizes)	1	2	
24 in. ditto, ditto	0	5	

SLATES.

Per 1000 of 1800 at Railway Depot.			
	£ s. d.	In. In.	£ s. d.
best blue	13	6	unfading green 15 7 6
oz	13	6	20 x 12 ditto 17 6
quality	13	6	18 x 10 ditto 13 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0
13 0	13	6	16 x 8 ditto 10 5 0

TILES.

At Railway Depot.			
	s. d.	Best "Hartshill"	s. d.
Main roof	42	0	brand, plain sand-
by 11 in.	42	0	flaced (per 1000) ..
Valley (per doz.)	3	7	Do, pressed (per
1000)	50	0	1000)
Do, Ornamental (per			
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per
1000)	52	8	Do, Ornamental (per

WOOD.

At per standard.			
	£ s. d.	At per standard.	£ s. d.
best 3 in. by 11 in. and 4 in.	14	0	15 10 0
9 in. and 11 in.	14	0	15 10 0
best 3 by 9	13	10	14 10 0
best 24 in. by 7 in.	11	10	12 10 0
best 24 by 6 and 3 by 6	0	10	less than
seconds	1	0	7 in. and 5 in.
seconds	0	10	0
by 1 in. and 2 in. by 6 in.	0	10	0
by 4 in. and 2 in. by 5 in.	0	10	0
Sawn Boards—			
and 14 in. by 7 in.	0	10	more than
battens.	1	0	0
At per load of 50 ft.			
umber, best middling Dazig	5	0	5 10 0
(average specification)	4	0	5 10 0
onds	3	17	6
all yellow deals 3 in. by 11 in.	3	17	6
all timber (6 in. to 8 in.)	3	15	0
ishish balks	2	16	8
pine timber (30 ft. average)	4	10	5 5 0

JOHNES' WOOD.			
	At per standard.		
Sea: first yellow deals,	24	10	25 10 0
by 11 in.	22	10	23 10 0
by 9 in.	17	0	18 0 0
Battens 24 in. and 3 in. by 7 in.	17	0	18 0 0
all yellow deals 3 in. by 11 in.	17	0	18 0 0
3 in. by 9 in.	18	0	19 10 0
attens 24 in. and 3 in. by 7 in.	14	0	15 0 0
all yellow Deals, 3 in. by	14	0	15 0 0
in. and 9 in.	11	10	12 10 0
attens 24 in. and 3 in. by 7 in.	11	10	12 10 0

WOOD (Continued).

JOHNES' WOOD (Continued).		At per standard.	
Petersburg: first yellow deals,	21	10	22 10 0
3 in. by 11 in.	13	10	14 10 0
Do, 3 in. by 9 in.	14	0	15 0 0
Battens	16	10	17 10 0
Second yellow deals, 3 in. by	15	0	16 0 0
11 in.	11	10	12 10 0
Do, 3 in. by 9 in.	13	0	14 0 0
Battens	10	10	11 0 0
Third yellow deals, 3 in. by 11 in.	13	0	14 0 0
Do, 3 in. by 9 in.	13	0	14 0 0
Battens	10	10	11 0 0
White Sea and Petersburg—			
First white deals, 3 in. by 11 in.	15	0	16 0 0
3 in. by 9 in.	14	0	15 0 0
Battens	11	10	12 10 0
Second white deals, 3 in. by 11 in.	14	0	15 0 0
Do, 3 in. by 9 in.	13	0	14 0 0
Battens	10	10	11 0 0
Pitch-pine deals	19	0	21 0 0
Under 2 in. thick extra	0	10	1 0 0
Yellow Pine—First, regular sizes	44	0	upwards.
Odiments	32	0	"
Seconds, regular sizes	28	0	"
Odiments	28	0	"
Kural Pine—Planks per ft. cube.	0	3	6
Danzig and Stettin Oak Logs—			
Large, per ft. cube	0	3	0
Small	0	2	6
Waincot Oak Logs, per ft. cube	0	5	6
Dry Waincot Oak, per ft. cube	0	8	4
Do, 3 in. by 9 in.	0	7	0
Do, 3 in. by 7 in.	0	1	1
Do, 3 in. by 5 in.	0	1	6
Do, 3 in. by 4 in.	0	1	0
Do, 3 in. by 3 in.	0	1	0
Do, 3 in. by 2 in.	0	1	0
Do, 3 in. by 1 in.	0	1	0
Do, 3 in. by 1/2 in.	0	1	0
Do, 3 in. by 1/4 in.	0	1	0
Do, 3 in. by 1/8 in.	0	1	0
Do, 3 in. by 1/16 in.	0	1	0
Do, 3 in. by 1/32 in.	0	1	0
Do, 3 in. by 1/64 in.	0	1	0
Do, 3 in. by 1/128 in.	0	1	0
Do, 3 in. by 1/256 in.	0	1	0
Do, 3 in. by 1/512 in.	0	1	0
Do, 3 in. by 1/1024 in.	0	1	0
Do, 3 in. by 1/2048 in.	0	1	0
Do, 3 in. by 1/4096 in.	0	1	0
Do, 3 in. by 1/8192 in.	0	1	0
Do, 3 in. by 1/16384 in.	0	1	0
Do, 3 in. by 1/32768 in.	0	1	0
Do, 3 in. by 1/65536 in.	0	1	0
Do, 3 in. by 1/131072 in.	0	1	0
Do, 3 in. by 1/262144 in.	0	1	0
Do, 3 in. by 1/524288 in.	0	1	0
Do, 3 in. by 1/1048576 in.	0	1	0
Do, 3 in. by 1/2097152 in.	0	1	0
Do, 3 in. by 1/4194304 in.	0	1	0
Do, 3 in. by 1/8388608 in.	0	1	0
Do, 3 in. by 1/16777216 in.	0	1	0
Do, 3 in. by 1/33554432 in.	0	1	0
Do, 3 in. by 1/67108864 in.	0	1	0
Do, 3 in. by 1/134217728 in.	0	1	0
Do, 3 in. by 1/268435456 in.	0	1	0
Do, 3 in. by 1/536870912 in.	0	1	0
Do, 3 in. by 1/1073741824 in.	0	1	0
Do, 3 in. by 1/2147483648 in.	0	1	0
Do, 3 in. by 1/4294967296 in.	0	1	0
Do, 3 in. by 1/8589934592 in.	0	1	0
Do, 3 in. by 1/17179869184 in.	0	1	0
Do, 3 in. by 1/34359738368 in.	0	1	0
Do, 3 in. by 1/68719476736 in.	0	1	0
Do, 3 in. by 1/137438953472 in.	0	1	0
Do, 3 in. by 1/274877906944 in.	0	1	0
Do, 3 in. by 1/549755813888 in.	0	1	0
Do, 3 in. by 1/1099511627776 in.	0	1	0
Do, 3 in. by 1/2199023255552 in.	0	1	0
Do, 3 in. by 1/4398046511104 in.	0	1	0
Do, 3 in. by 1/8796093022208 in.	0	1	0
Do, 3 in. by 1/17592186044416 in.	0	1	0
Do, 3 in. by 1/35184372088832 in.	0	1	0
Do, 3 in. by 1/70368744177664 in.	0	1	0
Do, 3 in. by 1/140737488355328 in.	0	1	0
Do, 3 in. by 1/281474976710656 in.	0	1	0
Do, 3 in. by 1/562949953421312 in.	0	1	0
Do, 3 in. by 1/1125899906842624 in.	0	1	0
Do, 3 in. by 1/2251799813685248 in.	0	1	0
Do, 3 in. by 1/4503599627370496 in.	0	1	0
Do, 3 in. by 1/9007199254740992 in.	0	1	0
Do, 3 in. by 1/18014398509481984 in.	0	1	0
Do, 3 in. by 1/36028797018963968 in.	0	1	0
Do, 3 in. by 1/72057594037927936 in.	0	1	0
Do, 3 in. by 1/144115188075855872 in.	0	1	0
Do, 3 in. by 1/288230376151711744 in.	0	1	0
Do, 3 in. by 1/576460752303423488 in.	0	1	0
Do, 3 in. by 1/1152921504606846976 in.	0	1	0
Do, 3 in. by 1/2305843009213693952 in.	0	1	0
Do, 3 in. by 1/4611686018427387904 in.	0	1	0
Do, 3 in. by 1/9223372036854775808 in.	0	1	0
Do, 3 in. by 1/18446744073709551616 in.	0	1	0
Do, 3 in. by 1/36893488147419103232 in.	0	1	0
Do, 3 in. by 1/73786976294838206464 in.	0	1	0
Do, 3 in. by 1/147573952589676412928 in.	0	1	0
Do, 3 in. by 1/295147905179352825856 in.	0	1	0
Do, 3 in. by 1/590295810358705651712 in.	0	1	0
Do, 3 in. by 1/1180591620717411303424 in.	0	1	0
Do, 3 in. by 1/2361183241434822606848 in.	0	1	0
Do, 3 in. by 1/4722366482869645213696 in.	0	1	0
Do, 3 in. by 1/9444732965739290427392 in.	0	1	0
Do, 3 in. by 1/18889465931478580854784 in.	0	1	0
Do, 3 in. by 1/37778931862957161709568 in.	0	1	0
Do, 3 in. by 1/75557863725914323419136 in.	0	1	0
Do, 3 in. by 1/151115727451828646838272 in.	0	1	0
Do, 3 in. by 1/302231454903657293676544 in.	0	1	0
Do, 3 in. by 1/604462909807314587353088 in.	0	1	0
Do, 3 in. by 1/1208925819614629174706176 in.	0	1	0
Do, 3 in. by 1/2417851639229258349412352 in.	0	1	0
Do, 3 in. by 1/4835703278458516698824704 in.	0	1	0
Do, 3 in. by 1/9671406556917033397649408 in.	0	1	0
Do, 3 in. by 1/19342813113834066795298816 in.	0	1	0
Do, 3 in. by 1/38685626227668133590597632 in.	0	1	0
Do, 3 in. by 1/77371252455336267181195264 in.	0	1	0
Do, 3 in. by 1/154742504910672534362384512 in.	0	1	0
Do, 3 in. by 1/309485009821345068724768024 in.	0	1	0
Do, 3 in. by 1/618970019642690137449536048 in.	0	1	0
Do, 3 in. by 1/1237940039285380274998660524416 in.	0	1	0
Do, 3 in. by 1/247588007857076054979814592 in.	0	1	0
Do, 3 in. by 1/495176015714152109959629184 in.	0	1	0
Do, 3 in. by 1/990352031428304219919258368 in.	0	1	0
Do, 3 in. by 1/1980704062856608398385176736 in.	0	1	0
Do, 3 in. by 1/3961408125713216796770353472 in.	0	1	0
Do, 3 in. by 1/7922816251426433593540706944 in.	0	1	0
Do, 3 in. by 1/15845632502852867187081413888 in.	0	1	0
Do, 3 in. by 1/31691265005705734374162827776 in.	0	1	0
Do, 3 in. by 1/63382530011411468748325655552 in.	0	1	0
Do, 3 in. by 1/126765060022822937496651311104 in.	0	1	0
Do, 3 in. by 1/253530120045645874993302622208 in.	0	1	0
Do, 3 in. by 1/507060240091291749986605244416 in.	0	1	0
Do, 3 in. by 1/101412048018258349993302622208 in.	0	1	0
Do, 3 in. by 1/202824096036516689986605244416 in.	0	1	0
Do, 3 in. by 1/405648192073033379973210488832 in.	0	1	0
Do, 3 in. by 1/811296384146066759946420977664 in.	0	1	0
Do, 3 in. by 1/1622592768292133519892841955328 in.	0	1	0
Do, 3 in. by 1/3245185536584267039785683910656 in.	0	1	0
Do, 3 in. by 1/6490371073168534079571367821312 in.	0	1	0
Do, 3 in. by 1/1298074214633706815914273644224 in.	0	1	0
Do, 3 in. by 1/2596148429267413631828547288448 in.	0	1	0
Do, 3 in. by 1/5192296858534827263657094576896 in.	0	1	0
Do, 3 in. by 1/10384593717069654527314189153792 in.	0	1	0
Do, 3 in. by 1/20769187434139309054628378307584 in.	0	1	0
Do, 3 in. by 1/41538374868278618109256756615168 in.	0	1	0
Do, 3 in. by 1/83076749736557236218513513230336 in.	0	1	0
Do, 3 in. by 1/166153499473114472437027026460672 in.	0	1	0
Do, 3 in. by 1/332306998946228944874054052921344 in.	0	1	0
Do, 3 in. by 1/664613997892457889748108105842688 in.	0	1	0
Do, 3 in. by 1/132922799578491577949621621168536 in.	0	1	0
Do, 3 in. by 1/265845599156983155899243242337072 in.	0	1	0
Do, 3 in. by 1/531691198313966311798486484674144 in.	0	1	0
Do, 3 in. by 1/1063382396627932623596972969348288 in.	0	1	0
Do, 3 in. by 1/2126764793255865247193945938696576 in.	0	1	0
Do, 3 in. by 1/4253529586511730494387891877393152 in.	0	1	0
Do, 3 in. by 1/8507059173023460988775783754786304 in.	0	1	0
Do, 3 in. by 1/17014118346046921977551567509572608 in.	0	1	0
Do, 3 in. by 1/34028236692093843955103135019145216 in.	0	1	0
Do, 3 in. by 1/68056473384187687910206270038290432 in.	0	1	0
Do, 3 in. by 1/136112946768375375820412540076580864 in.	0	1	0
Do, 3 in. by 1/272225893536750751640825080153161728 in.	0	1	0
Do, 3 in. by 1/544451787073501503281650160306323456 in.	0	1	0
Do, 3 in. by 1/1088903574147003005763300320612646912 in.	0	1	0
Do, 3 in. by 1/2177807148294006011526600641225293824 in.	0	1	0
Do, 3 in. by 1/4355614296588012023053201282450587648 in.	0	1	0
Do, 3 in. by 1/8711228593176024046106402564901175296 in.	0	1	0
Do, 3 in. by 1/17422457186352048092212805129802350592 in.	0	1	0
Do, 3 in. by 1/34844914372704096184425610259604701184 in.	0	1	0
Do, 3 in. by 1/69689828745408192368851220519209403776 in.	0	1	0
Do, 3 in. by 1/139379657490816384737702441038418807552 in.	0	1	0
Do, 3 in. by 1/278759314981632769475404882076837615104 in.	0	1	0
Do, 3 in. by 1/557518629963265538950809764153675230208 in.	0	1	0
Do, 3 in. by 1/1115037259926531077901619528307350460416 in.	0	1	0
Do, 3 in. by 1/2230074519853062155803239056614700920832 in.	0	1	0
Do, 3 in. by 1/4460149039706124316006478113229401841664 in.	0	1	0
Do, 3 in. by 1/8920298079412248632012956226458803683328 in.	0	1	0
Do, 3 in. by 1/17840596158824497264025912452917607366656 in.	0	1	0
Do, 3 in. by 1/35681192317648994528051824905835214733312 in.	0	1	0
Do, 3 in. by 1/71362384635297989056103649811670429466624 in.	0	1	0
Do, 3 in. by 1/142724769270595978112207299623340858933248 in.	0	1	0
Do, 3 in. by 1/285449538541191956224414599246681717866496 in.	0	1	0
Do, 3 in. by 1/570899077082383912448829198493363435732992 in.	0	1	0
Do, 3 in. by 1/1141798154164767824897658396986726871465984 in.	0	1	0
Do, 3 in. by 1/2283596308329535649795316793973453742931968 in.	0	1	0
Do, 3 in. by 1/4567192616659071299590633587946907485863936 in.	0	1	0
Do, 3 in. by 1/9134385233318142599181267175893814971727872 in.	0	1	0
Do, 3 in. by 1/18268770466636285198362534351787629943455744 in.	0	1	0
Do, 3 in. by 1/36537540933272570396725068703575259886911488 in.	0	1	0
Do, 3 in. by 1/73075081866545140793450137407150519773822976 in.	0	1	0
Do, 3 in. by 1/146150163733090281586900274814301039547645952 in.	0	1	0
Do, 3 in. by 1/292300327466180563173800549628602079095291904 in.	0	1	0
Do, 3 in. by 1/584600654932361126347601099257204158190583808 in.	0	1	0
Do, 3 in. by 1/1169201309864722252695202198514408316381167616 in.	0	1	0
Do, 3 in. by 1/2338402619729444505390404397028816626762335232 in.	0	1	0
Do, 3 in. by 1/4676805239458889010780808794057633253524670464 in.	0	1	0
Do, 3 in. by 1/9353610478917778021561617588115266507049340928 in.	0	1	0
Do, 3 in. by 1/18707220957835556043123235176230530014098681856 in.	0	1	0
Do, 3 in. by 1/37414441915671112086246470352461060028197363712 in.	0	1	0
Do, 3 in. by 1/74828883831342224172492940704922120056394727424 in.	0	1	0
Do			

BROUGHTON PENTRE.—For erection of a semi-permanent school for 376 children. Mr. W. D. Wiles, County Architect, 42a, High-street, Wrexham

For Permanent Works.

H. A. Jones	£1,448 0 0	R. Wilkins	£1,171 0 0
W. H. Thomas	1,390 0 0	W. H. Wycherley	1,165 0 0
Treasure & Co.	1,230 0 0	J. B. Woolley	1,050 5 6
Lewis Bros.	1,227 0 0	J. T. Jones, Cefn.	
C. Griffiths	1,188 0 0	Bunobn*	957 0 0

For Superstructure.

T. Mundy	£3,221 0 0	Cowieson & Co	£2,235 16 2
W. H. Wycherley		C. Griffiths	2,158 0 0
ley	2,700 0 0	Treasure & Co.	2,157 0 0
H. A. Jones	2,684 0 0	J. B. Woolley	2,139 8 2
Ginger, Lee & Co.	2,046 18 0	J. T. Jones	2,067 0 0
Humphreys		F. Smith & Co.	2,050 0 0
Ltd.	2,631 0 0	W. Harbrow	
P. Williams	2,543 4 1	South Bar	
Lewis Bros.	2,490 5 0	mondsey Sta-	
W. H. Thomas	2,340 0 0	tion, London,	
Harrison & Co.	2,263 7 8	S.E.*	2,049 0 0
H. S. Building			
Co.	2,216 0 0		

DWYGYPYLCHI. For erection of a cottage. Messrs. Richard Davies & Son, architects, Bangor —
W. Hughes & J. L. Benjamin, Lsfryn, Capelulo, Pemasennawr* £300 5

GREAT CROSBY. For laying out four plots of land (containing over half an acre) for a pair of villas and two single ones, on the suburban garden building estate principle, at the corner of Liverpool-road and Myers road East, for Mr. M. Condron, who is employing a staff of men to execute the work under the supervision of Mr. I. H. McGovern, architect, 26, North John-street, Liverpool:—
Estimated cost..... £1,800

HARROW. For the erection of detached residence, Pinner-road, Harrow, for Dr. F. M. Matheson. Messrs. E. A. Crook & Co., architects, Harrow. Mr. Robert Pone, surveyor, Sydenham, S.E. £1,000
W. H. Watts, Willesden Green* £1,000

LIVERPOOL. For the reinstatement of a six-story and a four-story mill in Glasgow street, after damage caused by a fire. Mr. I. H. McGovern, architect, 26, North John-street, Liverpool:—
Jones & Sons* £1,460

LONDON. For enlargement of the Berkshire-road School, Hackney, and erection of a handicraft centre, for the London County Council:—

W. Reason	£3,880 10 0		
W. Shurman & Son, Ltd.	3,445 0 0		
Woodward & Co.	3,375 18 11		
G. S. S. Williams & Son	3,188 0 0		
Brand, Pettit, & Co.	3,134 0 0		
J. Wilmore & Sons	3,057 1 6		
Todd & Newman	3,173 0 0		
L. H. & R. Roberts	2,957 0 0		
E. Lawrence & Sons, Ltd.	2,945 0 0		
Stevens & Sons	2,887 18 1		
J. Stewart	2,882 12 2		
E. A. Roome & Co.	2,833 0 0		
J. Chessum & Sons, 7a, South-place	2,783 2 2		

LONDON. For the erection of fifteen cottages on section C of the Norbury Estate, for the London County Council:—

C. Wall, Ltd.	£3,825	Nicholls & Son	£3,413
F. W. Fletcher	3,701	F. & T. Thorne	3,439
J. Smith & Sons, Ltd	3,636	Rowley Bros., Tot.	
F. & H. F. Higgs	3,585	tenham*	3,241
Gathercole Bros	3,553		

LONDON. For structural improvements to the Lyham-road School, Norwood, for the London County Council:—

J. Garrett & Son	£17,836 0	H. L. Holloway	£14,444 0
J. Appleby & Sons	16,518 0	W. E. Blake, Ltd.	14,333 8
G. Parker & Sons	15,012 0	T. D. Lenz	14,216 0
Holliday & Green-		J. & C. Bowyer,	14,195 0
wood, Ltd.	15,369 0	Ltd., Upper	
G. E. Wallis &		Norwood	
Sons, Ltd.	15,242 0	J. Smith & Sons,	13,988 0
Kirk & Randall	14,918 0	Ltd.	13,892 0
W. Johnson & Co.		J. & M. Patrick	14,195 0
Ltd.	14,906 0	W. Alers & Co.,	
G. Godson & Sons	14,722 0	Ltd.	13,275 0
		Withdrawn.	

LONDON. For erection of a permanent way depot at Levens-road, Poplar, for the London County Council:—

Colls & Sons	£15,940	H. L. Holloway	£14,476
F. & H. F. Higgs	15,500	Kerridge & Shaw	14,444
C. Wall, Ltd.	15,000	J. & C. Bowyer,	14,423
Holloway Bros.		Ltd.	
(London), Ltd.	15,000	Kirk & Randall,	
Rowley Bros.	14,497	Woolbach, S.E.*	14,325

[The estimate of the Architect, comparable with the tenders, was £14,100.]

LONDON. For addition and alteration to the east lodge, Avery Hill, for the London County Council:—

W. Bickerton	£205 10	H. Line	£165 0
J. Barker & Co.,		R. A. Lowe & Co.	157 0
Ltd.	187 0	W. Pollock, Eltham*	143 0

[The Architect's estimate of the cost of the work is £160.]

LONDON. For various works at the "Athenaeum" public-house, Canberwell New-road, for the purpose of widening the thoroughfare, for the London County Council:—

P. & H. F. Higgs	£2,270	H. Lovatt, Ltd.	£1,587
H. L. Holloway	2,192	W. Smith & Son	
F. Rider & Son	2,011	Hunleyford-road,	
Rice & Son	1,939	S.E.*	1,536

OAKDALE. For erection of 100 (or more) workmen's houses Mr. A. F. Webb, architect and surveyor, Tredegar-chambers, Blackwood:—
E. Thomas & Sons £46,891 J. Newcombe & Son £24,882
G. J. Furnan 35,093 Jones Bros 23,680
Jawes Bros 28,028 Davies & Williams 22,074
W. E. Willis 27,820 Gregory Bros 21,092
Pasmore & Per- J. E. Jones,
kins 26,156 Wattville* 21,060
H. Smith 25,480
..... £250

SEAFORTH. For converting two villas into shops at the respective corners of Henford-road and Rawson-road and the latter road and Cambridge-road, for Mr. Goulthorn. Mr. I. H. McGovern, architect, 26, North John-street, Liverpool:—
Crouie* £250

WEST HAM. For the installation of low-pressure hot-water heating apparatus by forced circulation at the Gainsborough-road School. Messrs. William & John H. Jacques, architects, 2, Fen-court, E.C.

Muggrave & Co.,	H. G. Lathan	£890 0 0	
Ltd.,	£1,327 0 0	Reynolds & Co. ...	988 5 0
Purcell & Nobbs	1,248 0 0	G. & E. Bradley	953 0 0
J. & F. May	1,165 0 0	C. H. J. Talmage	884 8 8
Ashwell & Nesbit,		W. Watkin & Son	841 8 8
Ltd.	1,112 0 0	F. Davies*	839 0 0
Werner, Pfei-			
derer, & Perkins	1,050 0 0		

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.

**EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.**

Telephone 2685 Wall, or write

**BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.**

WEST HAM. For alterations at Regent's School. Messrs. William & John H. Jacques, architects, 2, Fen-court, E.C.:—
Myall & Upson £281 0 0 J. T. Lutton £210
J. Barker & Co. 254 0 0 W. J. Madison 189
J. Strong & Co. 254 17 6 A. Webb 187
F. & G. Foster 226 0 0 H. C. Horwill 188
Chessum & Sons 217 0 0 A. E. Symes* 181

WEST HAM. For new workshop, Grange Special Schools. Messrs. William & John H. Jacques, architects, 2, Fen-court, E.C.:—
J. Barker & Co. £316 0 0 Chessum & Sons £283
F. & G. Foster 296 0 0 J. T. Lutton 247
J. Strong & Co. 274 17 6 A. E. Symes 247
Myall & Upson 267 0 0 H. C. Horwill 240
A. Webb 265 0 0 C. J. Kemp* 236
W. J. Madison 265 0 0

WEST HAM. For the extension of the Edgware Offices, 95, The Grove, Stratford. Messrs. William & John H. Jacques, architects, 2, Fen-court, Quantities by Messrs. R. L. Curtis & Sons.

H. P. Webb & J. Carter	£5,518 0 0	Ltd.	48,000
Chessum & Sons	6,475 9 1	H. C. Horwill	5,940
J. W. Jerram	6,277 0 0	W. J. Madison	5,558
McLaughlin		A. E. Symes	5,552
Harvey, Ltd.	6,275 0 0		

WINCHESTER. For painting the Guildhall—
Salisbury Fibrous Plaster Co. £18 1
E. Cawte 108 1
R. & M. Simpkins, Winchester* 98

Ham Hill Stone, Doulting Stone, Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trank & Co. The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams
16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallurgical Asphalte Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and m. rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the North British

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
150 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.
Polonceau Asphalte

PATENT ASPHALTE AND FELT ROOFING
ACID-RESISTING ASPHALTE.
WHITE SILICA PAVEMENT.
SEYSEL ASPHALTE (Direct from the Mines)

"Drop Dry" Glazing
ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.
Copper & Zinc Roofing
The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address: "COURTEOUS, LONDON."
F. BRABY & CO., LTD.
Chief Offices: **352-364, EUSTON ROAD, LONDON, N.W.**
Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Telephone: North 3638 (4 lines).

THE BUILDER

VOL. CL.—No. 3584.

NOVEMBER 10, 1911.

CONTENTS.

PAGE	PAGE	PAGE			
EXPERIMENTAL METHODS AND THE R.I.B.A.	527	MONTHLY HISTORICAL REVIEW: -		LONDON COUNCILS	530
ON STREET ARCHITECTURE (WITH ILLUSTRATIONS)	528	SOME WORCESTERSHIRE CHURCHES (WITH ILLUSTRATIONS) ..	541	FOREIGN AND COLONIAL	550
.....	529	THE PARISH CHURCH OF MOLD, FLINTSHIRE (WITH ILLUSTRATIONS).....	543	OBITUARY	550
.....	531	NOTES	545	PATENTS	550
ROYAL INSTITUTE OF BRITISH ARCHITECTS ...	531	THE BUILDING TRADE:—		TRADE CATALOGUES	551
MAN AS A DOMESTIC ARCHITECT	534	THE WAGES BOARD SYSTEM IN AUSTRALIA	546	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	552
ARCHITECTURAL SOCIETIES	535	INSURANCE AGAINST UNEMPLOYMENT.....	546	SOME RECENT SALES.....	554
SECTION NEWS (WITH ILLUSTRATIONS)	535	LONDON ASSOCIATION OF MASTER DECORATORS ..	547	PRICES CURRENT.....	554
MEETING SOCIETIES	537	SOUTH SHIELDS MASTER BUILDERS	547	TENDERS	555
BRITISH SOCIETY AT ATHENS	537	GENERAL BUILDING NEWS.....	547		
LOCAL NEWS	538	APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909 ..	547		
CORRESPONDENCE	539	PROJECTED NEW BUILDINGS IN THE PROVINCES ..	548		
COMMUNICATION COLUMN.....	539	THE LONDON COUNTY COUNCIL	549		
OBITUARY SUMMARY.....	540	FIGURE CASTINGS (WITH ILLUSTRATIONS) ..	549		
.....	540	METROPOLITAN ASYLUM BOARD.....	549		
.....	540	METROPOLITAN WATER BOARD.....	549		
.....	540	LEGAL COLUMN	549		
.....	540	LAW REPORT.....	550		

Illustrations.

ORSENSE CATHEDRAL, SPAIN. FROM A DRAWING BY MR. HENRY C. BREWER.

THE PUERTA DE LA GLORIA, SANTIAGO CATHEDRAL. FROM A DRAWING BY MR. HENRY C. BREWER.

GLAMORGAN COUNTY HALL, CATWATH, KAR. CARDIFF: EAST AND WEST FLOORS. BY MESSRS. E. VICKERT HARRIS & T. A. MOORE, A.R.I.B.A., ARCHITECTS.

TOWN HALL, RYE, SUSSEX. MEASURED DRAWINGS BY MR. L. R. LESTER.

Illustrations.

OURENSE CATHEDRAL, SPAIN. FROM A DRAWING BY MR. HENRY C. BREWER.

THE PUERTA DE LA GLORIA, SANTIAGO CATHEDRAL. FROM A DRAWING BY MR. HENRY C. BREWER.

GLAMORGAN COUNTY HALL, CATHAYS PARK, CARDIFF: EAST AND WEST FRONTS. MESSRS. E. VINCENT HARRIS & T. A. MOODIE, A.A.R.I.B.A., ARCHITECTS.

TOWN HALL, RYE, SUSSEX. MEASURED DRAWINGS BY MR. J. R. LEATHART.



East Side, Fitzroy-square (1790). The Brothers Adam, Architects.

From Messrs. Richardson & Gill's "London Houses from 1660 to 1820." (E. T. Bataford.) (See page 528.)

DEPARTMENTAL METHODS AND THE R.I.B.A.

THE President of the Royal Institute of British Architects in his opening address of the session dealt in a straightforward and spoken manner with questions of vital importance both to the profession and the general public.

Of all the subjects to which he referred it seems to us to be of more importance both than that usually described as "official architecture," and we welcome the President's remarks as expressing support with all the authority of his position ideas and opinions which years past have been held by all those who have given much thought to the interests and the future of the public

architecture of this country. We place this question first in importance as we are of opinion that, so far as our public buildings are concerned, it involves nothing less than the very existence of architecture as a fine art.

As Sir Robert Hunter pointed out in his sympathetic speech, there is an obvious reason why architects object to the existence of such huge official factories as are controlled by the First Commissioner of Works, the Admiralty, the War Office, or the London County Council. There are, however, other reasons not so obvious perhaps to the layman, but far weightier and more worthy of the serious consideration of the

public. Anyone who takes Sir Robert Hunter's remark as discounting or as being intended to discount the observations of the President is liable, we imagine, to make a grave mistake. On the contrary, if it happens, as it does seem to happen in this particular instance, that the interests of architects coincide with the best interests of the public and of architecture as a fine art, the argument would appear to be strengthened, not weakened.

But, after all, the main question is the value to the public of these vast official establishments. Architects object to them for the good and sufficient reason that the best architecture cannot be

obtained by any such methods. As they consider that the public is entitled to the best that can be produced, as they know that the public pays as much, or more, for an inferior article as it need pay for the best, they naturally conclude that the interests of the public suffer in consequence.

The President gave some interesting figures, which suggested that much of this official work is done at a cost of 7 per cent. for salaries alone. We are not disposed to quarrel with the Government for paying this extraordinary price provided it can be shown that they get extraordinary value for it. The trouble is that this cannot be shown, while we have a shrewd suspicion that in this matter the public is deceived, and takes it for granted that these large Departments are producing work which is as good as or better than the best that can be produced by independent practitioners. The public hardly realises that the most gifted designers of the day are not to be found in these Departments, or that their services could be obtained at a smaller cost.

We venture to say that if this question is to be satisfactorily dealt with it must be discussed and settled on the broadest grounds of public policy and from the point of view of the interests of the whole community, and not merely the interests of any one profession.

Architecture, when all is said, is the servant of life, its *raison d'être* is the service of humanity. No profession can justify its existence on any other grounds.

It would appear, then, to be useless, and therefore foolish, for the independent architect to plead the necessity to live. This necessity is apt to be apparent to no one but himself. Neither does it seem advisable to discuss this question from any political standpoint. The only safe ground is the broad and, we believe, incontrovertible fact that the existence of these Departments is not in the highest interests of the State or of the art of architecture.

Mr. Irving K. Pond, President of the American Institute of Architects, whom everyone was glad to see present, informed the meeting that the American architects had succeeded in obtaining a law whereby all important Government work is given to independent architects, and that the standard of work had been raised thereby.

With such an encouraging example before them, and after so definite a pronouncement of their own opinion, we presume that those who control the Institute policy will not let the matter drop, but will use all their influence to obtain similar results in this country.

Considering the rapid growth of these Departments during the last few years, and the enormous size to which they have attained, few matters with which the Institute has to deal are of more immediate importance to the future of architecture in this country, and we think that, whether or not any advantages accrue to the profession from the President's action, he discharged a public duty in calling attention to the question.

LONDON STREET ARCHITECTURE.



MESSRS. RICHARDSON AND GILL* are fully justified in their contention that, despite the public interest taken in our

country houses of the Georgian period, the minor town house, and more especially the later developments from the time of the Adam brothers onward, has been comparatively neglected. In America the buildings of this era under the designation of the Colonial style have formed a fertile source of inspiration to architects in recent years. This, of course, was only natural, as they represented the only type of vernacular work, while here in England our domestic architecture represented by buildings dating back for many centuries prior to this period in London, however, possesses so little in the way of domestic buildings of a date earlier than the XVIIth century that the introduction of modern work based on mediæval or Jacobean traditions is apt to be destructive to the harmony of the ensemble, and architects will be well advised to keep their work in harmony with the really characteristic effect of London exhibited in the early years of the XIXth century. As a useful reminder of what this effect was the work of Messrs. Richardson and Gill is of undoubted value; the illustrations are well chosen, and give a good general impression of the periods covered by the book. Many will be recognised by the architect who has his eyes open as he passes through familiar streets, but we can hazard a guess that he will find some that draw his attention to delightful conceived bits of composition which must have passed unnoticed in the turmoil and traffic of London; such, for instance, as the façade in Brook-street, the illustration of which we reproduce, and other works of the early XIXth century, which we have been too apt to regard as negligible. Probably but few who have passed No. 1, Bedford-square on their way to Euston, and have not the interesting design of the unusual central doorway, are aware of the delightful interior that lies behind it, the work of Thomas Leverton in 1771. While the better-known work of the brothers Adam in Fitzroy-square is less frequently studied than its merits as a composition demand.

The work of Nash and his contemporaries has been so frequently undervalued, owing to the clamorous detraction of stucco which emanated from Pugin, Ruskin, and their followers, that we feel indebted to those who are not helping to bring us back to a better balanced frame of mind, and to make it clear that architecture is a more plastic art and less dependent on the actual material employed than has sometimes been imagined. A statue in bronze or marble may make a special appeal, but we do not withhold our admiration for the work because the presentment happens to be in plaster. The same reasoning applies to our buildings; our authors, indeed, go farther, and point out the advantages of painted stucco.

* "London Houses from 1660 to 1820," By A. Richardson and C. Lovett Gill. Octavo. 1911. net. (B. T. Batsford.)



Nos. 57 & 58, Lincoln's Inn-fields (about 1735). (Influence of Inigo Jones.)
From Messrs. Richardson & Gill's "London Houses from 1660 to 1820." (B. T. Batsford.)

g the impression of cleanliness so
ctive in the business street. Apart
this we have often noticed effects
ur painted fronts, more especially
the sun is dropping towards the
on, that could not be paralleled in
lon in any other material. The
ces glisten with vivid reflections,
g a brilliancy to the light and shade
might be commended to our pictorial
ts.

whether we decide to revive the
ted front or not is, however, of
r interest to the great question as to
form our street architecture is to
in the future. At the present time
building is regarded as entitled
s individual expression, and conse-
ntly our street picture is mainly
ndent on accidental effects. Are we
g to return to the conception of each
k as a single design balanced in itself
in conjunction with its neighbours,
ill the influences demanding freedom
each separate owner continue to
ail? Messrs. Richardson and Gill
luct us through the period during
h the idea of the group design
veloped. We should welcome a further
tribution to the study of London
itecture dealing with the conception
the street as a comprehensive design,
trated by the numerous examples of
type that we seem to be in danger of
g, as, step by step, the demands of a
e complex social organisation render
c internal arrangements obsolete.

connexion with some question of architectural
politics affecting perhaps rather the status of
the architect than the advancement of the art
of architecture. Moreover, church building
forms but a small part of the total architectural
output or practice, and it is not always strongly
represented on the Council."

Now, without claiming that the
P.R.I.B.A. is in his official capacity
necessarily infallible in his selection of
an assessor, or even that he has a pre-
scriptive right to such a duty, we must
express our opinion that this paragraph
is calculated to convey quite a false
impression, in that it suggests that these
appointments go to an undue extent to
members of the R.I.B.A. Council. The
fact that many assessors are or have
been members of Council obviously does
not justify the inference that this fact has
ever influenced any President in his
selection of any other than the man he
considers most suitable.

Anomalies in Ecclesiastical Law.

In designing and furnish-
ing churches many
problems of local origin
must be faced, and
because parishioners in one district will
accept without question features which
elsewhere will be condemned architects
must be prepared to adjust their ideas
accordingly. Moreover, the inconsis-
tency of the law is notorious, a fact
indicated by two recent decisions. In
the Diocese of Carlisle application was
made for the erection of a rood in a
parish church, and permission was
refused on the ground that, in the words

of previous judgments, there was a
danger of "superstitious reverence."
"People now looked to the East-end
and the Holy Table for sacred emblems."
Further south, however, at Cranham, in
Gloucestershire, the Consistory Court
permitted the erection of a rood on the
chancel screen. In the first case it was
intended to place the Crucifix on a
beam not then in position; in the second
case the emblem was destined for the
existing screen. Such subtle distinc-
tions are common in ecclesiastical
practice, and architects are bound to
keep in mind the possibilities of altera-
tion in their designs from causes other
than structural or artistic.

Mr. Pond and the Time Spirit.

MR. IRVING K. POND, the
President of the American
Institute of Architects,
who was present at the
Institute meeting on Monday, has
expressed opinions about the present
condition of American architecture which
are as frank as they are interesting. We
have not before us a complete copy of
the address which he delivered to the
American Federation of Arts, but the
extracts indicate a refreshing point of
view and a terseness of statement which
are characteristically American. He
believes that architecture should before
everything express the spirit of the time
and country in which it is produced, and
he does not find in the work of his own
country any expression of the salient
characters of its higher civilisation, of

NOTES.

In an article in the
Church Builder, giving
suggestions as to the best
course of procedure for
one desiring to build a new church, Mr.
D. Caröe deals at some length with
competition methods. While in the
n his opinions are in accord with the
gnised ideals of the architectural
profession, we feel bound to take excep-
t to his views in two instances. Mr.
öe advises that the name of the
essor should not be known to com-
petitors, repeating the oft-heard con-
tention that the latter will play up to the
essors' prejudices. Even if this were
sible, we think that it is a lesser evil
n that competitors should be asked
go blindfold into a competition with-
knowing whether the assessor is one
whose judgment they can place any
ance or not. There are many eminent
hitects who are by temperament quite
suited for the position of assessor, and
perienced competitors know quite well
se to whom they would, or would not,
prepared to submit designs. The
er point to which we must refer is
way in which Mr. Caröe deprecates
application to the R.I.B.A. in the
agraph we quote:—

"It is not unusual to apply to the President
the Royal Institute of British Architects
appoint the assessor; certainly a way out
a difficulty if a committee is unable other-
e to agree. But the advantage of the
cedure is open to some doubt. More often
n not the President—quite naturally—
points one of his colleagues on the Council,
it seems reasonable if such appointments
regarded as among the distinctions of
ce. But the Institute Council is an annually
cted body, and, although always comprising
n of distinction, is not infrequently chosen in



No. 1, Bedford-square (1771). Thomas Leverton, Architect.

From Messrs. Richardson & Gill's "London Houses from 1660 to 1880." (B. T. Batsford.)

its idealism, its altruism, and many other fine qualities. And as the conditions of contemporary civilisation very remotely correspond with those of ancient Egypt, Greece, or Rome, "this age," he says, "holds no place for the extraneous application of the borrowed finery of art, but must insist on an expression of the vital principles of structure and the rational development of ornament which shall not obscure the vital thought, but which shall be of intrinsic worth in defining the character of the mass, and in conferring charm upon the structure." And then, with extreme candour, he proceeds to illustrate instances of "brutal utterances of architectural untruth" from contemporary American work. In referring to buildings designed for banks, theatres, churches, schools, factories, and the like, he holds that we have "no record of such prostitution of art even in the most debased Roman period." They seem to be, he says, "cut off by the rod from some interminable Roman colonnade." Mr. Pond will find few to disagree with his statement of general principles with regard to the purpose of architecture, although they may find his application open to argument. A national style is not evolved in a day; and, rightly or wrongly, it has been thought that classic work provides the rules of the architectural syntax. Work after the character of Robert Louis

Stevenson's "sedulous ape" may perhaps too frequently be the result of a student's enthusiasm; but we do not think that it would be difficult to prove that contemporary work most likely to endure as representative of the *Zeitgeist*, even including some of the German and Austrian phases of the type known as *l'art nouveau*, has been founded on a knowledge of the structure of classic art.

Architecture and the Press.

AS AN indication of the average view of the Press where architecture is concerned a recent note in the *Globe* is illuminating. The writer, or the local person with his eye on the rates who has inspired him, discovers certain qualities in a school building which has just been erected at Bromley more appropriate to the dignity and taste of a country mansion than an educational establishment subsidised by the taxes of the municipality and the State. An admirably designed wrought-iron gateway serves as a particular illustration of the *Globe's* point of view. The gateway is altogether too good. We do not happen to know the locality in which the architect, Mr. Burke Downing, has built his school or its position in regard to traffic, but we may safely say, we think, that his gateway (which was illustrated in the *Builder* of October 20) is in a position which makes it a matter of more public

importance than the gateways of most private mansions. But there are larger matters at issue than that concerning equally the educationalist and the taxpayer, which may be readily summed up. With regard to the first, for instance, a scheme of education can be considered complete which does not take into consideration the educational influence of the scholar or student's environment, of the things with which his eye (through which his mind operates) comes into daily contact; and as to the second, which concerns the taxpayer, we doubt that consideration design which involves the better application of materials to their purpose is usually more expensive at first cost than the work of inferior artistic quality, while the advantages in the long run cannot be questioned.

Balliol Chapel.

WE commented in our last issue (p. 499) upon the protest of Mr. Norman Shaw and Mr. Basil Champneys against the threatened destruction of Butterfield's Chapel at Balliol College, expressing our agreement with the protest. As we pointed out, the work of Butterfield does not appeal to the sympathies of all, and may be too early to attempt an estimation of his position among the architects who made their mark in the XIXth century, or to say with conviction that his work will have a permanent or any influence at all upon the architecture of the future; but there can be no doubt of the individuality and interest of his buildings, and of the fact that he was an artist whose unquestioned love for his work; and those of our readers who hold similar opinions will be glad to read the following paragraphs from a letter, over the signature "H. C. Sotheran," in the *Saturday Review* for the 4th inst. :—

"Butterfield made his mistakes. He was unbending, wilful man, perhaps, and certain in Winchester College Chapel he came woefully to grief; as did, alas, the chapel! He saw one thing at a time, and had his way. But are we always going to do the same?"

He was a very great artist; with him architecture was alive; it bore his mark; its smallest detail had his personal touch. Not least his Balliol Chapel. Its slender spirelet, its thorn-tracery, its banded walls, all tell of Butterfield, as they do of Ruskin and the "Stones of Venice." We are all now sneering at Victorian taste. It had its faults, and we need not fear to smile, if only we do not forget to acknowledge what we owe. To those who remember, to defend seems absurd. Its mistakes were made to give us our inheritance; and if we have forgotten those who follow us will record our debt to it. They will not overlook that it was decided to destroy Balliol Chapel in the week in which *Life of Ruskin* was published! As to Oxford, architectural history is the history of English thought for eight hundred years. They will not fool who try to wipe out the history of the XIXth century."

This is well put, and we hope it and other protests may lead to the abandonment of the proposed destruction.

The Railway Outlook.

THE forecast at the present moment may be described as "stormy and uncertain, with occasional bright intervals, possibly clearing later." It would be rash to prophesy more definitely. The firm attitude of the companies—whether it does or does not make for peace—cannot be characterised as other than consistent. They undertook to abide by the decision of the Commission and simply reiterate their promise



No. 35, Brook-street, W. (Greek Revival.)

From Messrs. Richardson & Gill's "London Houses from 1660 to 1830." (B. T. Batsford.)

ing that the Report might quite con-
nably have been as unpalatable to
n as it has proved to be to the men,
latter should have consented as
lly, if reluctantly, to accept it.
uld they fail to do so, even though
companies are, at the same time,
ing the most far-reaching concessions
have been proposed in the history
our railways, their attitude would
oubtedly alienate public sympathy in
event of another general strike. There
however, ample time before the date
for the return of the ballot-papers
h are being issued for the purpose
esting the feeling of the men on this
it for a calm and dispassionate view
the situation; and we may express
ope that another costly and bitter
gle may be averted. With winter
ad, and the coal-mining industry very
etled and disturbed, the effects of
her railway stoppage would be more
strous than before.

PICTURE EXHIBITIONS: SPAIN AND TANGIER.

is rare to find a grasp of pictorial effect
bowed so keen a sense of architect-
l form as is displayed in the work of
Henry C. Brewer, now on exhibition
the galleries of the Fine Art Society.
artist who possesses the faculty of utilis-
mass and balance in his work more
uently expresses himself mainly by
e and not to any great extent by the
nate study of detail. This, however,
of the case with Mr. Brewer's delightful
er-colours of Spain and Tangier, which
e giving a sympathetic rendering of
itectural detail, are no less admirable
he qualities of colour and composition.
an exhibition as this cannot fail to
rest the architect, who will see buildings
h he probably already knows and
ures presented to him in a fresh light,
to the skilful selection of point of view
of effect that distinguishes these works.
We were particularly struck with the
ities displayed in the range of colour
mes, which, while always harmonious,
er intensely the characteristics of the
e as it impressed the artist. So many
sts seem to have conventions in colour
pages that persistently dominate their
k, but Mr. Brewer is fortunately able
eep his imagination open to the influences
his subject, and thus to transmit the im-
pression it has given him, free from any alloy
conventional method.

Thus the bright costumes and sunlit walls
the market place of Leon and that of
ovia almost dazzle us with their sparkle
e brilliancy, while in the evening light
e Bridge of Alcántara, Toledo, conveys
eeling of mystery and repose. Equally
ful, but in a warmer key, is the evening
ly of the Alcazaba, Tangier, while the
ys and warm browns of the Bridge of
Martin, Toledo, convey a feeling in sharp
trast to the soft reds and blues of ships
water set against the glowing walls
Seville on a sunny afternoon. But,
we have indicated, composition and colour
not the only qualities claiming our
ention; the architect, often irritated
the slipshod way in which the painter
frequently treats the beautiful detail of
buildings he depicts, will delight in the
ing attention that Mr. Brewer lavishes
them.

As examples of this, we publish this week
reproductions of his drawings, "The
Ansepts, Orense," and "The Portico at
antiago." These are typical of numerous
derings of Gothic work in Spain; among
ers we may mention views of the cathedrals
Toledo, Seville, Leon, and Cuenca.
The studies of Moorish work at Granada,
rdoba, and Tangier display no less

sympathy with its essential qualities, and,
indeed, there are very few works in the
whole exhibition that do not make a strong
appeal to all those who are interested in the
architectural developments they portray.

MODERN PICTURES.

The Goupil Gallery Salon has for the past
six years or so provided a representative
exhibition of certain phases of modern
British art. The present exhibition is
animated and interesting as a whole, while
there are individual works which are among
the best of the particular artists represented.
It is not a little curious to find at this time
of day a picture of Mr. Walter Greaves
appearing in a collection of works of ultra-
modern tendency. But to say, in conse-
quence, that the lack of appreciation with
which this artist has hitherto been rewarded
is due to the fact that his work has been in
advance of its time would be absurd. There
is much, for instance, that is characteristic
of the classic painters of the Netherlands in
the atmosphere, detail, and general working
out of his "Chelsea Regatta," placed at the
entrance of the first gallery. As the Goupil
Salon contains over 300 works, including
drawings and water-colours, the majority of
which have qualities of individual interest, we
are unable to do more than casually refer to
one or two of the more prominent pictures.
Among these, there is the "Souvenir de
Noël" of Mr. G. W. Lambert: a girl, with
black hair, dressed in pink, wearing a red-
paper cap from a Christmas cracker, in
which the treatment suggests that this
artist is transferring his allegiance from the
classic Spanish school to certain modern
masters who have been inspired by it. The
work of Mr. Glyn Philpot indicates that he
has developed from the precocious mastery
which was characteristic of his pictures a
year or two ago into a transition stage, in
which we discover a certain hesitancy of
method and of outlook. He remains as yet
an artist who has to fathom his own
depths. The picture of the artist and his
model entitled "The Rest Time" by Mr.
William Strang, is as powerful as any of his
recent works. The six pictures of Mr. Augustus
John suggest a post-Impressionist mood, of
which it is a little difficult to grasp the
import at a first seeing. Various phases,
indeed, of the same movement are to be
found upon the walls, and obviously, with
one exception, they are works of serious
intention. Mr. Wilson Steer, Mr. Tom
Robertson, and Mr. Von Glehn all revel in
the play of sunlight upon the multitudinous
and crowded leafage of trees and their
intervening spaces. In the small seascio
plage studies of Mr. Walter Bayes there is a
charming balance of composition and colour;
Mr. Van Anrooy's "The Green Court,
Canterbury" is interesting, and there are
the landscapes of Mr. Peppercorn and many
other pictures of distinguished merit.

EAST LONDON MEMORIAL TO KING EDWARD VII.

The bronze bust of the late King, which has
just been erected in the garden of Mile End
waste, was executed by Messrs. Henry Harris &
Son, and stands upon a pedestal of polished
marble, 8 ft. high.

PADDINGTON TERMINUS, GREAT WESTERN RAILWAY.

Extensive improvements are being made of
the terminus and its approaches, built by Brunel
nearly sixty years ago. On the northern side
three additional arrival platforms will be
added, making the total up to twelve, with a
roadway between Nos. 10 and 11. No. 1
platform is being lengthened upon the site of
houses in Westbourne Park, and of the
company's workshops and sheds, for which new
provision is made upon 60 acres at Old Oak
Common, Wormwood Scrubs, with separate
shunting lines into the terminus. Westbourne
Park Station and junction is to be reconstructed,
and six of the nine bridges between that station
and Paddington have been rebuilt. The
departure platforms will be greatly increased in
length, as well as No. 1, and a new glazed roof
will cover the whole.



OPENING MEETING OF SESSION AND PRESIDENT'S ADDRESS.

THE first of the sessional meetings, 1911-1912,
of the Royal Institute of British Architects was
held on Monday at No. 9, Conduit-street,
Regent-street, W., when the President, Mr.
Leonard Stokes, occupied the chair and
delivered the opening address.

The minutes having been taken as read, and
members attending for the first time since their
election welcomed by the President, it was
announced that the nominations included five
Fellows, fifty-six Associates, two Hon. Asso-
ciates, and forty-nine Licentiates.

The President then read the following

"Since I had the honour of addressing you
last year we have passed through all the glories
of a Coronation, and long may our beloved
patron George V. live to wear the crown, placed
upon his head amidst so much rejoicing and
surrounded by so much pomp and splendour!
Such an occasion naturally gives great oppor-
tunities to the architect and decorator, and I
think we may congratulate ourselves upon the
fine results achieved in many cases. It is, no
doubt, to be regretted that more use was not
made of our services; and that, when they were
called in, our schemes were not more com-
pletely carried out. Nevertheless, the best
results along the great processional route, and
elsewhere, were produced undoubtedly—as
might have been expected—by our noble selves
and not by the commercial firms too often in
evidence. It would be invidious to mention
individual cases, but I should like to place it on
record that the most effective, pleasing, and
characteristic of the many great efforts to adorn
our streets and buildings were those produced by
architects. The only case of misplaced archi-
tectural genius that I noticed was the annex to
Westminster Abbey, erected "in the Gothic
style" at large expense. Surely the culmin-
ating point of the great procession along an
otherwise gaily-decorated route should have
been something better than a mere plaster
sham?—supposed, no doubt, to be in harmony
with the Abbey, but really a very poor com-
plement to it. One would have thought a fine
marquee in gold and gorgeous colours sur-
rounded by Venetian masts carrying flags,
banners, and pennants much more suitable to
the occasion than an impertinent imitation
Gothic building.

Closely bound up with this same subject is the
unfortunate *impasse* connected with the com-
pletion of the great processional road through
St. James's Park. This road is in itself a fine
thing, but how it came about that it has no
proper opening into Trafalgar-square is quite
incomprehensible, and, I fear, is another illustra-
tion of the hopeless manner in which our public
improvements are invariably mismanaged. In
this case a processional road starts from a
palace, and leaves off, if you please, with a
flourish of trumpets behind a row of houses
which practically block its further progress.
And when the houses have been dodged, further
progress is effectually barred by an underground
convenience! I should have thought that the
possibility of getting properly and effectively
into Trafalgar-square would have been the first
thing to consider by those responsible for the
scheme, instead of the last, and it now looks, I
fear, practically impossible ever to make a really
good finish towards the Square without spending
a further huge sum of money, which might have
been avoided if the scheme had been properly
thought out from the first, by all three of the
large public bodies really interested in the
scheme, instead of by one alone, which one went
to work apparently without any regard to the

other two until the last moment, when, alas, it was too late! Architects are unfortunately too often forced, by the near-sighted policy of their employers, into designing incomplete schemes of this sort, and get all the blame for so doing, whereas they, of course, can only do as they are bid, on the land at their disposal.

London Improvements.

This brings us once more face to face with the fact that there really should be one authority responsible for the whole of London, and not several as at present. London with its seven millions of people is as important and probably as difficult to govern as many a European country; and instead of its City Corporation, its London County Council, and its two dozen or so of Borough Councils, with the Office of Works and the Woods and Forests thrown in, one would have thought that at least one Minister of the Crown—aided perhaps by a committee of experts—would have found work enough to engage his time in looking after London and seeing that its affairs were properly managed.

Mr. Waterhouse last session read us a most interesting paper on this subject, but I fear his suggestion of a chief architect acting with the architect from each Borough Council would probably cause friction and confusion, and I would much prefer to take, say, H.M. First Commissioner of Works, and—after divesting him of many of the duties he now performs—make him responsible for the proper domestic government of London. He should, of course, have a good deal of power and some knowledge and taste. There are, I assure you, grave reasons for some change even from an architectural standpoint; take, for example, our street improvements. Most of us can remember when Piccadilly-circus was improved—into a hopeless muddle—and it is now proposed again to alter it, and make it very much what some of us in this Institute suggested at the time! But this, of course, now can only be done at a very much greater cost. Shaftesbury-avenue and Charing Cross-road are each wide thoroughfares, but both hopelessly laid out from a town-planning point of view. Kingsway is quite out of scale with its neighbourhood, and has, as I told you once before, two ends at one end, and no proper end at all at the other! The alterations at the Marble Arch have perhaps relieved the traffic but spoilt the appearance of the place, and the slice of Green Park that was thrown into the road by Hyde Park-corner has done no good whatever—though I believe it was done to please the police—and the ordinary use of the road are not in force now at this spot, which will lead, I feel sure, to some horrible accident.

If we go a little further back still, what a great opportunity was missed when the land behind the Albert Hall was dealt with! This is now covered largely by public buildings, and yet none of them look well placed, neither do they tell as a group, as might have been the case had the land been properly laid out, as it certainly would have been in any other country but ours. This all shows that such work should not be left to amateur Committees or Corporations, driven this way and that, first by one consideration and then by another, but should be in the hands, as I have suggested, of, say, a Minister of the Crown, who should advise, control, and direct the various authorities now responsible for the government of London, and see that they worked together and for the good of London as a whole, and that their various schemes and plans formed part of a comprehensive whole, arranged with due regard to the future.

Surely some general scheme for the improvement and development of London in the future should be at once got out, and might be taken in hand by the suggested Minister? In Rome we were recently shown a plan which is to be carried out during the next twenty years, and all the property so required has been scheduled and the price fixed, and any improvements on it can only be made at the owner's risk, knowing that it may be wanted at any time during the next twenty years. We, however, do not appear to realise the importance of a comprehensive scheme, and the only people who do know, to some extent, that the public really likes well-laid-out and well-designed buildings are those who run exhibitions, such as the White City. When will our Corporations learn the same lesson, and realise the fact that there is money in it too?

Take a concrete example which has been exercising some of us a good deal lately, viz., the Corporation of London Bridges Bill. This Bill was promoted by the Corporation of

London, and has now become an Act of Parliament, and provides for rebuilding Southwark Bridge, and for building a new bridge to be called St. Paul's Bridge close to it. Now we all know that the traffic in the City is already about as congested as it will can be, so what it will be like when fresh streams of traffic are created flowing to and from these two great new bridges heaven only knows! It would seem a wiser policy to try rather to coax traffic away from the heart of the City instead of into it, particularly as the enormous cost of land tends very much to prevent improvements there being carried out on any very comprehensive scale. But the City has money to spend on bridges, so spend it it must, and in the City precincts, too, quite regardless of whether it might not be far better to go to work either higher up or even lower down the river. A Minister of the Crown might help us here.

One last word on St. Paul's Bridge. This Institute has for years been agitating, as you know, for proper architectural consideration for this bridge from the outset, and the Corporation turned a deaf ear to us. Parliament, however, came to our help, and at the eleventh hour three well-known architects were called in to advise the Corporation. This was what we had been working for all along, and I think we should congratulate ourselves on having got it. I am asked for in the end. That some of us may have been disappointed at the form the advice took is not the point. The lay-out received architectural consideration before the Corporation got its Bill; and now we can only devoutly hope that if both bridges are gone on with the Corporation will take such steps as will ensure the designs of these two great bridges being as fine as it is possible to make them.

I should like to explain, however, the reason why we architects seem to be somewhat divided on the subject of St. Paul's Bridge. The reason is that there are two very different ways of looking at the subject; the first may be said to be the aspect of the bridge itself, and the second the aspect from the bridge. Unfortunately it is not easy to combine the two, and hence some of us took the view that the first thing to consider apart from the great traffic problem—was what we saw from the bridge, and others what we saw when we looked at the bridge itself. Doctors are allowed to differ, so I must claim for our profession the same privilege. If not too late, however, I should like even now to suggest that Southwark Bridge might be rebuilt first so that we may see what effect it has upon the traffic. This course would have the further advantage of preventing the river and its vast floating traffic from being obstructed by works to two bridges so close together at the same time.

Architectural Departments.

I have already suggested that my proposed new authority might be the First Commissioner of Works after his present duties had been lightened. These I would lighten by very largely reducing the size and output of the huge architectural mill now running under his control. This mill turns out work just now of the annual value of 1,195,410*l.*, which large sum is spent on Palaces, Law Courts, Government Offices, Schools, Labour Exchanges, Museums, Post-offices, and Telephone Exchanges, etc., and on the maintenance of similar buildings over which the Office of Works has control.

Now it will be seen that the work turned out is very varied in its nature, but unfortunately very uniform in its architectural character. I want to be strictly fair in what I say, but I honestly think that the bulk of the work produced by the Office of Works is poor from an architectural standpoint. Some of it has been better of late, I admit, but let us take post-offices as a particular speciality. These may be seen in our towns all over the land, and are generally, as far as I have seen, pretentious and costly and devoid of those good qualities essential in really fine work, and their outer buildings are very much the same.

So much for the quality of the work; now for the cost of production. The architectural staff which produces this work receives 71,849*l.* per annum, or just about 6½ per cent. on the outlay for salaries alone, without any allowance for rent, rates, taxes, pensions, fees to specialists, cleaning, lighting, heating, porters, messengers, and various other sundries. Five or six years ago the salaries amounted to only about 3½ per cent. on the amount expended, which was then about 400,000*l.*, or one-third of what it is now! Fifteen or sixteen years ago only about 250,000*l.* was spent per annum, and the cost of

architectural administration was only about 2 per cent.! These figures seem to show that the larger the office is the more expensive becomes per cent. to administer.

I maintain, therefore, that, as the work now produced by the Office of Works is not very good and not very cheap, the bulk of it might with advantage be put out to independent architects to be better done at a smaller cost, and to relieve the First Commissioner of Works considerably. This you will see has the advantage of killing two birds with one stone, for thus enable the First Commissioner to do work which we want him to do, and free him from work which we would much rather he did not do.

You must not think that I have any particular grudge against the Office of Works, or that I am finding fault with the many good friends I have on the architectural staff there, for my remarks are directed against all large public bodies who attempt to do their own architectural work. The recent Congress at Rome passed a resolution to the effect that "Architectural works intended for the State, municipalities, or other public bodies, should only be entrusted to qualified architects after competition or otherwise." It will thus be seen that the architects all over the world are in accord, and in order to further the case I have looked up the cost—quality against cost—of the architectural work produced by the Admiralty and the War Office. Both of these authorities run large architectural departments spending in the figures about a million and a half per annum each, the former at a cost of about 7 per cent. and the latter about 10 per cent. in salaries alone, and in neither case, of course, included the cost of rent, rates, pensions, cleaning, lighting, heating, etc., which would probably raise the cost by another 1 or 1½ per cent.

I should like to have been able to include the London County Council in my list, but I find no published figures on the subject. I told, however, on good authority, that the Architectural Department of this body is very economically at present, greatly to the credit of the very able gentleman at its head. When, however, in the course of time he retires I venture to predict that no one else will be found with the same capacity for work, the power of organisation; consequently confusion will arise, and the cost of production go up something like that in the three other cases have quoted. And the more these departments undertake now the greater will be the fall there. For it stands to reason that one man cannot have time to design all the work produced by a great office of this nature, and if he has not time to do it himself it must be done by others. It is, therefore, at the mercy of his staff, and if the mercy of his staff, why not at the mercy of the outside architect? In the case of the London County Council, their architect is even called the Superintending Architect; his duty should, therefore, clearly be confined to superintending the work, not of a staff, for then becomes his own work, but of those architects who work in London under his jurisdiction. This principle applies equally to the architects of the Office of Works, the Admiralty, the War Office, and other large public or municipal offices, for all these gentlemen, if they attempt to design any work themselves, may neglect their staff, and if they leave it to the staff it must be good, bad, or indifferent according to the staff, for one man even cannot control a staff the salaries of which at the Office of Works, for example, amount to something like 1,400*l.* per week, or perhaps as much as 99 per cent. of our practising architects pay to their staff during a whole year instead of one week.

In these days of free trade and buying in the cheapest market, why should public offices given preferential treatment? If there are a number of professional men of high standing prepared to accept a recognised scale of fees why should these huge cormorants receive about half as much again as the ordinary rate? Here, too, I know, are in demand just now, and venture to suggest that, without robbing any one at all, thousands of pounds might be saved annually from the unnecessary expenditure now involved in running these large architectural mills. The three which I have named together spend annually in round figures about four or a half millions on building work at an average cost of about 9½ per cent., or 4½ per cent. more than the recognised payment for such work. This equals rather over 200,000*l.* a year paid unnecessarily for the privilege of running these departments. It may be contended, however, that

departments are necessary, as there are a few of works, like painting park-railings, ding broken windows, etc., that must be done; but a staff of surveyors could do very well without mixing up architecture in matter at all, as, I imagine, was intended in the Office of Works was established.

Figures may not, of course, be quite correct figures never are—and those who understand a better than I do may be able to put a much more complexion on them. I can only say that we worked on the official published figures, and these, as a rule, are carefully and faithfully worked with a view to their being swallowed by the British taxpayer, and I hope I have not overstated the case.

Again, it must be only too obvious that a large permanent office is not a likely place for the location of various kinds of architectural work either well or cheaply, for the originating generally done by understrappers and sent to the higher grades for approval or otherwise—a sort of Class of Design—and I have heard of as many as nine separate designs being made for one building before such approval was obtained. In other professions one man professes to be able to specialise in all subjects? Are there not landscape painters and portrait painters and some persons who work best in low relief and others in round? Do not some lawyers go in for criminal work and others for the Probate and so on? Are there not doctors who cut at insides and others who cut our throats? I even with us, some architects do church work and others domestic work; but these offices, as far as I know, claim to be able to do everything from a palace to a prison, and doubt they can, and equally well too!

The Future of the Institute.

I have already referred to the Ninth International Congress recently held at Rome, and the resolution respecting architectural work of the State and municipal bodies being entrusted to non-official architects only. Of resolutions passed, perhaps the following are the most interesting, viz.:

(1) That the right to use the title of architect should be reserved to those who have obtained it as a result of a proper examination and after an artistic, technical, and scientific education.

(2) That the title of architect should be held in the same rank as the title Master of Arts, Doctor of Medicine, etc.

These two resolutions are particularly interesting to us just now, for, as you know, this Institution has been before the Institute as long as I can remember, and it may help us to know what other architects think on the same subject. As, as you know, have been working towards the ends for some time past, and as a preliminary step have created a new class of members called Licentiates, nearly two thousand of whom have already joined our ranks. With this object, too, of organising the profession—the sanction of Parliament—into a strong, united, disciplined, and protected body, negotiations have been proceeding between this Institute and the Society of Architects, it being that two Kings in Brentford were hardly necessary, and that together we should be much more powerful than working independently. A number of meetings were held early in the year, as you are aware, and the general principles of a number of the details were satisfactorily worked upon. Unfortunately—perhaps through some fault—we got on rather faster than our advisers approved of, and we were brought to a halt by finding that we had perhaps exceeded the powers we possess under our existing Charter and by-laws.

This was rather a shock to some of us, but as we had gone so far, we felt that in justice to ourselves and to the Society of Architects we could not do otherwise than make good the mistakes made. Your Council is, therefore, been considering a revised Charter and by-laws which will enable the two bodies to unite under terms I think advantageous to both parties. This Charter and by-laws will, I hope, be very shortly laid before you, and I trust you will pass them, not, of course, without due consideration and discussion, but without forgetting what has already been taken care of. For many reasons it seems to me obvious that the two societies should unite, but the reason that will perhaps appeal most to our only too human natures is the fact that by building up and increasing the power and influence of this Institute we are building up and increasing our individual power and

influence. For the fact of belonging to a powerful body strengthens each of us, and makes us more confident when dealing with the many difficulties that abound in our multifarious duties.

If this address should happen to be read in the provinces, I hope those interested in the good of the profession will endeavour to make as many of their *compères* as possible join our ranks and so still further help to build up a really powerful and representative body. Another way in which our internal economy might be strengthened would be by a number of our Associates who have been Associates for years becoming Fellows. They are, in a number of cases, highly qualified in every way to become Fellows, and I hope they will do so.

It is a matter for congratulation, I think, that an architect has been associated with a sculptor in connexion with the King Edward Memorial. The ideal method, no doubt, would be for one man to do the whole thing, but until our sculptors take a little more trouble to ground themselves in architectural matters the only course I can see that will ensure our monuments being satisfactory is to associate an architect with the sculptor: the custom hitherto too prevalent of leaving the sculptor to produce his own so-called architecture, or to get some compliant ghost to do it for him, is most unsatisfactory.

A British School in Rome.

You will be glad to hear that there is now an immediate prospect of something in the nature of a British School being established in Rome, such school to embrace architecture, painting, sculpture, and archaeology. Nothing, however, very definite has been settled, but there are prospects that, aided by private benefactors, helped by the Commissioners of the Exhibition of 1851, and backed up by the Royal Academy, the Royal Society of British Sculptors, and ourselves, a school will be shortly opened in Rome. Scholarships connected with it will be established, I anticipate, by this Institute with funds lately left us under the Jarvis bequest, and I think I am at liberty to say that the Commissioners of the Exhibition of 1851 will probably also give at least one scholarship each year to architecture, painting, and sculpture, so that with students who we hope may be able to attend this school, either privately or encouraged by the universities and schools about the country, a good school should be got together; and in such an appropriate centre for study as Rome, where most of the other nations have schools, we British subjects should be able to offer our students the means of completing their studies at a much higher level than has hitherto been the case. For it must be remembered that if we architects are to hold up our heads with any degree of success we must have something in them, otherwise the public, which is very quick at finding out impostors, will go back to the jerry-builder, leaving us to pine in deserved obscurity."

Sir Robert Hunter, Kt.,

in moving a vote of thanks to the President for his address, said that in regard to one prominent part of it they could hardly expect him to be in agreement, and while the contention that the Government architectural work should be thrown open was naturally very well received by the meeting, for obvious reasons, it could hardly be welcomed by an humble Civil Servant, who might, if the suggestion made by the President were acted upon, see a large number of his colleagues discharged. The figures the President had given, however, were well worth the attention of the Treasury, who perhaps could explain the matter and cause those figures to bear a different appearance. However, he believed that the great bulk of the work of the Office of Works consisted in supplying post-offices, and, while he could say nothing in that meeting as to the architectural appearance of those buildings, he did not think that anyone had suggested that the construction of those buildings was not thoroughly sound and good, and he was sure that they were well adapted for the purpose for which they had been designed. With another part of the address he was in thorough agreement, and they would be all agreed that it would be a very good thing if some controlling authority could control and supervise the execution of new so-called improvements in London. It always struck him that the great difference between London and Paris was that while in London they had many fine buildings, splendid open spaces, etc., there was a great absence of those broad effects which

catch the eye at every turn in Paris, and which gave him so much pleasure. In London, when we did get a broad effect of any kind we did not seem able to keep it. There was one part of London which was constructed as a uniform design, i.e., the whole district of St. James's Park, and the Duke of York's Monument, and up to Regent's Park, and, while opinions might differ as to the treatment, it was all one harmonious whole, which, however, had now become neither one thing nor the other, thanks to the Office of Works. There were difficulties in a city like London of enforcing adequate control: the enormous commercial growth of London and the enormous value which land in the centre of the City obtains afforded a perpetual incentive to put more buildings on a given site and to get more value out of the land in that way, and that tendency must, in some measure, run counter to the desire to carry out a uniform and harmonious plan. And there was also that feeling of individuality which had hitherto characterised this nation, which resented hard-and-fast control by a central authority.

Much consideration must take place before any definite authority is established for such control as the President suggested, but that some control of the sort was wanted they would all agree. The sovereign remedy for all such architectural ills was the growth of public opinion on the subject, and public opinion in favour of anything like architectural beauty on a large scale was a matter of recent growth only. Hitherto, when any scheme for laying out a new part of a city, or any question in which considerations of beauty and symmetry had arisen, the general attitude of the public man had been that, while it would be very nice to have a pretty building and a well-designed street, considerations of beauty must kick the balance as compared with considerations of finance. That feeling was, he believed, gradually being altered, and there had been signs of better things lately, such as in the St. Paul's Bridge question, in which, however opinion might differ as to the final result, Parliament had directed that opinion should be taken from the aesthetic point of view, and that, whatever else might be said, had been done. He desired to congratulate them on the growing importance of their profession. In recent years people took more interest in getting better buildings designed than was the case a few years ago, and not only was there greater interest in the production of better individual buildings, but there was the whole subject of town planning, which was the growth of yesterday, and which had become a question of so much importance, as was shown, for instance, by the recent Town Planning Conference, which was opened by a Cabinet Minister and by the attempts being made on all sides to do something a little better than what we have been accustomed to in recent years in the way of growing cities and suburbs. The scope of the profession, they must all feel, was widening, and they had a great future before them. He had been told by professional friends that there had been comparatively little work amongst architects lately. He was sorry to hear that, and it might be that there was some check to building, but he could not help thinking that the architect would be the right-hand man on every local authority; that he would be called in to design not only beautiful houses and buildings, but to lay out and to plan collections of human dwellings, and, with the engineer and the medical officer of health, to provide healthier and more beautiful towns.

Mr. Irving K. Pond,

President of the Institute of American Architects, said it was a great honour and pleasure to second the vote of thanks on his own behalf and on behalf of the sister Institute. It was a pleasure to be speaking there, where there was a community of interests; in Rome, where they had recently met, they did not know very often whether they were understood or not. In listening to the address he had been forcibly reminded that the mother Institute and the child which he represented had not only community of speech, but community of thought and ideal—that the same problems which the President had reviewed that night confronted them in America also. In a great many of the larger American towns there were interests which made municipal government almost impossible, but that was coming to a solution there, as it would soon come here. What appealed to him very strongly in the address was the establishment of the proposed British School in Rome. In the case of the two St. Paul's Bridges there might be the two points of

view that the President had referred to, i.e., looking at the bridge and from the bridge; so in the case of the School at Rome there were two points of view, and there might be a division of opinion amongst them; there was the point of view of looking at the School and looking from the School. What was the School to bring them? It seemed to him that they had their own traditions, and he could not blame them for following those traditions; but he did blame his own compatriots and *confrères* for being so closely wrapped up in tradition—in the swaddling clothes they had in infancy. Americans were more bound in the traditional style than we are here. What would Rome give us? We had culture, Oxford, Cambridge, the British Museum, the National Gallery, easy access to the Continent, where we could pursue our studies. If we went to Rome and brought back forms and facts and details and applied them it would fail us in practice; but if we let the tradition mellow in our minds it would benefit and help us. The problem had been brought home to them in America. They had their School in Rome, which was conceived by a former President of the American Institute of Architects, who also gave his life and fortune to it, and it did not behove him (the speaker) to criticise it; but his advice to the students was not to use Rome as a studio, but to use it as a ground for the expansion of ideas and ideals. What the student wanted to determine in Rome was not that so many buildings were built in such and such an age with so many blocks of stone, but what was the controlling motives of the builders. When a man understood that and brought back that principle he would give much to his own community. The problems of official architecture affected American architects as much as English architects. The American Institute of Architects was the father of a law as a result of its persistent dealing with the matter, for it caused a law to be enacted which for a number of years had been in operation by which the principal works of the Government were given out to individual architects. Recently that law had been attacked in the interest of economy, so called, the case being made to show beautifully for departmental architecture, but they knew that where the individual architect got 6 per cent. for work, it cost the department something like 7½ per cent. The Government figures did not show that, but that was the fact. The law in America had given, and was giving, a higher type of Government architecture than was produced under departmental control, and he hoped it would not be overturned, and that in England a similar law might be enacted.

The vote of thanks was then put to the meeting and very heartily agreed to.

The President replied, and the meeting terminated.

The next meeting will be held on November 20 when Mr. H. H. Statham will read a paper on "Modern French Sculpture."

WOMAN AS A DOMESTIC ARCHITECT.

A MEETING of the Architectural Association Camera, Sketch, and Debate Club (Ladies' Night) was held on Thursday last week, when Mr. Edwin Gunn read the following paper on "Woman as a Domestic Architect."

"Architecture is a great and difficult art, the mere scope and meaning of which not one in a thousand laymen, or, perhaps, one in a dozen professed architects, fully understands. The broader and truer meanings of the term as relating to dealings with the masses of buildings and their design to excite definite emotions in sensitive beholders are, however, now more readily grasped than they were, owing, perhaps, to the frequent bandying of such phrases as 'grand manner' and 'town planning,' and it is commonly recognised by people sufficiently interested to care that ingenious contrivance of detail is not architecture, though forming a part of it in some of its minor applications.

Ruskin rather unkindly said of Welby Pugin in one of his scathing denunciations of English architecture (which he did not understand): 'Expect no cathedrals of him; but no one, at present, can design a better final.' Continental opinion seems to sum up the typical British architect on somewhat similar lines—'Expect no cities of him; but no one, at present, can design a better cottage.' Even this modest qualification has latterly been questioned more

than once in current journalism. It has been freely stated that all is not well with our domestic architecture, and the claims of woman as the natural saviour of the situation have been again and again advanced. I have not gathered that architecture had much to do with the claims put forward, though the writers concerned seem to have thought so. They attack, really, from another point of view. Briefly the argument is this—and I hope they will soon elaborate or develop their pleas, as continual restatement has somewhat staled their oft-reiterated cry: 'Women alone should design houses, because they live in them and understand their working.' Or, as Mr. Robertson Scott, well known as a writer under the pen name of 'Home Counties,' puts it, even more directly, 'Structures which are to be lived in most of the time by women, and are to be wholly worked by women, are planned by men, chiefly 'single men in barracks' of offices.'

It will not do to push this line of argument too far, or we shall be committed to the principle that the criminal (or should it be the warder?) must always design his own cell. But, seriously, is there anything in this claim? Where does man live? The cheaper class of (alleged) humorous papers is perhaps responsible for an impression that his time is divided between his office and his club, but this can be dismissed as obviously untrue as regards the cottage-dwelling class. And does woman so devotedly attach herself to home? Is her existence divided between the kitchen passage and somewhere in the neighbourhood of the linen closet? Not to anything like the extent she would have us believe; often she is fluttering about the West-end, corrupting her taste and making herself envious and discontented by worshipping the numerous ingeniously misshapen creations in which the fashion of the moment decrees that she should clothe herself. Enough of this, it is a side issue.

The assumption that woman, while preserving and cultivating all the domestic virtues, will yet find time to become a prolific designer of houses is, to say the least of it, amusing. For observe, it is not the mere fact of being a woman which fits her to design houses for people to live in, but the fact of being a domesticated woman; and as her architectural business increases so her fitness to conduct it would automatically diminish—a state of things not unknown with male architects, by the way. But even conceding the claims made, and allowing that woman might make an efficient designer of the domestic machinery of the house (reserving the right to object that this is a very minor part of architecture), what is to prevent man from doing, or to prove that man has not done, the same thing as well as woman can hope to do? Instances to the contrary can no doubt be produced—kitchen ranges badly lighted, draining boards for left-handed washers-up, no draw-off taps on upper floors, insufficient cupboards (I use the word with bated breath). But is anyone bold enough to declare that the intellect of man is incapable of satisfactorily grappling with such very simple problems of arrangement, or that male architects would have a monopoly of carelessness and stupidity? And, after all, is there not something nobler than a cupboard? I don't mean a wardrobe. A sense of proportion is the one absolutely essential quality of the architect—not alone in the sense of geometrical ratio between masses and parts, and subjection of detail in subservience to the whole conception, but in the avoidance of any exaggeration of certain components to the sacrifice of others. For instance, it is desirable to have good drains, but the architect who designed his drain plan and fitted his house to it would not be committing architecture. An extreme instance, no doubt, but we are invited to let woman design our houses on somewhat similar lines around the domestic offices. Design in plan and section as practised by the ablest of our domestic architects is something very much more than the mere fitting together of so much accommodation (including cupboards) to serve the needs of domestic convenience. But, again, is woman always so determined in securing convenience at all costs? The woman who 'lives in the house' craving for cupboards denied by the unpractical male architect—it's quite a touching picture; but what of woman who lives in her dress craving for—not pockets, but a solitary pocket? Why? Fashion forbids! We know something of fashion in architecture, everything at present must be redolent of the days of good King George, to be followed by neo-Greek; but I see fearful visions of

exaggerated fashions in architecture if woman once gets her head! We all know the mushroom room aeroplanes, and other expansive forms of hat—practical, you will observe, in the perfect case which is permitted their wearers who seated, say, in a railway carriage. Pictorial domestic architecture if a fashion for room on a similar lavish scale but started, followed by a reversion to the toque or baby boy style. No, I don't think that woman can maintain the claims to that sweet reasonableness and hard common sense in dealing with the minor conveniences of life which have been put forward on her behalf by interested parties; one feels that she would always be prone to become, to an even greater extent than man, the master-slave to an idea, before which cupboards, sink, water supply, and possibly even roof and windows would have to retire if they did not conform.

Now, taking it as demonstrated that woman would be most likely to fall short of the hopes entertained for her as a contriver of domestic convenience, what of her claims to success as an architect? Unfortunately, the 'lady architects' who from time to time prevail upon journalists short of copy to print their wearisome effusions on the eternal topic of 'cupboards' do not seem anxious to publish their designs, so that I am acquainted with a feminine building to which the test of critical examination can be applied. There was indeed a cottage at one of the early cottage exhibitions, but—we must perforce rely on other evidence.

Woman has been fortunate in receiving the admission to a sort of pretension to 'better taste' than man. Goodness knows how came about—lack of self-confidence on the part of man, I suppose, or possibly a feeling that anything so unseemly and inessential as art was beneath his lordly notice. As far as I can gather it largely depends on woman's displayed preference for the more delicate (i.e., washy) shades of blue and pink in decoration, a fondness for draping, and a passion for nicknacks which converts the drawing-room—woman's sphere—into the most fussy and unsatisfactory room in the average house. William Morris, at least, knew better. 'There are two things,' he said, 'about which women knew absolutely nothing—dress and cookery; their twist isn't the way. They have no sense of colour or grace of drapery, and they never invented a new dish or failed to half spoil an old one.' I do not think that I need labour this point. I am not anxious to prove that the average woman is less likely to make a successful architect than the average man—who makes a precious poor one—but there is no evidence to show that she would be likely to make a better one.

Upon the physical aspects of the case I have not touched. I do not regard woman's obvious difficulties with excavations and scaffolding as really material, or insuperable. Sir Christopher Wren was hoisted to the giddy heights of St. Paul's in a basket, and I am sure that the method of transport would commend itself to any woman, who, I am given to understand, is the chief supporter (both directly and by influence) of such delightful inventions as the wiggler, woggle, joy-wheel, and similar violent pleasures at our educative exhibitions.

I confess that when I rashly undertook the preparation of this paper it did not occur to me that the argument would be so one-sided. It was my intention to array the points for and against the probability of improvement in our domestic architecture resulting from woman's entry into that sphere. But at close quarters with the subject the probabilities have appeared to me to be all in one direction, and I shall be really grateful to any one who will redress the balance.

The proposition which I shall ask to be allowed to submit to the meeting is—'That available evidence does not justify the assumption that woman would improve on the domestic convenience of the average man-planned house. Before leaving this proposition to the animates of the debate which I hope it may provoke I will briefly summarise the points which I consider vital—'

(1) If there is anything to fit woman as better designer of livable homes than man, it is her intimate and constant touch with the working. This I fear is not so intimate as constant as it was, and in the case of a successful professional must become still less so.

(2) In any case the needs are relatively simple, and the man who cannot grasp them will certainly fail to grasp the more complex needs of the larger problems of architecture, and hence be a poor architect—and there must just as well be poor woman architects.

(3) Evidence in the spheres in which woman already holds free sway tends to show that invention is the last consideration entertained by design.

Miss Cohen,

On opening the discussion, said she was convinced that there was at least one direction in which woman could improve on the average man-planned house, and that was in the provision of labour-saving appliances, the need for which man did not apparently recognise. Also inadequate provision was usually made for fires, and in some country cottages it was, as a consequence, impossible to shop economically. She also felt that they had a grievance against male architects for the many houses in which windows would not open, and to this insufficient ventilation attributed many cases of consumption. Bedrooms had no fireplaces, basement stairs were steep, and small-paneled casements made cleaning very difficult. Kitchens were not sufficiently light and airy, and she had seen instances which could not possibly accommodate a fire. She held, however, that there was really no sex in architecture. Mr. Gunn had spoken of the lack of examples of woman's architectural work to which he could refer, but if he turned to America he would have found there a great many woman architects in successful practice. At any rate, whether or not woman was fitted to perform the whole functions of an architect, she thought there would be no doubt that as an adviser to a male architect she could fill a useful place in the design of domestic work.

Mr. H. W. Britton

thought that the architect could not be blamed for the deficiencies in houses pointed out by Miss Cohen. Men might be to blame, but hardly architects, or, at any rate, modern architects, for the craving for cupboards, he felt that this was wrong and unfortunate; things which could be thrown away (particularly old books) were stuffed into cupboards and got musty; there was a sentimental feeling about musty volumes with which he entirely disagreed.

Mr. Hake,

proposing, said that it was not only old things and books which people put in cupboards—men kept many things there which men could be very sorry to do without.

Mr. A. G. R. Mackenzie

said that his sympathies were with woman in his debate. He felt that they naturally knew more than men about domestic conveniences, and confessed that the point as to small panes of hard to clean had never occurred to him. In any rate, he knew many women who would make better architects than many men.

Mr. J. D. Crace

said that he believed it was quite true about the number of American lady architects, but he thought that most of them acted in a consultative or confined themselves to decorative sign and furnishing, and it appeared to him that these fields of action would much better fit women. He strongly advised them to limit their activities to decoration and garden design, which they could follow without physical inconvenience. As to putting old books away in cupboards, it was necessary in large towns, the sulphur-laden air very soon rotted the other binding.

Mr. P. H. Adams

reverted to Miss Cohen's remarks about sufficient ventilation, and pointed out that it was not necessary to bring in lady architects to cure this—it had already come out by man-made by-laws, which made it necessary to have a certain proportion of windows opening in each room. He confirmed Mr. Crace's impression as to American lady architects and their sphere of action.

Miss Snow thought that the ideal state of things was co-operation.

Mr. A. L. Snow

said that as to co-operation it was practically impossible to avoid it. In his brief experience seemed to him that the person who counted as the client's wife, who generally said pretty much what she wanted as to such domestic details as were in question, and saw that her wishes were carried out.

Mr. Jacob

agreed with Miss Cohen that there was a lack of consideration given to labour-saving devices, and suggested as a remedy that the male architect should take on household duties for a month.

Mr. A. H. Belcher

spoke strongly against women competing with men, and thought that woman's place was the home. Miss Cohen, interposing, asked whether every man could be expected to maintain his surplus daughters, and whether it was not often a necessity that woman should find some occupation by which she could support herself. To this Mr. Belcher replied that he thought every man should support his own family.

Mr. Dale

said that from the title of the paper he had expected rather a dissertation to prove that woman was responsible for all architecture. They had nothing to show that Adam, when a bachelor, wanted a house. It was only with the advent of Eve that a drawing-room where she could put sea-shells and such like knick-knacks became a necessity. A certain well-known philosopher had lived in a tub, and he thought that man alone would probably still do so—with half an inch of tobacco dust at the bottom of it.

Mr. Bullock

gave a graphic description of his experience of a lady client who installed herself as clerk of works and followed the workmen about all day long complaining at their slowness. The painters were her pet aversion, and she was not satisfied with their rate of progress until she was given a brush and some good stiff enamel to lay on.

Mr. Alan Potter

went to the heart of the question and gave a very lucid explanation. Given co-education he was sure that man and woman would be equal in fitness for architectural practice, but it must not be forgotten that the claim made was that woman's domestic knowledge gave her special fitness, and with the resulting decrease in domestic knowledge that special claim must vanish.

Mr. Boutcher

was in favour of co-operation, and pointed out to Miss Cohen that her small-paneled windows, though perhaps difficult to clean, were certainly cheap to repair. The simplest way out of the difficulty seemed to be that an architect should train a lady pupil and then marry her. He held that as an architect woman would not improve domestic architecture.

The Chairman, Mr. Stanley Hamp, then called upon Mr. Gunn to reply. In doing so Mr. Gunn first assured the ladies present that his paper must not be taken too seriously; he had purposely stated things rather forcibly to encourage discussion. The first point that occurred to him was, "Why did woman want to be a domestic architect?" It was no enviable lot under ordinary conditions. He felt that his position had not been seriously assailed. Admitting freely that woman might often improve on the man-planned house, the answer remained, "Yes, but not as an architect." He thoroughly agreed with the principle of co-operation, and with Mr. Snow, who had pointed out that it already existed, but he disagreed with Mr. Mackenzie that woman naturally knew more than man about domestic architecture, and felt that Mr. Potter had stated the case in a nutshell. Amid much laughter he read extracts from the daily Press on the well-worn topic, and concluded with a portion of an article on "Cupboards" (especially for the benefit of the lady visitors) from the A.A. Journal.

ARCHITECTURAL SOCIETIES.

Royal Institute of the Architects of Ireland.

An ordinary meeting of the Council of this Institute was held at No. 31, South Frederick-street, Dublin, on Monday last. The President, Mr. A. E. Murray, R.H.A., F.R.I.B.A., was in the chair, and there were also present:—Messrs. J. H. Webb, E. Caulfield Orpen, Lucius O'Callaghan, F. G. Hicks, H. Allberry, A. G. C. Millar, W. Kaye-Parry, P. Sheridan, and C. A. Owen, Hon. Secretary. The minutes of the previous meeting were read and signed. Correspondence was dealt with, including the letter of the Institute of Architects of New South

Wales re the Competition for Designs for the Federal City, which appeared in our last issue, p. 508.

The President was appointed delegate to the Congress of the Royal Sanitary Institute, which is to be held in July next at York.

The house list for the election of Council for next session was prepared in accordance with the by-laws.

Leeds and Yorkshire Architectural Society.

The first general meeting of the session was held at the Society's room, Leeds Institute, on November 2, the President, Mr. Sydney D. Kitson, M.A., F.S.A., F.R.I.B.A., in the chair. Messrs. Harold H. Woodhead and Walter Butler were elected Associates. The following changes in the officers of the Society were then announced owing to Messrs. Ralph W. Thorp, A.R.I.B.A., H. Ascoug Chapman, F.R.I.B.A., and J. H. Farrar having left the vicinity of Leeds.

Mr. Wm. Whitehead, A.R.I.B.A., elected Hon. Secretary; Mr. Peel Schofield, A.R.I.B.A., elected Hon. Librarian; Mr. J. W. Morley, F.R.I.B.A., elected member of Council; Mr. Douglas Bowman, elected Associate member of Council.

An exhibition of the students' work during the year was then held and the following awards made:—

The Society's silver medal and 5l. 5s. awarded to Mr. F. L. Kruckenberg for measured drawings of Hubberholme Church, Yorkshire.

The prize for construction, 3l. 3s. was awarded Mr. W. Voelkel for a design for an entrance hall and staircase to a public building; the winning design being a well-worked-out scheme in reinforced concrete.

The following gentlemen tied in the Design Competition, four subjects having been competed for during the session:—Messrs. E. H. Gibson, L. A. Elsworth, and P. G. Robinson. A prize of 3l. 3s. was awarded to each.

The Halden prize of 4l. 4s. was divided between Messrs. L. A. Elsworth and Walter Butler, whose work was considered of equal merit.

The Sketching Club prize of 2l. 2s. for sketches was awarded to Mr. F. L. Kruckenberg, and 2l. 2s. for detailed studies to Mr. C. B. Chadwick.

The President expressed his appreciation of the excellent work done during the year.

The next meeting will be the annual smoking concert held at the Queen's Hotel on Thursday, November 16.

Nottingham Architectural Society.

There was a good attendance at the first meeting of the Designing Club in connexion with this Society held on Tuesday, November 7.

The subject set for competition was a design for "A Co-operative Stores in a Mining Village." Three designs had been submitted, and were fully criticised by Mr. W. V. Betts, who had set the subject and prepared the conditions.

After he had placed them in the following order:—"Carbon" first, "Capricornus" second, and "Old Friend" third, an interesting discussion took place, and at the close Mr. A. E. Heazell, F.R.I.B.A. (who took the chair in the absence of the President), thanked Mr. Betts for his kindness in criticising the designs and the three competitors for submitting them.

Mr. H. Gill, in supporting this, said that, as the subject set required special treatment, Mr. Betts had not only pointed out the merits and defects, but had also given them a great deal of valuable information, which could not but be useful, not only to the younger, but to the older members present.

The Chairman announced that at the next meeting, on November 21, Mr. Burke, of Manchester, would read a paper on "Reinforced Concrete Construction."

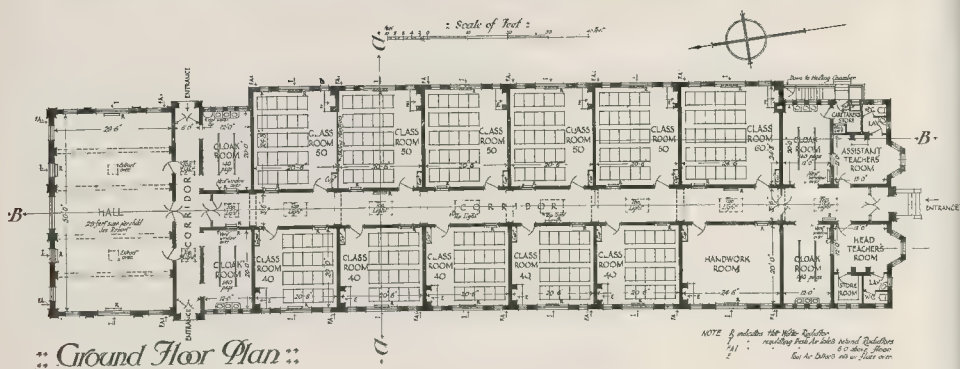
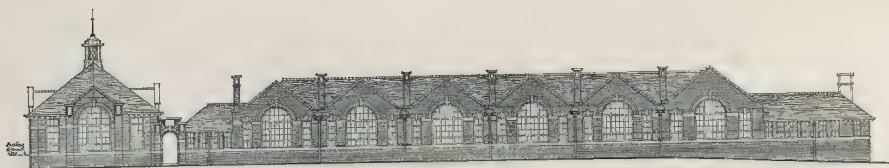
COMPETITION NEWS.

Australian Federal Capital Competition.

Members and Licentiates of the Royal Institute of British Architects are requested not to take part in this competition.

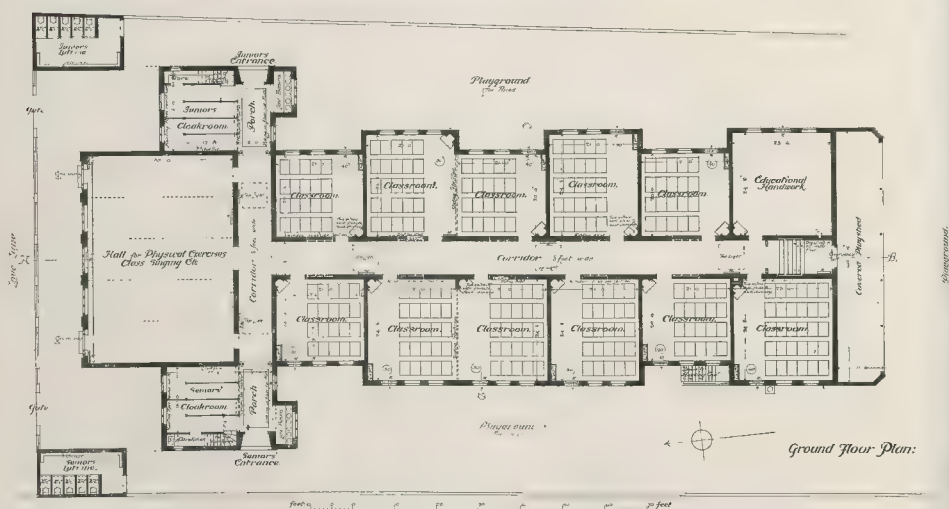
School at Roman Hill, Lowestoft.

We illustrate (pp. 536 and 537) the designs placed first and second in this competition, the result of which we announced last week. We



School at Roman Hill, Lowestoft.

First Premiated Design, by Messrs. Bryan & Hodges, A.A.R.I.B.A.



School at Roman Hill, Lowestoft.

Second Premiated Design, by Mr. W. G. Wilson, A.R.I.B.A., and Messrs. Wills & Anderson, A.A.R.I.B.A.



North elevation
to face

School at Roman Hill, Lowestoft.

Second Prize Design, by Mr. W. G. Wilson, A.R.I.B.A., and Messrs. Wills & Anderson, A.A.R.I.B.A.

stand that these have been superseded, that Mr. Abel Round, whose design was third by the assessor, will carry out the design. If this is so, we feel that an injustice has been done to the architects who won the prize by competition.

Public Library, Stafford.

Mr. Henry T. Hare, F.R.I.B.A., has been appointed assessor in this competition. Designs were sent in by January 6, and any questions should be sent to the Town Clerk, Stafford, by January 25. The author of the design placed first will be appointed architect, subject to the approval of the committee. The second and third prizes are forty guineas and twenty guineas respectively. The total cost of the buildings, exclusive of site, etc., must not exceed £4,000.

Hoarding Competition.

A few months ago Mr. W. H. Lever offered a prize to the extent of 100l. for the best designs constructed from an architectural point of view. Mr. Leonard Stokes was the assessor. The result is as follows:—50l. to Redhill, Reigate, and District Billposting Company; 25l. to the Coventry Billposting Company; 15l. to Messrs. William Booty, Ltd.; and 10l. to the Rochdale Billposting Company.

Miners' Federation Hall, Bolton.

Designs for this building must be sent in by 10 a.m. on January 6, 1912. The competition is open to architects practising within a radius of twenty-five miles of Bolton.

ENGINEERING SOCIETIES.

The Junior Institution of Engineers.

At the recent annual general meeting of this institution the scrutineers reported that the list of officers, etc., had resulted as follows:—President, Mr. Walter T. Dunn; Vice-Chairman, Messrs. S. Bylander and Percy L. Young; Treasurer, Mr. S. V. Cooke; Hon. Auditors, Messrs. H. Norman Gray and W. D. P. Pherson; Members of Council, Messrs. N. Hunt, J. B. Knowles, Reginald Kral, and J. Page; Provincial Members of Council, Messrs. R. Hockley (Newcastle-on-Tyne), Ernest G. (Sheffield), R. H. Parsons (Peterborough), Isaac W. Porter (Southampton), T. P. Regood (Bristol), A. Knight Croad (Glasgow), E. Lilly (Dublin), and H. F. Hunt (Pembroke).

THE BRITISH SCHOOL AT ATHENS: CELEBRATION OF THE TWENTY-FIFTH ANNIVERSARY.

The British School at Athens celebrated the twenty-fifth anniversary of its foundation by a meeting on Tuesday at Burlington House of a dinner in the Whitehall Rooms at the Hotel Metropole, W.C.

The Dean of Westminster presided at the evening, and said that the whole subject of Hellenic archaeology had been elevated into a different atmosphere. It used to be looked upon as the fad of the dilettante, or the gossip of the globe-trotter. It had become an essential department of classical study and in the opinion of the expert Greek scholar. He tried to lay emphasis upon the value of scientific exploration, as distinct from

superficial and amateur digging. The work of the School offered a good example of the strictly inductive methods of patient scientific study.

Mr. George A. Macmillan presided at the dinner, being supported by Viscount Morley of Blackburn, the Dean of Westminster, Dr. and Mrs. Walter Leaf, Sir Laurence Guillemard, Lady Harcourt Smith, Mrs. George Macmillan, Miss Penrose, Miss Jane Harrison, Professor and Mrs. Ernest Gardner, Professor and Mrs. Percy Gardner, Sir Arthur Evans, Sir F. Pollock, Sir Clifford Allbutt, Professor Charles Waldstein, M. Alexander Vouros, Mr. D. G. Hogarth, Dr. F. G. Kenyon, Professor C. F. Lehmann-Haupt, Mr. R. Weir Schultz, Mr. and Mrs. Theodore Fyfe, Professor E. C. and the Misses Bosanquet, Mr. Ian Macalister, Mr. V. W. Yorke, Mr. J. H. Baker-Penoyre, Mr. R. M. Dawkins, Mr. W. Loring, and others.

The toasts of "H.M. King George V." (patron of the School) and "H.M. the Queen and the Royal Family" having been proposed by the Chairman and honoured,

The Chairman, in proposing the next toast, "H.M. the King of the Hellenes," said that His Majesty had always shown himself a good friend of the School, and through his Minister, M. J. Gennadius, he had telegraphed his congratulations and good wishes for the prosperity of the School.

The toast having been honoured, Mr. D. G. Hogarth proposed "The Greek Nation and the Greek Archaeological Society." He said that the Government of Greece showed a real desire to treat the great architectural and archaeological treasures of Greece as a concern, not only of Greece, but of the whole civilised world. It was not too much to say that the antiquities, etc., of Greece were the primary concern of the nation, but they had shown great liberality in distributing some of these treasures to other nations.

M. Gennadius, who was to have responded to the toast, had been called to Paris by his Sovereign, but he had sent a letter to be read to the meeting, and this Mr. Hogarth read. In the course of the letter M. Gennadius said he was glad to think that the British School had amply justified their best hopes. It had added to Athens, the centre of archaeological research, another institution which had already given brilliant results, and which promised even a richer harvest in the future. He referred to the willing aid the Hellenic Government had always given the School, and the encouraging manner in which they had facilitated work. The Government would never act as a dog in the manger in the prosecution of original research.

The Chairman then proposed the toast of the evening, "The British School at Athens." In the course of his remarks he dealt with the origin and history of the School, and mentioned the names of some of its benefactors. He also referred to an interesting "Short History of the British School at Athens, 1826-1911," which he has prepared, and which includes a bibliography of the work of students of the School, compiled by Mr. J. H. Baker-Penoyre, M.A., Secretary, and Miss C. A. Hutton, formerly students. He said that Professor Jebb might justly be called the founder of the School, for, although the idea of forming a school in Athens was not absolutely new at the time, Professor Jebb first formulated a definite scheme, which was the first step in the realisation of the School. From that day until his death Professor Jebb was a member of the

Committee of the School. The first Director was the late F. C. Penrose, and it was a great thing for them to be supported by a man whose name was already known throughout the Continent as well as in his own country as the leading authority on one important branch of Greek study, i.e., Athenian Architecture, and it required some courage on the part of a man of the age of Mr. Penrose to offer his services to go out to Athens and start a new Institution; but he did, and, with the support of devoted students, he met with great success, and to the end of his life he retained an active interest in the School. Mr. Penrose made a good many visits to Athens while connected with the School, and when called away his work was fitly recognised by the creation of the Penrose Memorial Library attached to the School. Another member of the original Committee was the late Sir F., afterwards Lord, Leighton. In the short history of the School he had given a chronological narrative of the foundation of the School, and of its continual progress and work year by year during its twenty-five years of existence, and in that way reference was made to the successive excavations which had formed so important a part of the work of the School. The individual work of the students was shown not only in reference to these excavations, but to the remarkable bibliography writings of the students. Reference was made to the gradual growth of the School Library and to the building of the students' hostel. The School had been equally fortunate in its governing body and in its active members, both directors and students. The relations had always been of the most friendly character. As to the students, it was a most satisfactory thing to find many of them occupying important posts after their stay in Athens. One of their students, Mr. Marshall, was Director of Archaeology in India, and he was glad to say he was not to be removed, in spite of the recommendation of the Indian Government that the post was superfluous. There were four main objects for which the School was founded, and he thought he might claim that these objects had been fulfilled. The first object was to promote the study of Greek archaeology in all branches, and he thought they could say that that had been amply fulfilled. Secondly, besides being a school of archaeology, their object was to make it a school of classical study, and though the object was secondary, it was important, and its importance had been recognised by the Committee throughout, and by those who had taken advantage of the School. He was satisfied that the men who had spent their time at the School had found it of the utmost benefit to them in their after work. Thirdly, the School was also a centre from which information could be obtained, and where books could be consulted by British travellers in Greece; and there, again, he thought they had a very good record to show. Fourthly, the object was to form a library consisting of archaeological and other suitable books, including maps, plans, and photographs, and that object had been continually kept in view, and had been attended with much success. The library was one of which the School might be proud, and which added enormously to its usefulness.

Professor Ernest Gardner responded and referred to the work of the students of the School, and to the comradeship existing between the students, not only of the British school, but also of the French, German, and American schools. These different schools supplied the need of a great international University at Athens. Students felt, moreover, that the life spent in Athens and its School was a dominant influence in the whole of their subsequent careers.

Mr. R. M. Dawkins also briefly replied, and Dr. Walter Leaf proposed "The Guests," coupled with the name of Sir Laurence Guillemard, who briefly replied.

Viscount Morley of Blackburn then proposed the last toast, "The Chairman." He said he could not but think how things had changed since he was a boy at Oxford, when the great event was the publication, one after another, of the new volumes of Grote's "History," and there was no one who had the honour, as he had, of knowing Grote but recognised that his ideas were a great contribution to the thought and intellect of those days. That Society existed to go far

behind all that, to bring the light of archaeological knowledge on generations long before that. But he confessed he thought it was a shame we did not earlier take in hand the kind of work that Society had taken up, and he felt the same thing in regard to Oriental studies. It was to him inconceivable how we, with all our Oriental possessions and institutions, had not in this country—he had done his best to set on foot a movement for remedying that—an independent institution for Oriental studies. He was amazed that, with our enormous wealth and traditions, we were so grudging in contributing to such a Society.

GENERAL NEWS.

The Crystal Palace.

It is stated in the Press that a syndicate, headed by the Earl of Plymouth, has purchased the Crystal Palace for 220,000*l*.

Tattershall Castle.

It is stated that Tattershall Castle has been purchased by Earl Curzon of Kedleston, who has always been warmly interested in the preservation of archaeological remains, and who intervened at the last moment to rescue the Castle from the risks of further vandalism or demolition. It is understood that Lord Curzon contemplates certain works of repair in order to prevent further dilapidations and to preserve the model of a XVth-century fortress mansion.

Trentham Hall, Staffs.

The demolition is begun of Trentham Hall, which the Duke of Sutherland lately offered as a gift to the six federated pottery towns for use as a centre of technical and advanced education. The Duke's offer was declined upon the score of the expense that would be involved by the altering and maintenance of the mansion in that behalf. Holland made alterations of the early XVIIIth-century house, which Barry greatly enlarged and improved, besides adding the central tower; L. Brown laid out most of the grounds, and Barry the gardens.

Quadriga, Constitution Hill Arch.

The colossal group of "Peace" which has just been cast in Mr. A. B. Burton's Thames Ditton foundry for the arch at Constitution Hill will shortly be ready for removal to its place. Nearly 40 tons of bronze were used for the castings, in sections. In our number of October 8, 1910, we published a two-page illustration of Capt. Adrian Jones's design for the group, with one of the Arch, having a much smaller quadriga and figures as originally designed by Decimus Burton.

Alfred Stevens Memorial.

On November 15 will be dedicated in the "Alfred Stevens" Room, National Gallery of British Art, Millbank, the bust which Professor Lanfry has sculptured in bronze and presented to the Memorial Committee, together with a plaster cast of the chimney-pipe in Dorchester House, of which one of the white marble caryatides is illustrated in the *Builder* of April 21, 1894, from a drawing by Professor Lethaby. The Earl of Plymouth will take the chair at the presentation, and an exhibition of works by Alfred Stevens will also be opened, and will remain on view during two months.

A Monument to Bossuet.

A monument to Bossuet has just been unveiled in the Cathedral of St. Etienne, at Meaux, near Paris, where he was Bishop in 1671-91. The design represents Bossuet in a Bishop's ceremonial robes, with an eagle at his feet, in a group of figures of Mdle. de la Vallière in her nun's garb, and the Princess Henriette, Duchess of Orlans, and the Duke of Burgundy, and the Prince de Condé. The sculptor was M. Ernest Dubois.

National Housing and Town Planning Council.

A meeting of the National Advisory Town Planning Committee is to be held on Friday, November 24, at the Westminster Palace Hotel, S.W., when it is hoped that Alderman W. Thompson will take the chair. Details relating to the proposed National Conference, to be held towards the end of March, 1912—Manchester being the town suggested—will be discussed, including the following:—The framing of town planning by-laws in regard to roads; standards of limitation of houses per acre; methods of dealing with the provision of open spaces; the best means to

adopt in order to secure the planning of areas for residential uses; the extent to which an industrial town can, by town planning, stimulate industrial development and secure adequate traffic facilities by rail and water; the question of preserving places of natural beauty. The meeting on November 24 will also consider a memorandum by Mr. Raymond Unwin entitled "Notes on the Effect of Limiting the Number of Houses to the Acre under the Town Planning Clauses of the Housing and Town Planning Act." At the meeting a memorandum on the "Second Stage of a Town Plan," by Mr. Harold Shawcross, will be considered.

International Road Congress.

A meeting of the representative General Committee that has been formed to undertake the organisation of the International Road Congress to be held in London in 1915 was held last week at the offices of the Road Board. Sir George S. Gibb presided. A memorandum submitted by the Chairman dealing with the general question of organisation was considered and generally approved. An Executive Committee was appointed as follows:—Sir George S. Gibb (Chairman), Lord Montagu of Beaulieu, Mr. W. Joynton Hicks, M.P., Mr. F. H. Berryman (County Councils Association) (Vice-Chairman), Sir Charles D. Rose, Bart., M.P. (Treasurer), Messrs. J. A. Brodie, M.Inst.C.E., H. P. Boulnois, M.Inst.C.E., Dugald Clerk, F.R.S., E. Manville, M.Inst.C.E., M. Fitzmaurice, C.M.G., E. Sherrinell Smith, John Kennedy, J.P., D.L., S. Williams, H. P. Maybury, M.Inst.C.E., and Colonel R. E. Crompton, C.B. Mr. W. Rees Jeffreys was elected Hon. General Secretary of the Congress, and Mr. G. Montagu Harris Hon. Deputy-General Secretary. It was decided to prepare and issue at an early date a circular to the bodies and persons interested in the forthcoming Congress.

New Storage Reservoir.

The Metropolitan Water Board's new reservoir at Island Barn was opened on Saturday last by the Lord Mayor of London. The construction of the reservoir was carried out by Messrs. Robert McAlpine & Sons, at a cost of 152,727*l*. The water area is 121 acres, and when filled the reservoir will hold 900 million gallons. The embankment is 1,200 yds. long. The Lord Mayor was presented by the contractors with a silver model of a contractor's tip-vagon.

Sewering of Pencoeed, Glamorganshire.

The Penybont District Council have been considering the matter of sewerage Pencoeed, and have engaged the services of Mr. T. J. Moss-Flower, C.E., of Westminister and Bristol, to prepare a scheme of sewerage and sewage disposal for the district, and the work will include some eight to nine miles of sewers.

The British Fire Prevention Committee.

The winter session of the British Fire Prevention Committee commenced last week with a meeting to conduct a series of fire tests dealing with a small hand extinguisher intended to put out electrical and petrol fires. The meeting was held at the Committee's Testing-Station, Regent's Park, the Earl of Londesborough, K.C.V.O., Mr. Alexander Siemens, M.Inst.C.E., and Mr. Edwin O. Sachs, F.R.S.Ed., members of Council, receiving the visitors. The testing arrangements were under the direction of Mr. Percy Collins, J.P., F.S.S., Mr. Ellis Marsland, Mr. Dyer, Mr. Wylson, F.R.I.E.A., and others comprising a Sub-Committee of ten. There will be another series of tests this month dealing with the flannelette question, and in December some fire-resisting doors and partitions from the United States will be under investigation.

Goodrich House, Hatfield.

Mr. F. W. Speaight, of Morton House, Hatfield, will, it is said, carefully preserve the antiquarian and architectural features of Goodrich House, of early XVIIIth-century period, which he has recently purchased. The property commemorates the fact that King Edgar bestowed Hatfield (Heathfield) upon St. Etheldreda's Monastery at Ely, which Henry I. converted into a bishopric. The Bishops of Ely had a palace, whereof portions yet remain, at Hatfield, which John Morton, who occupied the see in 1478-86, rebuilt. Bishop Goodrich was the last bishop who lived in the palace, which became a royal residence, temp. Henry VIII., and was exchanged for Theobalds to Robert, Lord Salisbury, by

James I., who began the new palace which Lord Salisbury completed in 1611.

City Improvement in Glasgow.

The City Improvements Committee of the Corporation recently acquired a number of old properties at the corner of High-street and Bell-street. These were demolished and new buildings erected on the site. At the time it was considered probable that the Corporation would proceed with further improvement south of these properties and in the Tron-gate. The recent disastrous fire in the last-named thoroughfare, by which the old Tontine House was destroyed, brings these proposals forward again, and the Council are now considering the expediency of reconstructing the remaining portion of the Tron-gate area and the properties in the High-street to the north of the Old Tolbooth Tower, and the desirability of acquiring the buildings at the south-east corner of the scheme. The front of the old Tontine buildings destroyed in the fire has now been pulled down, and with it goes an interesting facade, and one of the few remaining links with Old Glasgow.

Smoke Abatement Exhibition.

The first meeting of the Vice-President and Council of this Exhibition was held at the Holborn Restaurant on Tuesday, Oct. 10. H. A. Des Voeux (Treasurer of the Coal Smoke Abatement Society) presiding. The Chairman having explained the reason which had actuated the Coal Smoke Abatement Society in resolving to take the lead in the organisation of an International Smoke Abatement Exhibition, it was resolved, upon the motion of Mr. A. Ritchie, seconded by Mr. A. J. Martin, that the following Sub-Committee be appointed:—(a) Conference Committee; (b) Domestic Heating (Gas, Electric, Smokeless Fuels, General); (c) Industrial and Motive Power Plants, Boilers, and Accessories; (d) Ventilating and Dust Prevention; (e) Loan Exhibits. An informal dinner followed the holding of the meeting, and at the function Sir William Richmond (President of the Coal Smoke Abatement Society) presided. In proposing the toast, "Success to the Exhibition," the Chairman referred to some of the work which had been accomplished by the Society, and mentioned that this was the proudest moment of his life, inasmuch as the list of societies, institutions, and firms which appeared on the prospectus as giving the support and patronage to the undertaking, they were that evening inaugurating with most satisfactory evidence that their work was being appreciated by those whose opinion was of the highest value. He was delighted at the number of manufacturers who were serving on the Council of the Exhibition, and he regarded it as a happy augury that the scientists and manufacturers were now working unitedly, devising ways and means for suppressing and preventing the smoke nuisance.—In responding to the toast, Mr. F. W. Bridges, the organiser of the Exhibition, mentioned that the exhibit already promised practically assured a most successful Exhibition, and he invited the hearty co-operation of the Sub-Committee towards securing that end.—Sir William Ramsay, in proposing the toast of "The Chairman," made a most interesting and illuminating speech, giving it as his opinion that some sort of legislative measure was necessary in order to preserve the health of the people as regards the smoke evil, and he felt sure that the coming Exhibition would have a most beneficial effect in bringing home to the community at large the benefits which would be derived by the creation of a cleaner, healthier atmosphere and environment.

Lower Thames Valley District Surveyors' Association.

The ordinary monthly meeting of the Association was held at Twickenham Town Hall on Saturday, the 4th inst., the President, Mr. Edward Willis, A.M.Inst.C.E., F.S.I., engineer and surveyor, Chiswick, occupying the chair. Mr. J. A. Webb (Hendon Rural District Council) read a paper entitled "Notes on Drainage and Sewage Disposal in Small Towns and Villages." A vote of thanks to the author was proposed by Mr. A. Gladwell (Eton Rural District Council), seconded by Mr. M. Hainsworth (Teddington Urban District Council), and carried unanimously. The discussion thereon was opened and adjourned to the December meeting.

CORRESPONDENCE.

Royal Institute of British Architects and the Society of Architects.

My attention has been called to Mr. T's letter published in your issue of October from which it would appear that there may be a little misunderstanding among some of the members of the Royal Institute in regard to a portion of the Society's annual report in which it is stated that the Council of the Royal Institute propose to make an application to the City Council for a supplemental Charter, in order to give them the necessary powers to enter into the agreement.

It did not occur to my Council in drafting the annual report that any amplification or explanation of the foregoing statement of fact was necessary, as it was not anticipated that the members of the Royal Institute, or any one else, did not realise the obvious fact that any proposals which may be agreed upon between the Councils of the Royal Institute and the Society must in each case be subject to the consideration and approval of the general body of members before any final settlement can be arrived at.

I have not had an opportunity of consulting the Council on the matter, but I am sure they would be extremely sorry to think that any misunderstanding on this question could possibly arise. Will you, therefore, kindly inform me to make it perfectly clear that proposals for a new Charter and by-laws are being considered by the Council of the Royal Institute from a view to laying them before the general body, and that they will also, in due course, be laid before the general body of the Society? So far as I know, the first public intimation of the question of a new Charter for the Royal Institute appeared in a "Note" in the *Builder* August 4 last, to the effect that the registration movement was temporarily at a standstill, and that a new Charter which must be obtained by the Royal Institute before any amalgamation with the Society of Architects could occur.

It has not been left to the Society of Architects to make any declaration on the matter, but they have referred to it except in the Council's annual report, the publication of which in advance of the annual report of the Council of the Royal Institute is merely a matter of routine and date.

C. McARTHUR BUTLER,
Secretary of the Society.

The R.I.B.A. Examinations.

I regret to notice the lack of emphasis on an important practical issue in the "Revised Labours of the R.I.B.A. Examinations," upon which you comment in last week's leading article. I fully appreciate the great difficulties of the question of architectural education, which undoubtedly have their origin in the general economic atmosphere, as you appear to suggest. We do not desire to see the R.I.B.A. examinations reduced to the level of a mere bait for the professional crammer, his text-books, and his clients; but, at the same time, they should not become a too-easy prey for those welcome parasites. The examinations of the Royal Institute should be generally recognised in their various stages as the attainment of a definite standard of merit and ability, recognition they have certainly not obtained at present. This recognition can only be secured by a consistent "tightening up" on all the technical matters that an assistant or a principal must meet with in daily practice. It will prove beneficial for the assistant in forming a definite basis for his request for a definite remuneration in his principal, and, in a much more comprehensive fashion than hitherto, it will indicate to the principal that the assistant he employs has attained a certain degree of proficiency, and is consequently eligible for a certain definite salary. If the future results of the R.I.B.A. examinations succeed in establishing the competence of the profession as to the relative degree of competency of the probationer, student, and graduate, they will perform a real service and substantially increase the honour accruing thereto. I applaud the breadth of view displayed in Mr. Reginald Blomfield's "Notes," which, I trust, will not mean feebleness in detail, due to the diffusion of the initial force of opinion over a broad area. He speaks of "unlucky persons" and "the probability that in any given subject not more than 2 or 3 per cent. of the candidates know more than the rudiments."

Unlucky questions cause the most trouble in our daily practice, and often involve the ruin of our projects, if not of our buildings. We discover, when it is too late, that time ought to have been found to master the subject. The object of examination being to test the competence of a candidate as well as to gauge his progress in education, the pleadings of "lack of time" and that the "least dislocation puts them out of their stride," at first remove the necessary condition for the acquisition of all knowledge, and, secondly, is a painful admission of the evident loss of the true spirit of education, i.e. adaptability and the unfettered play of thought and imagination on the problem under solution, and should most certainly not be encouraged or even condoned with. The spirit of such a condonation appears to me to figure prominently in Mr. Reginald Blomfield's "Notes," in spite of his evident desire to present his case otherwise.

The small percentage of candidates who "know the rudiments of a given subject" indicates the ground of complaint of the "many competent authorities" that "the standard hitherto reached in the R.I.B.A. examinations has been lower than it should be." It is remarkable to note, in this connection, that the insistence of a "minimum of technical knowledge" is recommended as the only "fair and reasonable course," and four subjects are mentioned, yet in at least two of these the student is twice examined. The term "rudiments" is somewhat elastic, varying in force with the modesty or otherwise of the person who uses it; but one may at least express the hope that a student is slightly removed from the rudimentary stages of these subjects after having been twice examined in them. There should be no doubt that his knowledge of any subject is sufficient to allow him to deal with any problem of current practice on his arrival at the Final Examination, or at least provide him with substantial material for further study to do so.

The endeavour to make the examination palatable to the genuine student, the "probable 2 or 3 per cent.," may easily degenerate into pandering to the faded accomplishments of the remaining 98 or 97 per cent., speedily followed by the installation of a *laissez-faire* policy which, in the future, will be difficult to effect.

I make these criticisms with the object of indicating a point of view essentially practical, and, whilst completely in sympathy with Mr. Reginald Blomfield's views, which, I presume, are those of the Board of Architectural Education, I cannot avoid the conclusion that, unless they are very carefully handled when put into practice, their tendency will be to run into pure dilettantism instead of making the examinations of the Royal Institute a real asset to the profession of architecture.

ERNEST J. DIXON, A.R.I.B.A.

"Microscopical Examination of Architectural Material."

SIR,—I read with very great interest the paper published in your issue of the 27th ult. It is an example of what an excellent thing theory is, but how completely it sometimes fails to square with practice! This, I think, was borne in upon the late Professor Huxley upon a particular occasion which has become notorious.

The school of theory is an excellent one to the student who can hardly get instruction outside of it, but the school of practice, I believe, is generally conceded to be the better tutor. I have been to school in both, and, as a result, I find the conclusions formed in a school laboratory (which, of course, includes the laboratory of a college) is either often contradicted or not substantiated in the school of practice. Take the lecturer's remarks on Portland stone, for instance. He says the results of his laboratory experience of Portland stone evinces "what might almost be called the absurdity of using such a material in Glasgow," and yet, in practice, Portland stone has been found to withstand the atmosphere of Glasgow to an extent, I believe, no other material has successfully stood in that city!

In reply to the discussion which followed the reading of the paper the lecturer said: "The Portland stone which seemed to stand best in the London buildings was that which had been employed in the seasoned condition, or had been erected long enough ago to get surface skin before the air became even occasionally acid enough to attack it."

I will not say here whether I think the lecturer

is right or wrong in talking about using Portland stone "in a seasoned condition." I can only say if he is right he is dead against another school of theory which says the stone should be wrought before it is seasoned, in order that the quarry sap which is in the stone might dry out upon the finished face of the stone and so "case-harden" that face, as it were, whereas if the block is first seasoned before it is wrought the seasoned face upon which the quarry sap has operated is removed in the working, and the wrought face then becomes one which has never been seasoned, and never can be, so far as the quarry sap is concerned. Moreover, I should probably be right if I were to say that, at all events for a considerable number of years, not 10 per cent. of the Portland stone used anywhere has been used in what one may term its "seasoned" state, and yet throughout all the years it has been used its successes are almost invariable and the failures negligible.

If the lecturer's theory is correct, I wonder how he can explain the following facts:—

The quality of Portland stone that most successfully stands the acid test has failed in the acid-laden atmosphere of Birmingham, but stands without being affected in the atmospheres of London and Portsmouth; and why the quality of Portland stone that least stands the acid test in the laboratory is a complete success when used in Birmingham is almost invariably a success when used in London and unsuitable for use in Portsmouth?

The fact is, I have found in an experience of more than a third of a century the only school that I can trust to for education concerning Portland stone is that of experience, and if one is to be influenced by theory only we should over and over again be face to face with contradictions that would make one exclaim with Huxley, "Hang theory!" F. J. BARNES.

INTERCOMMUNICATION COLUMN.

Aluminium for Hot-Water Service.

SIR,—I should be glad to know if any of your readers have had experience with the reputed property of aluminium in affecting hard water, so that the boiler deposit does not harden in the pipes, but remains flocculent for easy removal (probably encysted in a film of alumina).

I understand that the aluminium surface has to have one day off every week and be exposed to sunlight to restore its property to conditions somewhat difficult to ensure in small domestic services. Possibly there are firms who market such appliances. —ALUMINIUM.

Decaying Floor.

SIR,—With reference to the letter signed "S. G. H.," in your Intercommunication Column of November 3, under the heading "Decaying Floor," I have lately had brought to my notice the satisfactory repair to a floor under apparently exactly similar conditions described. The joists were not removed, and the floor was relaid with a composition flooring. The floorboards had rotted away owing to the absence of a damp-course. A.M.I.C.E.

SIR,—With reference to the above, I should strongly advise S. G. H. to take the whole of the floor up, putting a layer of concrete and bedding a dovetailed breeze concrete block which will take ordinary floor-boards. I cannot speak too highly of the results in using them. It is, of course, advisable to have boards tarred. N. G.

SIR,—I am afraid S. G. H. has no other option but to remove the whole of the woodwork. The $\frac{1}{2}$ in. of concrete should be thickened, and, if space is limited, a layer of asphalt, with a thin layer of concrete over would be best. However, as joists are in use, perhaps solid concrete can be used to within about 1 in. of the floor level.

To put wood blocks on a defective floor would be useless; they, in turn, would decay also.

The whole of the woodwork should be removed and destroyed, unless some of it be quite sound, and the walls and concrete washed with carbolic acid, which will prevent spreading. There are several patent jointless floorings on the market. E. S.

* Names of makers of composition floors will be supplied on application to the *Builder*. —Ed.]

EDITORIAL SUMMARY.

The leading article, "Departmental Methods and the R.I.B.A.," is suggested by the important remarks made by Mr. Leonard Stokes in his Presidential Address, given in *extenso* on p. 531, to the Royal Institute of British Architects on Monday.

A second article, on "London Street Architecture," is given on p. 528, being a review of the book on "London Houses from 1660 to 1820," by Messrs. A. E. Richardson and C. Lovett Gill.

"Notes" (p. 523) include comments on: "Balliol Chapel"; "Mr. Pond and the Time Spirit"; "Churches and Competition Methods"; "Anomalies in Ecclesiastical Law"; "Architecture and the Press"; "The Railway Outlook."

"Picture Exhibitions" (p. 531) include: "Spain and Tangier," dealing with Mr. H. C. Brewer's architectural drawings now on view at the galleries of the Fine Art Society, and "Modern Pictures"—the Goupil Gallery Salon.

The opening meeting of Session 1911-12 of the Royal Institute of British Architects was held on Monday, when Mr. Leonard Stokes, President, delivered an address (p. 531).

"Woman as a Domestic Architect" was the title of a paper read at the last meeting of the Camera, Sketch, and Debate Club of the Architectural Association by Mr. Edwin Gunn, formerly Hon. Secretary of the Architectural Association. The paper is given on p. 534. Some notes of the discussion which followed are also given.

Short notices of meetings of the following architectural societies appear on p. 535: "Leeds and Yorkshire Architectural Society"; "The Royal Institute of the Architects of Ireland"; "Nottingham Architectural Society."

The first and second premiated designs in the Roman Hill School Competition, Lowestoft, are also given this week (pp. 536, 537).

A report of the Festival Dinner of the British School at Athens is given on p. 537.

In Correspondence Columns (p. 539) will be found letters on: "The R.I.B.A. Examinations"; "The Royal Institute of British Architects and the Society of Architects"; "Microscopical Examination of Architectural Material."

The Monthly Historical Review, illustrated (p. 541), contains: "Some Worcestershire Churches"; "Mold Parish Church"; and "Notes."

The Building Trade Section (p. 546) contains: "Wages Board System in Australia"; "London Association of Master Decorators"; "Insurance against Unemployment"; "Projected New Buildings in the Provinces"; "Applications under the London Building Acts, 1894-1909," etc.

In our Legal Column (p. 549) will be found some remarks on "Form IV. of the Finance Act."

MEETINGS.

FRIDAY, NOVEMBER 10.

Glasgow Technical College Architectural Craftsmen's Society.—Debate on "The Uses of (1) Stone, (2) Brick, (3) Concrete as Applied to a Country House," to be opened by Mr. R. Gilchrist, Mr. W. Orr, and Mr. R. Park. 7.45 p.m.

MONDAY, NOVEMBER 13.

The Architectural Association (combined meeting with the Camera, Sketch, and Debate Club).—Mr. J. B. Fulton on "That the True Hope of Architecture Lies in the Study of Good Modern Work." 7.30 p.m.

Surveyors' Institution.—Opening address by the President, Mr. W. E. Horne, M.P. 8 p.m. The proceedings will open with the unveiling of the portrait of the Rt. Hon. Lord Alverstone, Lord Chief Justice of England, Associate of Council, recently painted by the Hon. John Collier, and the presentation of the gold medal for the best paper read last session, to Mr. E. H. Blake for his paper entitled "Some Notes on Highway Law as Affecting Property Owners."

University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "Renaissance Palaces and Churches of Venice." 5 p.m.

TUESDAY, NOVEMBER 14.

London County Council School of Building (Warde-road, Brixton, S.W.).—A special lecture on "Building Stones," by Mr. J. Vincent Eden, D.Sc. (Lond.), F.G.S. 7.30 p.m. Illustrated by lantern slides.

University of London (University College).—Mr. A. H. Parker, B.A., B.Sc., on "The Real Nature of the Problems in Heating and Ventilation Awaiting Solution by the Engineer." 5 p.m.

University of London (British Museum).—Mr. Banister Fletcher on "Greek Architecture: The Hellenic Period." Lantern illustrations. 4.30 p.m.

The Royal Sanitary Institute.—Discussion on "Sewage Farms," to be opened by Mr. H. A. Roehling, M.L.S.C.E., F.G.S. 8 p.m.

Buttress Polytechnic (Lectures on Illuminating Engineering).—Mr. E. Scott-Snell on "Oil, Petrol, Air, Gas, Acetylene, etc." 7.30 p.m.

Institution of Civil Engineers.—(1) Mr. A. H. Roberts on "The Loch Leven Water-Power Works"; (2) Mr. F. B. Soumeashin on "The Hydro-Electric Plant in the British Aluminium Company's Factory at Kinlochleven." 8 p.m.

WEDNESDAY, NOVEMBER 15.

Royal Society of Arts.—The opening address of the one hundred and fifty-eighth session of the Society will be delivered by Lord Sanderson, G.C.B., F.R.S., F.R.S.E., F.R.S.M., Vice-President and Chairman of the Council. 8 p.m.

The Institute of Sanitary Engineers.—Annual dinner, Holborn Restaurant, W.C. 6.30 p.m.

Northern Architectural Association.—Opening meeting of the session, Mr. H. C. Chavivewood, F.R.I.B.A., President, will deliver opening address. 7.30 p.m.

THURSDAY, NOVEMBER 16.

The Society of Architects.—Opening meeting of the session. Presentation of travelling studenthip medal, and address by the President, Mr. G. Bond, J.P. 8.30 p.m.

Builders' Benevolent Institution.—Sixty-fourth annual dinner, Whitehall Rooms, Hotel Metropole, W.C. 6.30 p.m.

FRIDAY, NOVEMBER 17.

Institution of Mechanical Engineers.—8 p.m.

SATURDAY, NOVEMBER 18.

Aberdeen Architectural Association.—Mr. H. MacLennan on "Structural Ironwork and Steelwork for Architects." Illustrated. 7.30 p.m.

ILLUSTRATIONS.

Cathedrals of Spain: Orense Cathedral.

ORENSE was carried out during the Episcopate of Bishop Lorenzo in the early XIIIth century, and is an example of the remarkably fine early transitional work in which Spain is so rich. The transepts are most impressive, and although the lantern at the crossing is of much later date, it adds a picturesque feature, and masses the lighting in the sombre and solid building. At the west end is a rather remarkable copy of the great doorway at Santiago, and the north and south doorways are both rich examples of Romanesque work. The building throughout is constructed of granite, and there are two or three very fine examples of XIIIth-century monuments.

Santiago Cathedral.

The Portico de la Gloria is in the narthex of the cathedral. It was designed and executed by Maestro Mateo, 1168-1188. The carving is perhaps the finest and most important representation of the Last Judgment in existence, and is most remarkable. For, although possessing all the dignity and strength of the Archaic art of the XIIIth century, it is anatomically correct, and as naturalistic as the latter classic art. The figures are full of life and vitality, and are mostly represented as if conversing with one another. The carving is in granite, except for three elaborate shafts of marble. On the column, seated below the figure of the Deity, is carved the effigy of St. James the Apostle, who is supposed to be buried in the cathedral, and to whom the city is dedicated. There are traces of colour left on the carving, and evidently at one time it was all covered with a varied colour scheme. The cathedral is a magnificent example of XIIIth-century work, and, according to Street, an almost exact copy of St. Sernin at Toulouse. These two drawings are now being exhibited at the Galleries of the Fine Art Society. (See page 531.)

Glamorgan County Hall.

This building, which has been erected by Messrs. Vincent, Harris & Moodie, A.A.R.I.B.A., in Cathays Park, Cardiff, will accommodate the whole of the administrative departments of the County of Glamorgan excepting the constabulary. A plan of the building was published in the *Builder*, December 19, 1908, with a report of the result of the competition.

The sub-ground floor is given over to storage strong rooms, caretaker's quarters, heating, and staff dining-room.

The ground floor, containing the whole of the Council suite and County Clerk's department,

and the floors over are subdivided to meet the requirements of the general administrative branches of the county.

Externally the walls are faced with Portland stone, also the interior of the entrance hall, ante-rooms, and the Council Chamber.

The Committee-rooms are panelled in English oak from floor to ceiling.

The floors and roofs are of ferro-concrete construction.

The heating and ventilation to the offices generally is by radiators, with fresh-air inlet behind, and extract being arranged from each room leading to an exhaust fan chamber in the roof. The ventilation to the Council Chamber is the Plenum system. The sculpture work to the main front is by Mr. A. Hodge, of Kensington; that in the rear of building by Mr. A. Broadbent, of Fulham.

Rye Town Hall, Sussex.

The Market Hall is situated on the north side of Market-street, and is approached from the High-street by two steeply rising lanes.

The hall was built in the year 1724, and is brick and stone structure of the typically broad quiet treatment of the Georgian period. The first floor contains at the present time the court, with a painted oak-panelled vestibule approached by an oak staircase from the north-east corner of the large Market Hall below. A series of five stone arches with piers supporting the wall above, containing five sash windows with stone architraves and key blocks, crowns with a stone modillion cornice having a moulded stone-capped brick parapet with a central feature with carved enrichment. The central cartouche containing the arms of Rye (one of the cinque ports) and the two end vases are the only applied ornament the façade possesses.

The tiled-hipped roof is surmounted by a oak, lead-covered cupola, the four angle posts of which are 16 ft. long, so constructed as to secure that the whole of the intermediate framing is carried by them. The rear or north elevation of the hall is of more severe character with plain brick windows. The original sundial from the grammar school is built into the wall at the east end of this front.

J. R. LEATHART.

FIFTY YEARS AGO.

From the *Builder* of November 9, 1861.

Agricultural Hall, Islington.

THE first stone of this building was laid on Tuesday, the 5th, by Lord Berners. The building will be composed chiefly of brick, iron, and glass. The principal front will be in Liverpool-road, and its most striking features will be two towers, one on either side each 95 ft. in height. The body of the building will be fitted up for the exhibition of cattle. A space of 384 ft. in length and 217 ft. in width will be covered by an arched roof of iron and glass, and will be surrounded by a gallery 36 ft. in breadth, supported by iron columns 24 ft. apart. The span of the roof will be 130 ft. Behind the cattle-show there will be a place for the exhibition of pigs. This division will be 100 ft. square and will have a ridge-and-furrow roof of wrought-iron. In addition to the glass in the roof, the walls will be pierced by numerous windows. The plans also include first and second class refreshment-rooms. The entire length of the building will be 500 ft.; breadth, 220 ft.: superficial area, 110,000 ft.

BOOKS RECEIVED.

THE LIFE OF JAMES McNEILL WHISTLER, By E. R. & J. Pennell. (London: William Heinemann. 12s. 6d. net.)

ENGLISH IRONWORK OF THE XVIIth AND XVIIIth CENTURIES. By J. Sturges Gardner. (London: B. T. Batsford. 2l. 2s. net.)

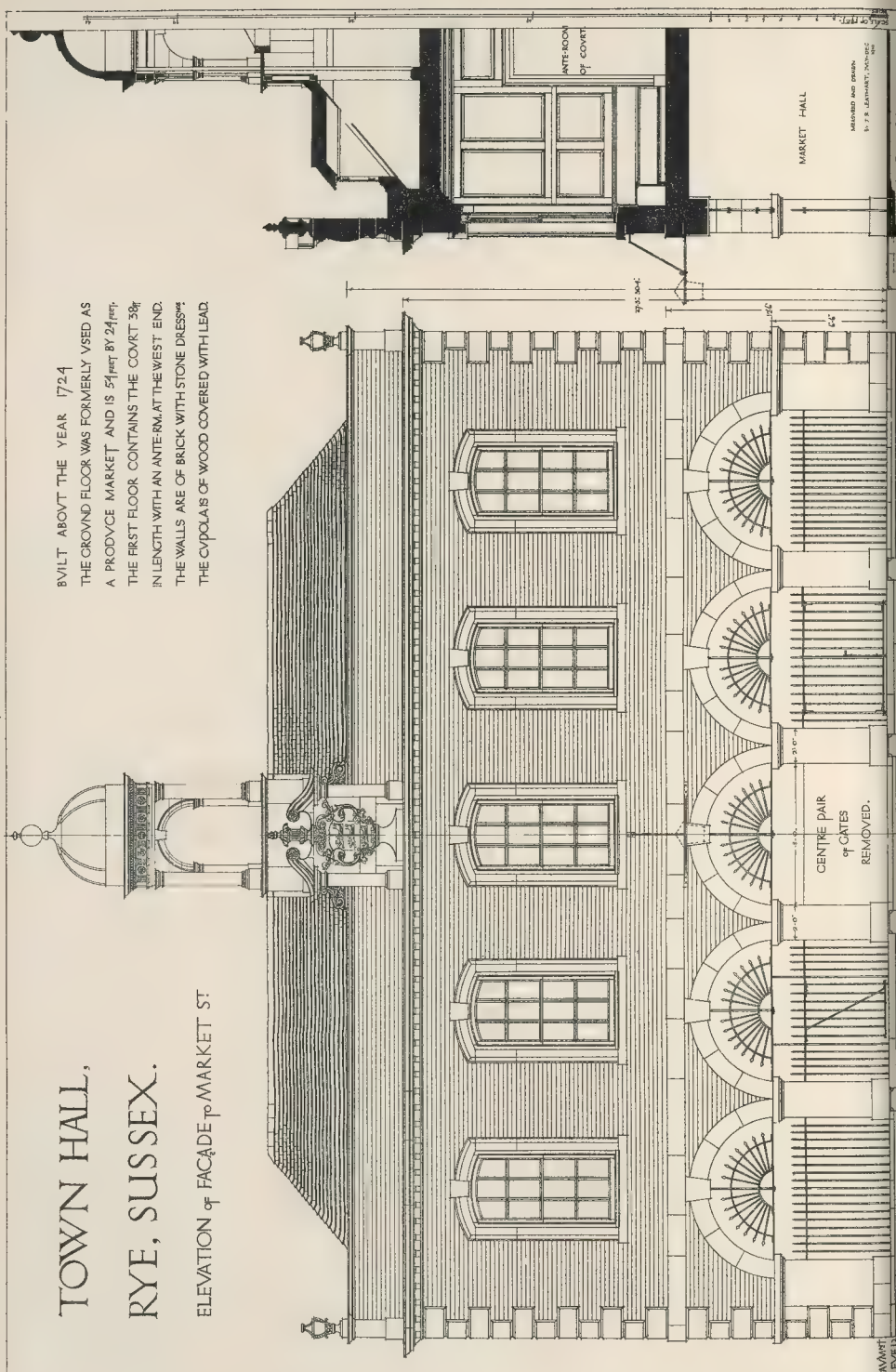
DETERMINING STRESSES.

There was a slight error in the third column of this article (see our last issue, p. 511) with reference to the calculations for Fig. 8. The figures should be 83, not 23. See working under Fig. 8 in column one.

THE BUILDER, NOVEMBER 10, 1911.

ELEVATION OF FACADE TO MARKET ST.

BUILT ABOUT THE YEAR 1724
THE GROUND FLOOR WAS FORMERLY USED AS
A PRODUCE MARKET AND IS 24'4" BY 24'4" INT.
THE FIRST FLOOR CONTAINS THE COVET 38'
IN LENGTH WITH AN ANTE-ROOM AT THE WEST END.
THE WALLS ARE OF BRICK WITH STONE DRESSING.
THE CYCLOPS IS OF WOOD COVERED WITH LEAD.



MARKET HALL

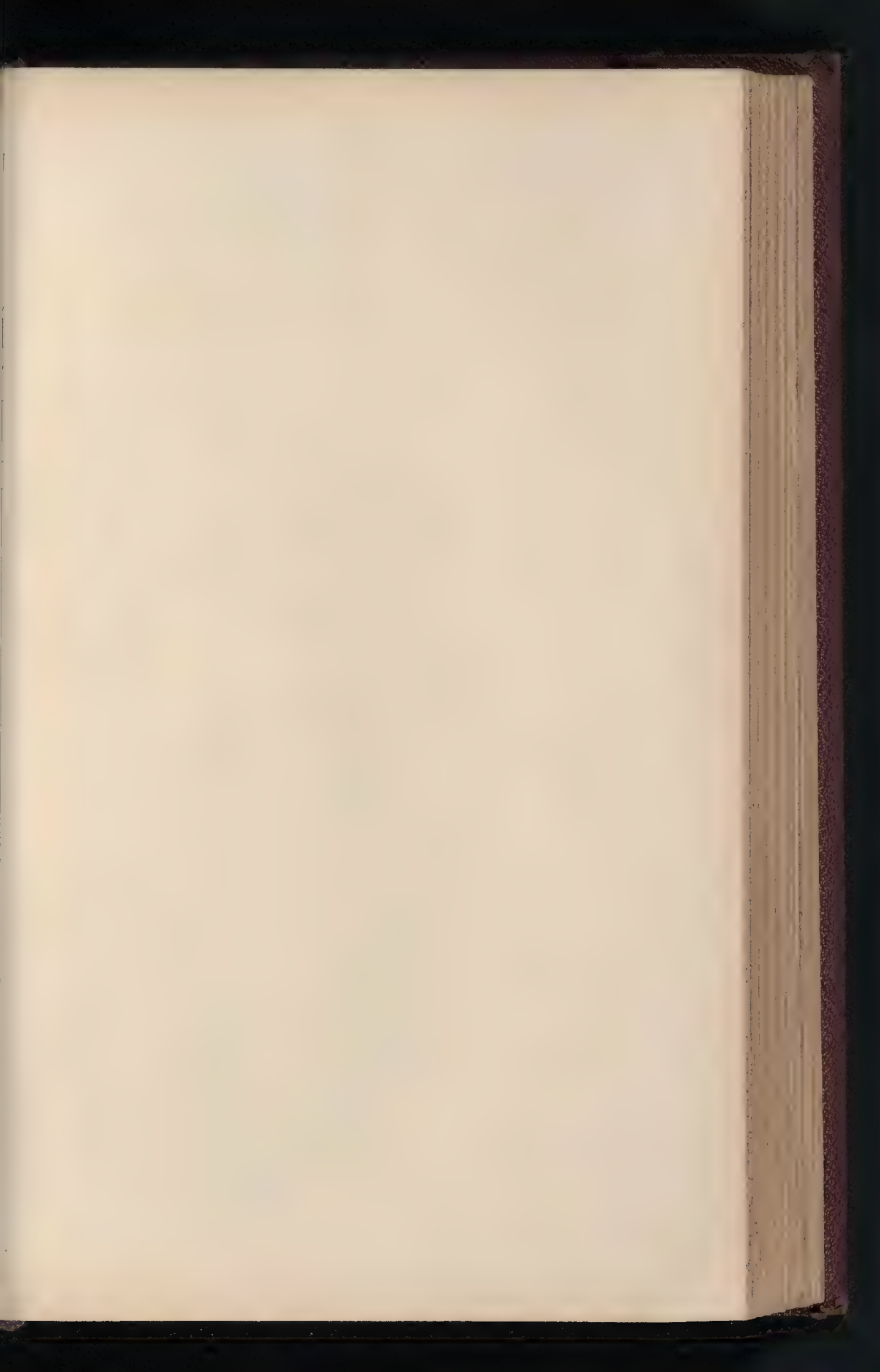
continued from page 10

D. J. R. & G. E. BARTLEY, MAY 1968

DEPARTMENT OF THE ARMY

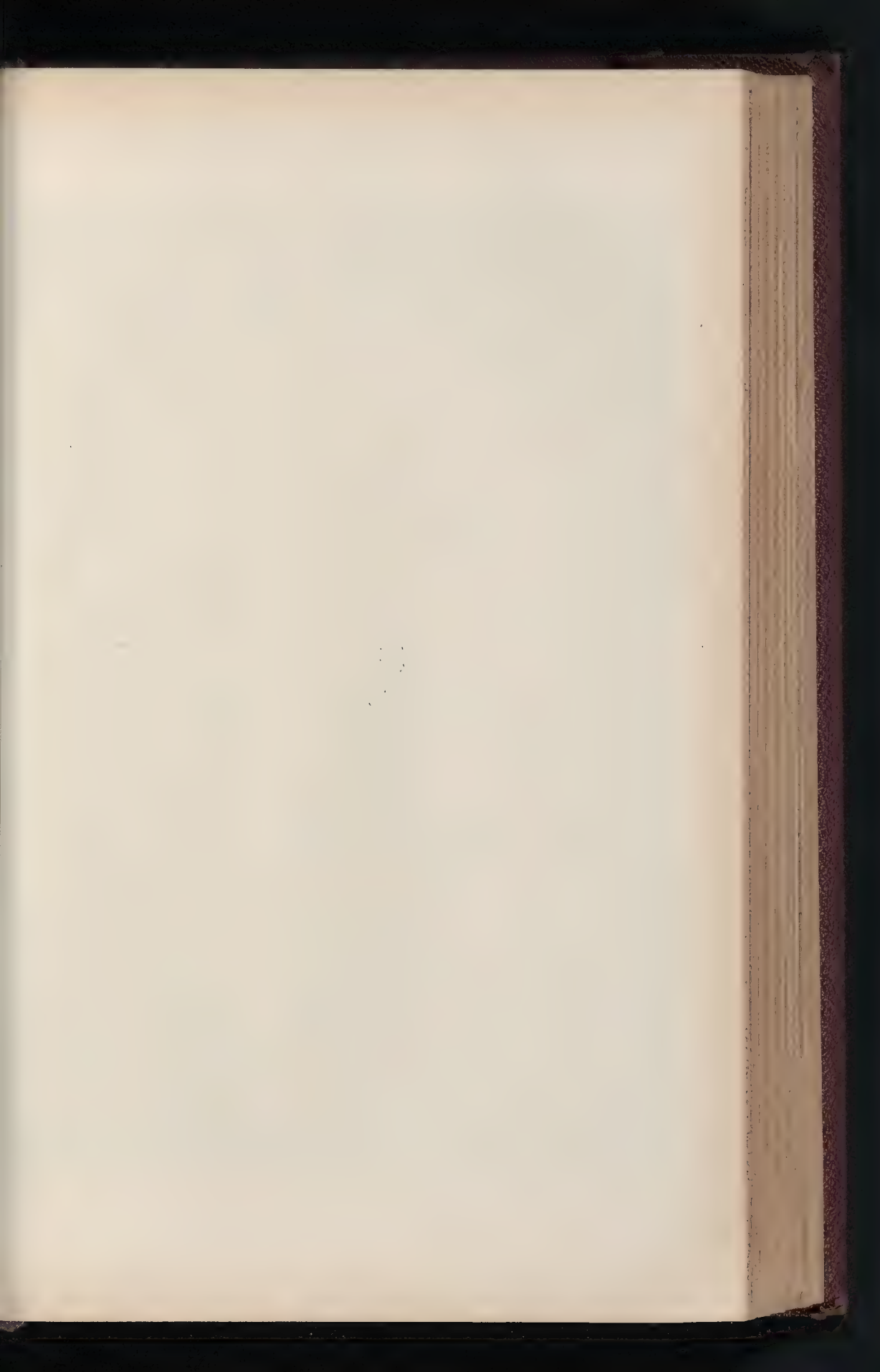
—

CENTRE PAIR
of GATES
REMOVED.



THE BUILDER, NOVEMBER 10, 1911.







ORENSE CATHEDRAL, SPAIN.

FROM A DRAWING BY MR. HENRY C. BREWER

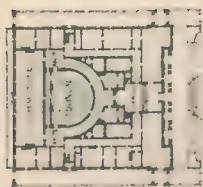
Sprague & Co., Ltd. Printers, 4 & 5 East Harding St. E.C.



Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

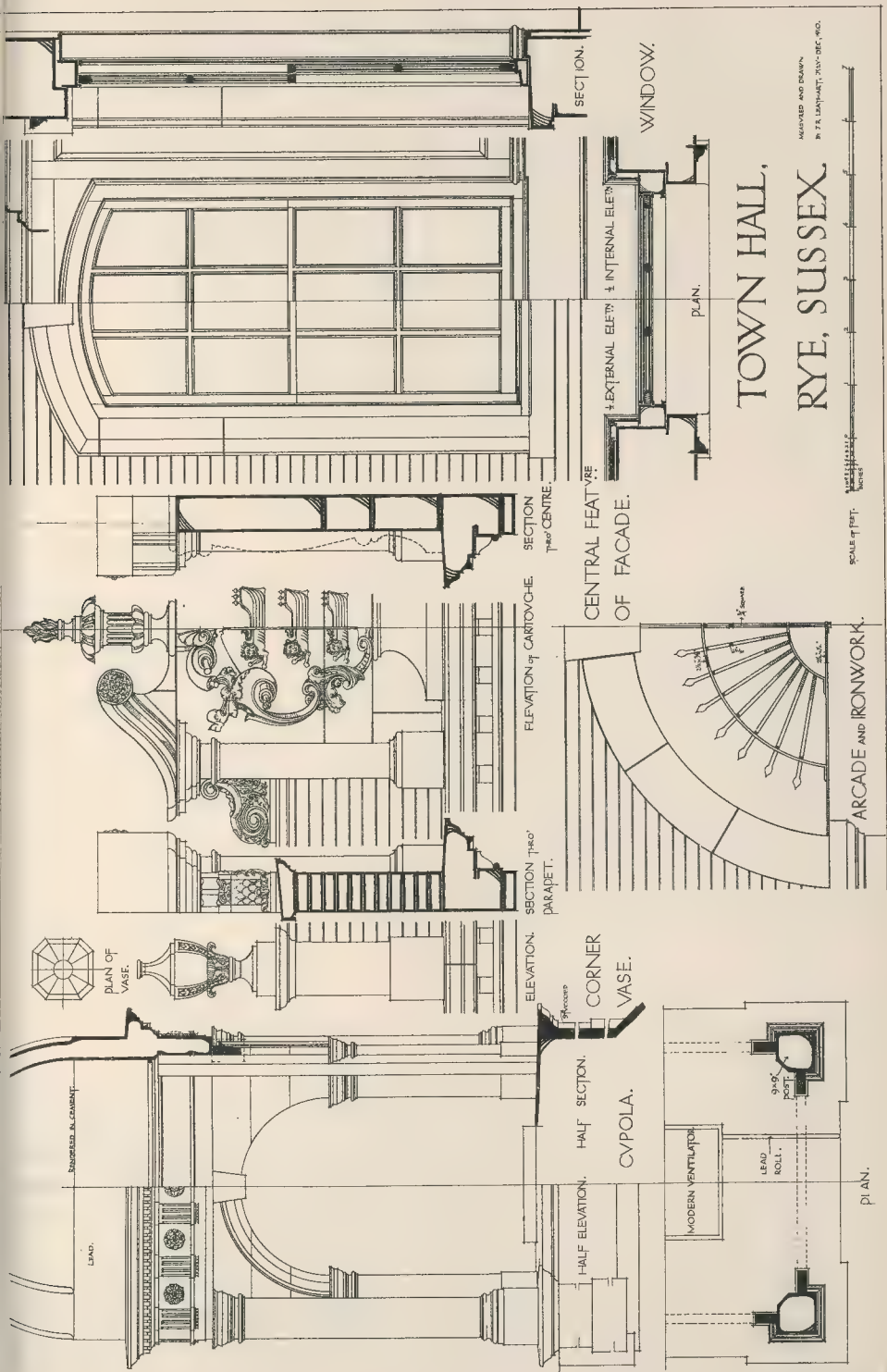
THE PUERTA DE LA GLORIA, SANTIAGO CATHEDRAL

FROM A DRAWING BY MR HENRY C BREWER



GLAMORGAN COUNTY HALL, CARDIFF. WEST FRONT. MISSSES E. VINCENT HARRIS & T. A. MOODIE, A.A.R.I.B.A., ARCHITECTS.

GLAMORGAN COUNTY HALL, CATHAYS PARK, CARDIFF. WEST FRONT. MISSSES E. VINCENT HARRIS & T. A. MOODIE, A.A.R.I.B.A., ARCHITECTS.



MEASURED DRAWING BY MR. J. R. LEATHART.

MONTHLY HISTORICAL REVIEW.



Fig. 1. All Saints', Worcester.

SOME WORCESTERSHIRE CHURCHES.

NCE in three years one of the three western cathedral cities rouses itself from its dignified repose and gives up for a few days to the performance study of sweet sound. The quiet hum with motor-cars bringing us from far and near to the Three's Festival. Such of them as have enthusiasm to spare from the musical for the less exciting delights of architecture usually expend it on the local cathedral, seen at such times under the worst conditions, internally at least, it is obscured by staging and chairs and noise. Some perhaps go away with the notion that they have thus exhausted architectural interests of the neighbourhood and miss the rich harvest to be gleaned by lesser churches of the back streets, or such a round as may so easily be made the aid of a bicycle or motor-car among us often far from railway-stations post among the network of narrow lanes intersect the cornfields, the copses, and apple orchards.

Worcester, which was the scene of this celebration, contains besides its much restored cathedral a large number of interesting churches. Of these an unusually proportion are of post-Reformation date, offer fine examples of classical architecture. Among these are All Saints', finely situated the Severn Bridge and possessing an interior which retains some of the

original fittings (Figs. 1 and 2), and St. Nicholas, whose dignified stone front, with its majestic pedimented portal approached

Hard by, too, in a narrow lane, is St. Swithin's, a church of quite unusual interest owing to the fact that up to the present it has escaped



[Photo. by Harris.]

Fig. 2. All Saints', Worcester.

by a double flight of balustraded steps and firmly designed campanile, makes so conspicuous an object in Fore Gate-street.

restoration. An inscription over the west door states that the church was rebuilt in 1786. This, however, does not apply to the XVIIIth-century tower at the west end, which cannot have been then more than slightly modified. The east end is—externally—a charming and unhackneyed classical composition in two stories, forming a most effective termination to a street vista. The body of the church, consisting of a wide nave, is of a simple and pleasantly-proportioned Georgian type (Fig. 3), with plain, round-headed windows and a depressed barrel ceiling designed according to the contemporary idea of a Gothic groined vault. The rib system, which leaves at intervals into circular panels, is by no means unpleasant in effect. The carefully-designed fittings of the sanctuary, the pulpit, the pews, the western gallery, and its organ case, if not so refined as those of Wren's London churches, are yet excellent of their kind. The pulpit especially (Fig. 4), buttressed by its clergy and clerk's desks, and flanked by the fine wrought-iron rest for the mayoral mace, is a fine specimen of carved and panelled oakwork and a complete and almost unique specimen of that race of three-deckers more familiar by repute



[Photo. by Harris.]

Fig. 3. St. Swithin's, Worcester.

than by sight to the present generation of church-goers. Its canopy is especially noteworthy with its carved scrollwork terminating in a gilded group representing the "pelican in her piety." The whole church is, in fact, an archaeological treasure representing down to its smallest details the arrangements of the Georgian era as completely as the sadly neglected little church of Compton Winyates does those of the Elizabethan.

Worcester was recently alarmed by the prospect that misdirected zeal was about to sweep them away, or at least to deprive them of their interest by mutilation on the score of



[Photo. by Harris.]

Fig. 4. Pulpit in St. Swithin's, Worcester.

their falling short of "catholic" standards. Many rightly felt that the present age owed a respect to an earlier one which, if unenlightened according to modern church ideas, yet gave in accordance with its lights and gave of its best, and deemed that a place like St. Swithin's, which has been held appropriate for worship for nigh on two centuries, and has been hallowed by the prayers of seven or eight generations of churchmen, might be considered to have acquired an atmosphere of Christian association which should not be rudely disturbed.

Fortunately these terrors, which were shared by the Society for the Protection of Ancient Monuments, were groundless, and



Fig. 6. Churchyard Cross, Birmingham.

Mr. Gerald Cogswell, A.R.I.B.A., Architect.

that body has itself been entrusted with the task of carrying out the necessary repairs and redecoration.

Equally unique of its kind, but of a very different order of interest, is the tiny parish church of Besford, a few miles to the south of the city. It is one of the very few timber churches in existence in the kingdom.



[Photo. by Harris.]

Fig. 5. Besford Church.

Though excessively restored and accompanied with an uninteresting stone chancel, the original XVth-century structure is substantially there to be studied. It is framed of oak timbers in the usual manner of Worcestershire houses, and, if we assume that the mechanical modern plaster fillings are an attempt to copy what were originally, the old plaster work must have been enriched with a variety of patterns and devices, doubtless very pleasant to look upon. The old portion consists of a nave about 60 ft. by 20 ft., entered through southern porch and lit by flat-topped windows with trefoil-headed lights. Internally (Fig. 5) it is lined with Jacobean panelling and possesses one of the most beautiful ro gallery fronts to be seen anywhere, decorated with a frieze of quatre-foils, retaining a rich scheme of original colour, the ground being blue, the tracery of various colours and the central rosettes gilded. The top of the staircase leading to it is still in existence though the entrance to it is now blocked by the vestry fireplace.

The church also contains a treasure even rarer in this country in the form of a treacherous altar-piece, now displaced to make room for a commonplace modern retable and placed in a bad light near the vestry door. Dim as this light is, it is sufficient to disclose a work of a character very rarely to be found in English churches, if indeed

not absolutely unique. The top is to a double curve and cusped, and panels are painted in tempera. The painting is much damaged, but though the central figure at least is indistinguishable, of the subsidiary scenes can be made. Both colour and drawing are very fine, betray the work of an artist of distinction, probably an Italian, or a Fleming under Italian influence. It is much to be desired that this rare piece of church furniture should be carefully cared for and preserved from further

decay. The churchyard at Birlingham, deep and covered in immemorial trees, is an excellent setting for a picturesque village; and the fine XVth-century tower, seen from a distance among the foliage, promises which, alas, owing to the decay of a late-lamented President of the Royal Institute of British Architects, who was named, is far from being fulfilled. The west of the church is as cheerless, as unattractive, as offensive a confection in its textureless masonry as could be found in a mushroom suburb of a Victorian manufacturing town. The old church has been removed bodily, and beyond the tower only wreck it has left behind is its fine Norman chancel arch forlornly left to duty as a churchyard gateway. The tower only too thoroughly matches the ruin, if it does not surpass it in inappropriateness. The pulpit and lectern, which, naturally, cannot be laid at the door of the old P.R.I.B.A., could not be surpassed in absurdity. The former assumes the form of an angel, such as might grace the stone factories in the Euston-road, holding an open book as a rest for the clerk's notes, while the lessons are read the back of an apologetic bird of prey perched on a rockery overgrown with stone.

A delightfully-designed oak reredos, erected by Messrs. Houghton, of Worcester, its best in a poor light to redeem the effect of such surroundings; and another of modern work, a charming churchyard gate, by Mr. Gerald Cogswell, A.R.I.B.A., of Worcester (Fig. 6), forms an effective contrast near the Norman entrance.

Between Birlingham and Eckington the crosses the Avon on one of those fine, arched mediæval bridges with pointed arches and standing places on the peaked piers, which are not uncommon in the district. There is, for instance, another bridge of the type over the river at Bidford, and the very peculiarly arched one over the Teme at Powick, on the hottest engagement in the battle of Worcester was fought. Eckington Church has little unity owing to frequent alterations at various periods, has a fine west doorway, and the string-course of the XVth-century tower cut into battlements is of happy effect.

Worcester, which appears at one time to have been a place of considerable importance, would hardly visit if only for the remarkable series of monuments of all periods in its church and churchyard.

More than one good example of the 14th-century slab, with its floreated cross, can be seen in and around the church, but none is of interest before a beautiful XIVth-century tomb which is figured in Brindley and Kerley's "Ancient Sepulchral Monuments." The slab which now stands in the church, against the south wall, is carved with the figure of Christ on a cross represented as a dove. Two doves (or possibly angels) are shown over His head. From the top of the cross springs a pinnacle and two cusped crocketed niche-heads sheltering the effigies of a lord and lady. Outside the church are of the very few known examples of mediæval churchyard monuments. It is of the type much favoured by the Gothic Revivalists—a slab over a foot thick and cut on steep slopes like the roof of a cruciform tomb with four gables, the roll ridge forming the top. The XVth century contributes a fine, arched canopy tomb about 4 ft. long, with a recess in the south wall of the



Fig. 7. Jacobean Tomb in Bredon Church.

chancel. Within the traceried aperture repose the figures of a father, mother, and child, and above them, in the groined stone tester is a figure of Our Lord in the action of benediction. Against the west wall of the southern chapel is a remarkably splendid Jacobean tomb of alabaster and various marbles (Fig. 7). In the centre a finely-schemed canopied structure of the familiar description shelters the principal personage commemorated and his lady; but it is flanked on each side in an unusual manner by smaller wing canopies to accommodate the kneeling figures of their numerous progeny. The sculpture, as is often the case in such extensive monuments, is of very unequal merit, but nothing could exceed the vigour and decorative effect of the eagle with outspread wings which forms the finial to the whole monument standing some 20 ft. above the floor, and is unfortunately not included in our figure. Georgian tablets are not wanting on the walls of the church to complete the cycle of funerary memorials.

Apart from this, the architecture of the church is full of interest. The nave is principally of the transition from Norman to Early English. The bold square turrets, with inset angle shafts, zigzagged arcing, and pyramidal tops, which flank the west gable of the simply-schemed finely-proportioned western façade are figured as typical of their period in Parker's "Introduction." Another excellent feature is the south chapel, which faces one as one approaches the church. Contemporary probably with Stone Church, in Kent, and resembling it in some respects, as, for instance, in the possession of an inner plane of tracery to the windows, it is far less elaborate, less self-conscious and mathematical, and, therefore, far more human and attractive. Its sole ornament consists in pairs of delightfully-proportioned lancet lights, each about 1 ft. 4 in. wide, with a single splay on the outside and a prettily-trefoiled head. The western group of these is blocked by the great Jacobean tomb above described.

When the need was felt for extension there was added to the east of the nave a central tower with its west wall standing on the old chancel arch and a long "decorated" chancel. A curiosity in this is the occurrence of a "low side window" behind the piscina, but as the stonework has been renewed it is impossible to be certain whether this is an original or modern arrangement. Internally, the floor and the risers of the sanctuary steps are enriched with remarkably fine mediæval encaustic tiles, showing a variety of heraldic and other devices most vigorously drawn.

(To be continued next month.)

THE PARISH CHURCH OF MOLD, FLINTSHIRE.

THE early history of Mold without doubt is connected with the "Mont Brenebylle"—now called the Bailey Hill—at the north end of the town. It has been conjectured that this mound is a relic of the ice age. But whatever its origin, it is not difficult to understand how this mound in the midst of Molesdale, commanding at once the slopes of the Clwydian Hills and the Vale of the Alyn, came to be fortified. After the Norman Conquest it is well known that this part of North Wales became the battleground of conflicting races—the English and the Welsh, alongside of the famous Offa's Dyke, which runs through this part of the country between Mold and Chester. The adoption of the system of Lordship Marchers caused a perpetual warfare of the most savage and destructive character to be carried on between the Dee and the Conway.

Hugh Lupus, Earl of Chester, was granted by William Rufus that north-eastern portion of Wales which is now called the county of Flint; and Eustace de Cruer was given Molesdale and Hopedale. This Baron it was who probably fortified the old earthworks at Mold by building on the highest part of the hill a Norman keep—or castle.

In the reign of Henry I. we find the castle in the hands of Robert, Seneschal of Chester, who took his title from it, and was called Robert, Baron de Mont Alt. By this title his descendants were known till the death of the last of them about 1330, who, dying childless, left Mont Alt, the castles of Hawarden and Rising, to Isabella, Queen of Edward II. But, owing to her conspiracy against her husband, her property was confiscated by her son, Edward III., who granted that portion in North Wales to William Montacute, Earl of Salisbury, in 1337. This nobleman founded Disham Abbey in the following year, and, with a generosity more apparent than real, appropriated the Rectory of Mold, and presented it to this monastery as part of the endowment.

The Church of St. Mary is a very fine example of late Perpendicular work, erected at the end of the XVth century, no doubt on the site of the old church. But of this older edifice there remain only the extraordinarily magnificent niches at the east end of the two aisles, very much mutilated, some ancient glass, and possibly the very thick west wall of the nave. It consists of a nave with north and south aisles and a south porch, a western tower rebuilt in 1775, with the addition in 1856 of an apsidal chancel and a small vestry enclosing the north door. The nave is divided from the aisles by seven arches, whose pillars are much admired for their lightness. Between the springs of every arch is an angel holding a shield, on which are the arms of benefactors or the instruments of the Passion. Among the other sculptures can be



Mold Parish Church.

seen the Veronica. Mention must also be made of the magnificently carved panelled oak ceiling of the north aisle, which is of the same date as the church; the moulding which runs round the building, both within and without, decorated with patera ornaments curiously carved to represent a procession of animals of all kinds, and some extremely fine carving on the east window of the north aisle. The aisle windows are large, with obtuse, four-centred arches, and contain some old glass. At the east end of each aisle were chapels, which must have been very beautiful with the canopied niches richly carved and coloured, within which were statues. Unfortunately, the last relics of the chapels were removed at the restoration of 1856.

The most prominent arms and badges carved are the "three legs of Man," an eagle's claw, and an eagle and a child. These belong to

the Stanley family. The tracery of the window over the north door contains some old glass. In it are to be seen together the crest, arms, and badge of the family; while in the two central lights are:—(1) The arms of Henry VII. on a shield in a wreath or torse, and (2) the arms of Edward, Earl of Derby, and underneath the inscription:—"Orate pro Anima Domini Edwardi, Comitis de Derby, et uxoris ejus qui has fenestras fieri fecerunt." We find that the Lord of the Manor of Mold at this time and owners of the Castle of Mont Alt, together with those of Hawarden and Caergwile, were the Stanley family. This lordship was granted to Sir Thomas Stanley in 1443, and the Earls of Derby possessed it for over 200 years.

Thomas, second Lord Stanley, married Margaret, Countess of Richmond, the mother of Henry VII.

History records the deep interest Lady Margaret took in education and religion. And if her influence and endowments at the older universities bear witness to the former, the churches of Mold, Wrexham, and Gresford testify to her generosity and devotion to the latter in this part of the country.

To her and Lord Derby the people of Mold are mostly indebted for this fine church. But it is evident that the building was not completed all at once; and Edward, Earl of Derby (d. 1572), and his wife appear to have also interested themselves in the church.

In the churchyard there lies buried the celebrated English landscape painter, Richard Wilson, R.A., over whose remains, interred in 1872, is a contemporary altar tomb.

Notwithstanding all that has been done from time to time, the condition of the fabric of the church has of late become so serious



Interior of Mold Parish Church.

reparation became a matter of great importance. Messrs. Prothero, Phillott, & Co., architects, were consulted, and they revealed the extent of the dilapidations and the magnitude of the cost of the repairs. The architects conclude their report as follows:—"The building is urgently in need of repair, and there are others which might be done at any time. The wet soaks into the walls behind the parapet, which places leans very considerably out. On one side the leadwork of the roof is decayed away from the wall, and lets the water into the aisle. Some of the windows of the aisle are ready to fall, the mullions being entirely perished."

Reparation Committee appointed Messrs. Prothero, Phillott, & Barnard (London) as architects, and Messrs.

of the 8,000*l.* which is the estimate for the whole work.

[The above particulars are taken from the *Church Builder*, the quarterly record of the work of the Incorporated Church Building Society. We are indebted to the Rev. Evan Jones, Vicar of Mold, for the loan of the blocks, which also appeared in the *Church Builder*.]

HISTORICAL NOTES.

SIR H. TRUTEMAN WOOD, in a recent issue of the *Journal of the Royal Society of Arts*, has an interesting note on the offices of the Society. Originally established in the Strand in a building adapted by Mr. (afterwards Sir William) Chambers, the need for increased accommodation led to an advertisement being put in the daily papers in 1770, inviting any person who had proposals to make on the subject to communicate with the Secretary. "The result of this advertisement was that the Brothers Adam, who were then occupied with their scheme for the construction of the Adelphi, offered to include in that scheme a suitable house for the Society's purposes."

"The design proposed by the Brothers Adam was duly carried into effect, the requisite height on the river side being obtained by the construction of tiers of superimposed arches. Some of these arches formed public thoroughfares, and later gained an unenviable reputation on account of their nocturnal frequenters. Others were let as storehouses; at one time a number of cows were stabled in some of the arches, and supplied milk to a large part of the West-end. Others again served as cellars for the houses built on the substructure. The Society's house has two stories of cellars below the south-western part of the building, while the foundations of the north-east corner are in the original ground. The whole work has undergone a certain amount of repair, a good deal of strengthening and reconstruction having been carried out about the time of the termination of the original lease, when the Thames Embankment was made; but it seems now as sound as when it was first built."

Tintern Abbey.

SIR E. STAFFORD HOWARD, one of the Commissioners of his Majesty's Woods, Forests, and Land Revenues, reports that the following works have been undertaken during the year ending March 31, 1911, for the preservation of the structure of Tintern Abbey:—North Transept.—The completion of the reparative works to the large north window and the gable and coping; strengthening of the north-west staircase and building up the dangerous openings. North Aisle.—Repairs and protection and pointing to wall. Presbytery Aisle.—Repairs and protection and pointing to south wall. West Front.—Erection of scaffold to great west window of nave and examination and report on same, and walls, gable, and other work adjoining, and estimate of probable cost of repair. Infirmary.—Repairs, protection, and pointing to walls. Northern Arch of Tower.—Provision of timber and other material for shoring this arch on the west side. The number of visitors in the year ending December 31, 1910, was 17,542, as compared with 17,429 in the previous year.

St. Mary's Church, Spital-square.

In December will be offered for sale by order of the Ecclesiastical Commissioners, the freehold site and the fabric of this church, together with the adjoining vicarage, covering a total area of nearly 4,400 square feet. The church was closed some months ago in view of the fact that the population of the district, which embraces the old extra-parochial liberties of Norton Folgate and the Artillery Ground, has become almost entirely Jewish, and of the consequent difficulty of carrying on the work and service of the church. St. Mary's was originally built as the Wheler Chapel in 1693 by Sir George Wheler, rector of Houghton-le-Spring, and Prebendary of Durham, for his tenants, and formed one of the many chapels erected in Spitalfields for the weavers—descendants of the Protestant refugees. The chapel was erected in 1842, and the interior was remodelled for 580 sittings. It stands close to the site of the Spital pulpit cross—rebuilt in 1694 and destroyed in the time of the Civil War—which was used for the preaching in Easter week of the outdoor sermons that were attended by the Corporation of the City, and latterly by the boys of Christ's Hospital. An open-air pulpit

was erected ten years ago in the graveyard of the adjacent Christ Church as a memorial to the late Dr. Billing, Bishop of Bedford, a former rector of the parish. In our issue of January 15, 1910, we published an illustrated article by Mr. G. H. Lovegrove upon the discovery of some worked stones, XIIIth century in date, built into the foundation of No. 38, Spital-square, which it is conjectured were vestiges of the Priory and Hospital of Christ and the Virgin Mary, which Walter Brune, sheriff in 1203, and his wife Roesia founded, 1197, for Augustinian regular canons in what had been the Roman cemetery of Lolesworth. The hospital graveyard, latterly Spital-yard, is the site of the present Spital-square.

The Touchet Shere to John Touchet, Lord Brass, Shere.

We learn that the brass at Shere, Surrey, is to be restored. It was originally on an altar tomb which was destroyed towards the middle of the XVIIIth century. The marginal inscription, which was on a chamfered edge, was stolen, and the slab with the figure was relaid on the floor. Later the lower half of the effigy was stolen. The upper half was illustrated in the *Builder*, October 15, 1910, p. 437. In 1895 a large part of the inscription was discovered in the village after being lost for nearly a century and a half, and was given back to the church, where it was fixed to the sill of a window. The rector, Rev. F. Hill, at Mr. J. S. M. Ward's suggestion, has decided that the whole brass shall be carefully restored under the latter's supervision. The inscription is to be relaid in a fresh matrix, out on the slab, the missing parts replaced, and the lower half of the effigy restored. Fortunately a careful description has been found, which shows there were several peculiarities. Though the restoration will exactly reproduce what is lost, the back of each new piece will be dated 1911; and a rubbing of the brass as it now exists will be hung in the church. Thus the most casual visitor will be able to learn what is old and what new. The original parts will in no way be affected by this restoration, save that they will be much safer from theft. The work has been placed in the hands of Messrs. Gawthorp & Son.

A PROPOSAL to restore the Church of Little Malvern is being inquired into by a Consistory Court at Worcester Cathedral. Formerly a Benedictine priory and cell in connexion with Worcester, the church was founded in 1171 by two brothers, Joceline and Edred, who became successively priors there. The church was dedicated to St. Giles, and maintained a prior and seven monks until the dissolution of the monasteries, when the revenues of the house were worth about 100*l.* John Alocck, a later Bishop of Worcester, who ruled over that see from 1476 to 1486, rebuilt the church. Henry VIII. afterwards granted the property to Richard Andrews and Nicholas Temple.

Only a fragment of the edifice now remains, which is chiefly of the Perpendicular period, although specimens of earlier architecture still exist. The panning of the tower is good, although that portion of the church has a curiously truncated appearance, due to the fact that the battlements have been removed. The arches supporting the Little Malvern tower are the original work of 1171, while the Norman nave, the transepts, and the side chapels can still be traced. A portion of the finely carved rood-screen remains with the ancient stalls; the carvings beneath them, however, have been defaced. In the east windows of the choir were formerly likenesses of Edward IV., his Queen and their children, but these have now disappeared, as well as other monuments of antiquity. The mediæval windlass used for hauling up the bells is still preserved in the apex of the roof.

The XIVth-century church of St. Margaret, Stoke Golding, Leicestershire, is being restored by Mr. Henry F. Traylen, A.R.I.B.A.

The tower, to which attention was turned first, showed a remarkable evidence of decay on the inside owing to the nature of the friable sandstone; it was literally honeycombed, in some instances to a depth of 12 in. The method of restoration throughout the building has been approved by the Society for the Protection of Ancient Buildings. The estimate amounts to 2,500*l.*, and, as the sum of 750*l.* which has been raised practically exhausts the possibilities of local aid, the Committee appeal to the larger public for subscriptions.



View on East Window of North Aisle, Mold Parish Church.

son & Son (Peterborough) as builders. Work was commenced in January last, and it was discovered that the condition of the walls of the south aisle and roof was worse than was anticipated—the masonry was decayed that great cavities were found in the walls, and in some places they were such as 6 in. out of the perpendicular. The woodwork of the roof was found to be in a terrible state. Several of the principals had perished to such an extent at the ends they were only supported in their places by their connexion with the roof. The purlins, were greatly damaged in many cases, and had to be replaced. In the case of all of the windows, the jambs, mullions, and tracery have almost entirely to be replaced—the old stone actually crumbling when touched. The work of reparation is going on, and the Committee have already collected 3,300*l.*, but this is only a small amount

THE BUILDING TRADE.

THE WAGES BOARD SYSTEM IN AUSTRALIA.

UNTIL a few years ago freedom of contract existed between employer and employee in Australia. The position was, broadly speaking, like that which obtains in Great Britain to-day. Rates of wages were ruled, on the one hand, by the quantity or urgency of the work available, and, on the other hand, by the number of men offering their services. Where workmen were in excess of requirements, competition tended to lower wages, and when workmen were scarce and work plentiful, the position was reversed. Now, however, all that has been changed. Rates of wages and conditions of employment are fixed by Wages Boards appointed under special Acts of Parliament. Competition and such-like disturbing factors are supposed to be eliminated and regularity and uniformity secured. The object of Wages Boards is to adjust for a whole industry in a legal way what formerly was left for individual employers and employees to adjust for themselves, or what workmen acting collectively secured by means of strikes.

It may be interesting to outline the procedure adopted by a Wages Board in arriving at its decision. First, as to the Board itself. Each Board consists usually of three persons—a chairman, a representative of employers, and a representative of employees. The chairman is usually a barrister. Its functions are judicial. The Board sits and hears evidence. The employees' union presents "a claim," in which it makes certain definite demands, usually covering a claim for higher wages, shorter hours, preference to unionists, compulsory apprenticeship, limitation of the employment of boys, and the abolition of overtime and the employment of improvers. This "claim" is backed up by evidence of witnesses called in support, which goes usually to show that the particular industry being dealt with is more arduous, dangerous, or skilful than other callings, and those employed in it should consequently work shorter hours, receive higher wages, and enjoy better conditions generally. Each Board has to arrive at its decision purely on the evidence presented. It cannot, for example, take cognisance of evidence given before other Boards. This leads to some interesting situations. The journeymen painters, for instance, swear that they lose more time through bad weather than bricklayers, and that their occupation is more dangerous than that of glaziers, because of their liability to lead poisoning or falls from scaffolds. Before the Bricklayers' and Glaziers' Boards evidence of a diametrically opposite character is given. Before these Boards witnesses show that the painters' work is safe, regular, and pleasant compared with their occupations. All, however, agree that of late years the cost of living has increased and higher wages are necessary for all wage-earners.

When the evidence in support of the employees' case is closed, employers present their side of the matter. This usually goes to show that wages cannot be raised, hours shortened, or conditions improved without injuring the industry; that profits of employers are not sufficient to warrant granting the demands; that if wages are increased such increase must be paid out of the pocket of employers or passed on to the public; that there are limitations to what the public can bear, and that if work is made more costly it will result in work being left undone which would otherwise be undertaken. Between the two sides thus put before the Board is in a fair way to obtain an accurate knowledge of existing conditions. After hearing witnesses it considers the "claims" in the light of the evidence and arrives at its "award." This document, which is in effect a written judgment, sets forth the conditions of employment which are henceforth to be observed. An award is generally made for a period of three years.

The above remarks apply to the Wages Board systems in force in New South Wales and Victoria. They are modelled upon legislation which has been in force in New Zealand for seven or eight years. In other Australian States there is similar legislation though all

differ in detail. Theoretically, the system appears equitable. In practice it is faulty. The weakest point, from the men's point of view, is that the cost resulting from increased wages is added to the price of commodities. As the wage-earner is a consumer as well, he has to pay more for commodities which are made and supplied by employees whose wages have been artificially raised. A source of weakness to employers is the absence of unanimity among themselves. The bulk of employees have aims in common. With employers it is different. Most are competitors; there is also diversity of interests. One employer, for instance, may do a better class of work and can afford to pay higher rates because his employees are above the average. Again, a master builder may be an employer of painters or plumbers. In this way diversity of interests arise, and it sometimes happens that one section of employers sides with the union because by so doing it will injure another section of employer. The master plumbers, for instance, favour the demands of the journeymen plumbers' union because the former harbour a grudge against master builders who employ journeymen plumbers instead of sub-letting plumbing work to master plumbers. In the same way master painters feel aggrieved because master builders undertake painting contracts. It is said that it was in this spirit that master painters at Sydney conceded to the union a forty-four hour week. Painters renovating occupied houses cannot conveniently start as early in the morning as painters working on new buildings, so that master painters would suffer less by such a concession than master builders. This simply illustrates the division of interests among employers.

If Wages Boards really solved labour difficulties the public would be inclined to favour them and put up with the increased cost. Their introduction was intended to do away with strikes and supply a peaceful means for adjusting differences. It cannot be said that they have fulfilled anticipations. Though an award is supposed to bind both parties to it, in reality it binds only one party, viz., employers. If an award does not please employees they resort to their old weapon of the strike. If, on the other hand, an employer fails to observe an award, he is soon brought before the Court, and if found guilty has to submit to a fine or imprisonment.

A master painter, for instance, a short time ago employed half a dozen painters for a few days at about a penny an hour under prescribed rates. He was convicted by the Industrial Court (a Court presided over by a judge, who does nothing else but deal with industrial matters) and fined an amount which, together with costs, totalled about £20.

Similar cases have occurred in which master builders, through negligence or erroneous interpretation of awards, have been heavily fined.

Apart, however, from the interests of either employers or employees, industries do not stand to gain in consequence of the regulations by which they are hampered. Injustice is done to youths who, owing to restrictions, are prevented from learning a trade. The apprenticeship system, which had died a natural death as far as the building trades in Australia were concerned, is made compulsory, and the employment of improvers prohibited. Demands for the revival of the apprenticeship system are alleged to be in the interest of boys themselves, whereas the motive really is to limit their employment. The jealousy with which boys are regarded has had the result of compelling many lads to become unskilled labourers. In New South Wales a youth of twenty-two or twenty-three years of age, who has sufficient knowledge to pass as a mechanic, may earn 11s. per day, while in the unskilled callings his wages are much lower. To show the effect of restrictions, it might be mentioned that an employer recently advertised at Sydney for carpenters and a labourer. Two carpenters applied, and, after accepting employment at 11s. per day, went away for their tools, but did not return. For the position of labourer there were over thirty eager applicants. The same spirit towards boys is shown by claims now being made by members of the brickmakers'

union, who demand that boys shall be paid same rates of wages as men. The explanation of the matter is that industries are in a flourishing condition, and demand, however absurd, have frequently to be conceded in order to prevent the deadlock which would occur if workmen left their employment.

INSURANCE AGAINST UNEMPLOYMENT.

THE Grand Committee commenced their consideration of the second part of the Insurance Bill, which relates to Unemployment Insurance on November 2. The building trade is especially affected by this part of the Bill, since it is one of those industries specified in Schedule 1 upon which the experiment is to be tried.

No amendments of any importance were made at this first sitting, but some discussion took place in relation to sub-clause (4) of Clause 1 which provides that, "Notwithstanding contract to the contrary, the employer shall be entitled to deduct from the wages of, otherwise recover from, the workman the contributions payable by the employer himself." An impression appears to have prevailed amongst certain members of the Committee that the provisions of the Trades Disputes Bill would have some bearing upon the position of employers under this clause, but we are unable to follow this contention.

The Bill in this respect makes no difference between contributions for general health insurance and unemployment insurance. (Clause 4, sub-clause (2), and Schedule 1, par. 7.)

The sub-clause in question is designed to prevent employers from placing the contributions due from them upon the shoulders of the workman, but contributions paid on behalf of the workman can be deducted from the wages otherwise recovered. (See Clause 61, sub-clause (3).)

But, although the Trades Disputes Act appears to have no direct bearing on this question, ill-feeling it has tended to engender between employer and employee does render the whole scheme of the Bill in making the employer the collectors of the insurance premiums contributions exceedingly undesirable.

The employer, in making deductions for wages demanded by the State, is always placed in an unenviable position as regards his servants. They never understand the compulsion he is under, and they credit him with making a profit out of the deductions so made. In the undertakings in which both health insurance and unemployment insurance are combined the deduction from each man per week will be 6d., a very large sum, and any process against the servant where a deduction cannot be made from his wages is, in fact, very difficult. Trades disputes may arise out of these deductions, any proceedings taken to endeavour to recover contributions, and we strongly deprecate employers being made State insurance collectors. Surely some system could be devised whereby the Government could reach the workman directly without the intervention of the employer. The employers could be compelled to make returns to the approved societies and Health Committees, which, besides administering funds, should undertake their collection.

We are not blind to the difficulties which in the way of collection otherwise than through the employers, but the existence of difficulties does not justify the relations of employer and employee being further complicated by State legislation of this character.

THE LONDON CO-OPERATIVE UNION OF BUILDING CONTRACTORS, AND ALLIED TRADES.

We have received the rules of the Co-operative Union of Builders, Contractors, and Allied Trades, incorporated under the Friendly Societies Act on October 23. The first meeting took place on the 4th inst. The Union's business, we are informed, with 3,500 members in hand. Several contracts have been promised to the Union by good firms. For further particulars apply to the Secretary, J. N. C. Josephson, at the registered offices and clubrooms, 45 and 46, Lower Market Waterloo-road, London, S.E.

LONDON ASSOCIATION OF MASTER DECORATORS.

The October quarterly meeting of the Association of Master Decorators the meetings were opened by an address from the President on his visit to the Convention at Derby. Wilkinson also contributed to the interest meeting by giving his impressions of the Derby Convention.

After a discussion on various matters the subject of the meeting was taken on the subject of recent strikes, and the Secretary was asked to sign on behalf of the Association a memorandum to the Prime Minister on the subject.

It was reported that the Water Board had approached with reference to certain works made by them for water used for the down outsides of houses, and, as the result of the representations made by the Association, the practice has been modified, so that it is only made where the building is being repaired and decorated, or where otherwise extensive and needs to be done.

The subject of scholarships, it was also decided that the Educational Committee is now working with the London County Council at present visiting their technical schools with a view to devising a scheme for the bettering of decorators.

A question of white-lead was also discussed, and was resolved—

That, as no suitable substitute for white-lead has been found, its use be continued under the existing regulations.

A vote of thanks was accorded the President who had contributed to the success of the meeting, and the proceedings ended.

W. H. SHIELDS MASTER BUILDERS.

At the annual meeting of the South Shields Building Trades Employers was held at County Hotel, Westoe. The President, James Anderson, presided, and welcomed Mr. E. H. Hannay, the newly-appointed secretary.

Treasurer's report was presented by the Treasurer, Mr. Alexander Ross, and was of a satisfactory nature. Various matters relating to the trades represented were discussed, and a resolution was passed supporting certain proposed amendments of the Insurance Bill.

Regarding the Trades Disputes Act, relating to picketing, was discussed, and action in favour of limiting the number of men in the case of trade disputes was unanimously carried. The President (Mr. Anderson), the Vice-President, Messrs. W. V. Jary and J. Christie, the Treasurer, Mr. Alexander Ross, were elected to their respective offices, and certain committees were appointed. The meeting decided that in future the monthly meetings be held on the last Tuesday in each month in the North-Eastern Bank-chambers. The close of the business meeting the supper was held.

GENERAL BUILDING NEWS.

NEW CHAPEL AT WORKSOP COLLEGE.

A new chapel has been erected from the designs of Aston Webb, R.A., and was dedicated on the 2nd inst. The length from the chancel arch to the west door is 102 ft., the width is 36 ft., the height to the apex of the vaulted roof is 56 ft. The building provides seating accommodation for 450.

BURTON GRAMMAR SCHOOL.

Repairs and improvements have been carried out at this school at a cost of about £1,000. The architect was Mr. H. Beck, and the work includes an art-room, preceptor's room and two classrooms. The builder was Messrs. Kershaw.

NEW INSTITUTE, LILLYSLEIGH.

Plans prepared by Mr. Taliesin Rees, architect, of Liverpool, for this institute, which the architect was Mr. H. Beck, and the work has been approved, and tenders for the same being invited. The institute will be a hall for public use, tea-room, etc.

NEW RED MAIDS' SCHOOL.

Buildings have been erected from the designs of Mr. Frank Wills, architect, and the work includes accommodation for eighty girls. The work was carried out by Messrs. Stephens and Sons, builders.

EDWARD MEMORIAL, FOOTING BROADWAY.

A memorial to the late King was unveiled on Saturday last by the Mayor of London. The memorial is the work of

Mr. Rosenlieb, a young sculptor of Wandsworth, and is a bronze statue 9 ft. high on a 9-ft. pedestal of polished Peterdown granite. It represents the King in the uniform of a Field-Marshal.

TRADE NEWS.

Messrs. Samuel Elliott & Sons, Ltd., Caversham, Reading, the well-known and old-established joinery manufacturers, have several important contracts in hand which will keep the large workshop and Messrs. Elliott's staff fully employed for several weeks to come. As will be seen from an advertisement on another page, the Receiver and Manager (Mr. Sydney W. Tubbs, F.C.A., of Messrs. Dixon, Wilson, Tubbs, & Co., 28, Basinghall-street, E.C.) is offering the plant, machinery, stock, and goodwill of the business for sale as a going concern.

Under the direction of Mr. W. McPherson, F.S.I., architect, Drymen, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump," ventilators and air inlets, has been applied to Drymen Schools, Drymen, N.B.

Messrs. O'Brien, Thomas, & Co., Upper Thames-street, London, and Excelsior Works, South Bermondsey, have recently supplied two of their D. O. Boyd's exhaust roof ventilators for the new Council School at Countesthorpe, near Leicester.

A large chiming clock with one dial is to be placed upon the Parish Church of Hale Magna, Lincolnshire. The order has been given to Messrs. John Smith & Sons, Midland Clock Works, Derby, who are also making clocks for Fleet Church and Freiston Church.

The external stonework of the Middlesex Music-Hall, which was to be opened this week, was executed in B.S.M. Portland. Among the recent orders which have been executed in the British Stone and Marble Company's ferro-stone glazing bar are the grand stand at Newmarket, Messrs. W. H. Smith & Sons' printing works, and the Great Western Railway Company's new station at South Lambeth.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At Tuesday's meeting of the London County Council, the following applications under the London Building Acts were dealt with, the names of the applicants being given in parentheses:—

Lines of Frontage and Projections.

Clapham.—Erection of bay windows, porches, and oriel windows in front of fourteen houses on the eastern side and sixteen houses on the western side of Muncester-road, Clapham (Mr. E. J. George for Mr. W. H. George).—Consent.

Hackney, Central.—Erection of a building upon the site of Nos. 538 and 540, Kingland-road, Hackney (Mr. W. Watson for Mr. M. G. Neugeb and Mr. A. P. Grange).—Refused.

Hampstead.—Erection of two houses upon a site on the northern side of St. Cuthbert's-road, Hampstead, next to the north-eastern side of Shoot-up-hill (Messrs. Rix & Wilkins).—Refused.

Hampstead.—Additions in front of the Hampstead Synagogue on the southern side of Dennington Park-road, West End lane, Hampstead (Messrs. Joseph & Smith).—Consent.

Hampstead.—One-story addition at the rear of No. 14, Minster-road, Hampstead, abutting upon the north-eastern side of Fordwych-road (Mr. S. L. C. Gilks).—Consent.

Islington, North.—One-story shop in front of No. 541, Holloway-road, Islington (Mr. G. Carter for Mr. Wolley).—Consent.

Lewisham.—Retention of a metal sign over the one-story shop in front of No. 148, Rushey-green, Catford (Mr. W. Daniell for Messrs. John Best, Ltd.).—Consent.

St. Pancras, East.—Projecting iron staircase next to Clifton-villas at a proposed building upon a site abutting upon the southern side of Clifton-road and the eastern side of Clifton-villas, St. Pancras (Messrs. James, Laycock, & Bellamy for Messrs. Jones Brothers (Holloway), Ltd.).—Refused.

Strand.—Projecting unilluminated sign in front of No. 9, Essex-court, Strand (Messrs. Pratt & Co.).—Consent.

Strand.—Projecting sign in front of The Goupil Galleries, No. 5, Regent-street, Waterloo-place (Brilliant Sign Company, Ltd.).—Consent.

Wandsworth.—One-story shops in front of Nos. 1 to 25, The Boulevard, Balham High-road, Balham (Messrs. W. & E. A. Hunt).—Consent.

Wandsworth.—Addition in front of the Putney Upper Grade Church of England School on the western side of Walker's-place, Putney (Mr. H. G. Leslie for the Managers of the School).—Consent.

Wandsworth.—Erection of bay-windows and porches to six houses on the north-western side and six houses on the south-eastern side of

Hilldown-road, Wandsworth (Mr. G. J. Philpott).—Consent.

Westminster.—Projecting pilasters and cornices on the Victoria-street frontage and a portion of the Spencer-street frontage of the premises of the London County and Westminster Bank, Ltd., Westminster (Messrs. Hall-Jones & Cummings for the London County and Westminster Bank, Ltd.).—Consent.

Width of Way and Lines of Frontage.

Fulham.—Erection of buildings on the south-western side of Burlington-road, Fulham, between No. 33, Burlington-road and the playground of All Saints' School (Mr. L. Kesteven).—Consent.

Stepney.—Erection of a building on the northern side of Oxford-street, Stepney, eastward of Bedford-street (Messrs. F. Borcham, Son, & Gladding).—Consent.

Wandsworth.—One-story addition to a beer-store building at the "Corner Pin" public-house, Summerstown, Wandsworth, to abut upon the northern side of Riverside-road (Mr. E. Penn for Mr. H. Washington).—Consent.

Lines of Frontage and Construction.

Hammersmith.—Iron and glass shelter in front of the George Hotel, The Broadway, Hammersmith (Messrs. Keeling, Teale, & Co., for Mrs. E. A. Ringwood).—Refused.

Kensington, South.—Iron and glass shelter to the Pelham-street entrance to the South Kensington Tube Railway-station (Mr. W. E. Mandelick for the London Electric Railway Company).—Consent.

St. George, Hanover-square.—Iron and glass shelter in front of Nos. 61 and 62, Conduit-street, St. George, Hanover-square (Mr. B. A. Slade).—Refused.

Strand.—Iron and glass shelter at the Argyle-street entrance to the Oxford-circuit Tube Railway-station (Mr. E. P. Grove for the Central London Railway Company).—Consent.

Wandsworth.—Iron and glass roof at the flank of No. 203, Upper Richmond-road, Putney, next to Ravenna-road (City Hosiery Company, Ltd.).—Refused.

Lines of Frontage and Space at Rear.

St. George, Hanover-square.—Seven houses on the eastern side of Park-street, St. George, Hanover-square, to abut also upon the southern side of Upper Grosvenor-street, and the northern side of Reeves-mews, with a projecting portion next to Upper Grosvenor-street, and with an irregular open space about such buildings, so far as relates to (i.) the erection of two houses instead of three on the southern portion of the site next to Reeves-mews; (ii.) the omission of three of the five porches next to Park-street, and an alteration in the position of the two remaining porches; and (iii.) an increase from 6 ft. 6 in. to 6 ft. 8 in. in the projection of the central feature next to Upper Grosvenor-street (Messrs. Blow & Billery).—Consent.

Width of Way, Line of Frontage, and Space at Rear.

Kensington, South.—Addition at the rear of No. 29, Holland Park-avenue, Kensington, next to the eastern side of Holland walk (Messrs. R. A. Briggs & Browning for Mr. G. Pidduck).—Consent.

Space at Rear.

Hammersmith.—Erection of a building on the northern side of King-street, Hammersmith, between Studland-street and Galena-road (Messrs. J. S. Quilter & Son for Mr. A. Carreras).—Consent.

Space at Rear and Projections.

Hampstead.—Two houses on the northern side of St. Cuthbert's-road, Hampstead, with irregular open spaces about such buildings, and with porches next to St. Cuthbert's-road (Messrs. Rix & Wilkins).—Consent.

Space at Rear and Alteration of Buildings.

Hampstead.—Wood and zinc roof over the yard at the rear of No. 21, Belzize-lane, Hampstead (Mr. W. Cayford for Mr. J. W. Barry).—Consent.

Separation and Alteration of Buildings.

City of London.—Deal staircase and the erection of an iron balcony at No. 13, St. Helen's-place, City (Mr. H. Chaffield Clarke for the Leathersellers' Company).—Consent.

Footings to Walls.

Westminster.—Omission of the brick footings to the walls of a house next to the western side of Smith-square, Westminster, and the northern side of new road to lead from Smith-square to Tufton-street (Messrs. Holloway Brothers (London), Ltd., for the Right Hon. R. McKenna, M.P.).—Consent.

Cubical Extent.

Bow and Bromley.—Additional cubical extent at the premises of Spratts Patent, Ltd., Fawcett-street, Poplar, so far as relates to the erection of an additional story (Messrs. Max Clarke & Garbutt for Spratts Patent, Ltd.).—Consent.

City of London.—Additional cubical extent in respect of a division at the premises of

Messrs. Bradbury, Grestorex, & Co., Ltd., abutting upon Aldermanbury, Church-passage, and Fountain-court, City (Mr. H. Chaffield Clarke).—Consent.

Finsbury, East.—Erection of a building on the northern side of Banner-street, St. Luke, exceeding 250,000 cubic ft. in extent (Messrs. M. W. King & Sons for Messrs. Chater Lea, Ltd.).—Consent.

Uniting of Buildings.

City of London.—Uniting of Nos. 18, 19, and 20, Holborn Viaduct, City, with No. 21, Holborn Viaduct, by an opening at the third-floor level (Mr. W. E. Clifton).—Consent.

City of London.—Uniting of Nos. 77 and 78, Fore-street, City, by an opening at the fourth-floor level, and the provision of doors of the said opening (Messrs. W. Gower & Son).—Consent.

Greenwich.—Formation of four openings in a division wall at the premises of the Greenwich Inland Linoleum Company Ltd., Tunnel-avenue, Greenwich, between the existing inlaying-room and a proposed inlaying-room (Mr. W. C. S. Styche for the Greenwich Inland Linoleum Company, Ltd.).—Consent.

Holborn.—Formation of an opening between Nos. 22 and 24, Hinton-wall, Holborn, at the second floor level (Mr. T. Coles for the Educational Supply Association).—Consent.

Hoxton.—Uniting of Nos. 45 and 45, Great Eastern-street, Hoxton, with No. 58, Curtain-road, so far as relates to the further uniting of No. 58 with No. 56, Curtain-road (Mr. W. Campbell Jones).—Consent.

Strand.—Formation of openings in the party wall between No. 3, Clifford-street, and No. 14, Old Burlington-street, W. (Mr. C. H. Townsend for Messrs. Owen Grant, Ltd.).—Consent.

The recommendations marked + are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Additions to Northern meeting-rooms (4,000l.); Mr. A. M. McKenzie & Son, architects, 543, Union-street, Aberdeen.

Alcester.—Completion of school (700l.); Mr. B. King, Secretary, Education Committee, Warwickshire County Council, Warwick.

Ashford.—Technical institute, Elwick-road; Mr. F. W. Crook, Secretary, Education Committee, Kent County Council, Caxton House, Westminster, S.W.

Atleborough.—Infirmary (14,030l.); Mr. R. Shanks, builder, Chatteris.

Ayrton.—School; Mr. W. V. Dixon, Secretary, Education Committee, West Riding of Yorkshire County Council, Wakefield.

Binley.—School; Messrs. Wilmott, Fowler, & Wilmott, Birmingham.

Bishop Auckland.—Church and Sunday School; Messrs. Gordon & Gunton, architects, Finsbury House, E.C.

Blaby (Leicestershire).—Alterations at workhouse (1,500l.); Mr. W. M. Cowdall, architect, 12, Greyfriars, Leicester.

Blyth.—Offices for Harbour Commissioners; Messrs. Cackett & Burns Dick, architects, Pilgrim-street, Newcastle.

Bristol.—School, Dame Emily Playground (700l.); Mr. T. H. Yabbicom, Surveyor, Bristol Town Council.

Byker.—Block of business premises; Messrs. Marshall & Tweedy, architects, 17, Eldon-square, Newcastle.

Carnwath.—Additions to public school (2,850l.); Messrs. Traill & Stewart, architects, 38, High-street, Lanark.

Chaddlesworth.—School (seventy-two places); Architects, care of the Trustees, Saunders Charity.

Chelmsford.—Enlargement of fire-station; Mr. C. Brown, Surveyor, Chelmsford Town Council.

Dalton-in-Furness.—Alterations to school; Messrs. T. F. Tyson & Sons, builders, Church Walk, Uxterstone, Lancs.

Delziel.—Additions to High School (3,500l.); Mr. James Cowie, architect, 32, Brandon-street, Motherwell, N.B.

Darlington.—School, Reid-street; Mr. A. C. Boyle, Secretary, Education Committee, Darlington Town Council.

Dewsbury.—Isolation hospital (600l.) for the Dewsbury Joint Hospital Board.

Didcot.—Wallingford, and Faringdon (Berks).—Manual instruction centres (880l.); Messrs. Bosher & Son, builders, Chislesey, Berks.

Dudley.—The following plans have been passed:—Extensions to works, Price-street, Kate's-hill, for Messrs. E. Hopkins & Co.; eight houses, Gammage-street, for Mr. J. W. Seckerson; drill-hall and offices, Tricote-road, for the Worcestershire Territorial Association.

Dumbarton.—Catholic school. Clerkhill

(3,000l.); Mr. A. C. Denny, 37, Church-street, Dumbarton.

Dunfermline.—Parish offices (6,000l.); Messrs. Muirhead & Rutherford, Abbey Park-place, Dunfermline.

East Barnet (Herts).—Enlargement of Brunswick Park School (fifty extra places); Mr. A. R. S. Hallidie, Secretary, Education Committee, Herts County Council, Hertford.

Evesham.—Catholic schools; Messrs. Pugin & Pugin, architects, 51, North John-street, Liverpool; Messrs. Espley & Co., builders, High-street, Evesham.

Gillingham.—Offices, stores, etc., for Electricity Department; Mr. J. L. Redfern, Engineer, Gillingham Town Council.

Glasgow.—Picture hall, Renfrew-street (2,200l.); Mr. N. C. Duff, 115, Wellington-street, Glasgow. Preserve factory, Kinning Park (4,500l.); Mr. A. Gardner, architect, 154, Bath-street, Glasgow.

Gower.—Hospital, Fairwood Common (3,000l.); Mr. H. A. Ellis, architect, care of Gower and Oystermouth Hospital Committee, Gwysyllt. School (200 places); Mr. J. C. Davies, Secretary, Education Committee, Denbighshire County Council, Ruthin.

Hampton.—Drill-hall, Tudor-road; Capt. Cranfield, Surveyor, Middlesex Territorial Association.

Hawkebury.—School; Mr. H. W. Household, Secretary, Education Committee, Gloucestershire County Council, Gloucester.

Hendrefoilan (Sketty).—Proposed chalets; Mr. L. Jenkins, Clerk, Board of Guardians, Swansea.

Hilden (near Belfast).—School (3,000l.); Mr. W. J. Fennell, architect, 7, Donegall-square, Belfast.

Hirst (Northumberland).—School (3,000l.); Mr. W. Forrest, architect, Moot Hall, Newcastle; Mr. J. Douglas, builder, Hepscott, Morpeth.

Hitchin.—Building for the Herts and Beds. Co-operative Bacon Factory; President, Lord Lucas.

Huddesdon.—Ginger-beer factory at brewery for Messrs. Christie & Co.

Holmfirth.—School (3,600l.); Mr. W. V. Dixon, Secretary, Education Committee, West Riding of Yorkshire County Council, Wakefield.

Hove.—The following plans have been passed:—Alterations to garages, Connaught-road, for Mr. J. W. Hayler; garages, Hove-street, Messrs. Clayton & Black for Mr. J. Hayler.

Hud Hey.—Motor garage (2,700l.); Mr. W. Tattersall, The Lindens, Haslingden.

Inverness.—Extensions to poorhouse (3,000l.), also villa, Trehshill-road (1,300l.); Messrs. A. Ross & Son, Queensgate-chambers, Inverness.

Police-chambers (3,000l.); Mr. R. I. McBeth, Queen's House, Inverness.

Iwade.—School; Mr. F. W. Crook, Secretary, Education Committee, Kent County Council, Caxton House, Westminster, S.W.

Keresley.—School (160 places); Mr. Bolton King, Secretary, Education Committee, Warwickshire County Council, Warwick.

Kirkintilloch.—Extensions to school (2,000l.); Mr. J. Shanks, architect, Kirkintilloch.

Leicester.—Proposed public hall (17,350l.); Mr. E. G. Mawbey, Surveyor, Leicester Town Council.

Lerwick.—Extensions to Fish Market (2,000l.); Mr. G. Cruikshank, Surveyor, Lerwick Town Council.

Lindale.—Alterations and additions to parish church (1,750l.); the Vicar.

Little Hulton (near Bolton).—Drill-hall, Bridgewater-street; Colonel Fraser, Elliott-street, Liverpool.

Llandrindod Wells.—Adaptation of Victoria Hall for central offices, etc.; Secretary, Local Unionists Club, Llandrindod Wells.

Llanely.—School, near Llanely (6,000l.); Mr. Wm. Griffiths, architect, Falcon-chambers, Llanely.

Loughbrickland.—Dispensary residence (1,200l.); Clerk, Banbridge Board of Guardians.

Lutterworth (Leicester).—Extensions to cottage hospital; Mr. D. Rourke, builder, care of the Governors, Lutterworth Cottage Hospital.

Lydd.—Proposed parochial hall (2,300l.); Vicar, St. Peter's Church.

Manchester.—Shops and offices, Market-street; Messrs. J. Beaumont & Son, architects, 10, St. James's-square, Manchester.

Mullingar.—College Chapel (2,500l.); Messrs. J. O'Callaghan & Webb, South Frederick-street, Dublin.

Nelson.—School, Bankhouse-road (2,000l.); Mr. Gunson, architect, 10, Marsden-street, Manchester.

Newcastle.—Electric theatre; Mr. A. Stockwell, architect, 11, Pilgrim-street, Newcastle.

New Maid (Aberdeenshire).—Extensions to auction mart (2,500l.); Messrs. Walker & Duncan, architects, 3, Golden-square, Aberdeen.

Nuneaton.—Additions to workhouse (1,350l.);

Architect, care of Mr. C. Blakeway, Clerk, Board of Guardians, Nuneaton.

Pudham.—Shed (400 looms) for the Albion Mill Company.

Paisley.—Church and suite of halls (10,000l.); Mr. T. G. Abercrombie, architect, 1, Cowan-place, Paisley. Headquarters at the Paisley Barracks for the Renfrewshire Fortress Works Company of the Royal Engineers; Messrs. Craig, Barr, & Cook, architects, Paisley.

Patricroft (Eccles).—Baths, Cromwell-road (8,550l.); Messrs. Wooller & Sons, builder, Eccles.

Port Glasgow.—Parish church hall (2,000l.); Messrs. Duncan & Copland, architects, 14, West Regent-street, Glasgow.

Portree.—Shops and houses (3,500l.); Mr. R. J. McBeth, Queen's House, Inverness.

Port Sunlight.—School off Chester road (6 places); Mr. R. P. Ward, Secretary, Education Committee, Cheshire County Council, Chester.

Reading.—Catholic schools; Mr. R. Curtis, builder, Upper Redlands-road, Reading.

Reochdale.—Foundry, Belfield-lane, 1, Reochdale.

Romford.—School, London-road (4,910l.); Mr. G. Brown, builder, Maidstone-road, Gray Essex.

Rotherham.—Proposed public hall, High-street; Mr. E. B. Martin, Engineer, Rotherham Town Council. The following plans have been passed:—Ten houses, Selwyn-street, Hatherley-road, for Mr. H. James; eight houses, Doncaster-road, for Mr. J. H. James; additions, Fernham House, for Mr. A. H. Haddon.

Rugby.—School (300 places); Mr. Bolt, King, Secretary, Education Committee, Warwickshire County Council, Warwick.

Sheffield.—Enlargement of school, Westwood (450 extra places); Mr. G. S. Baxby, Secretary, Education Committee, Sheffield Town Council. Church, Chantry-road (2,800l.); The Trustees, Woodstock United Methodist Church, Sheffield. Underground conveniences, Nether Edge Tram Terminus; Mr. C. Wike, City Engineer, Sheffield City Council.

The following plans have been passed:—Sewer, Overton-road, for Mr. W. J. Patchell; fourteen houses, Dovercourt-road and Arbuthorne-road, for Mr. E. Martin; alterations and additions to premises, Bolsover a Vickers roads, for the Brightside and C. Brook Co-operative Society, Ltd.; motor garage, Abbeydale-road, for Mr. H. C. Sayer, salesshops and offices, Holme-lane, Walkers lane, and Langsett-road, for Mr. G. Funn, offices, workshops, and stores, York-street, Harthead, for Sir W. C. Leng & Co.; alterations and additions to premises, Cross Ad street, for the Uppertorpe Picture Palace Company.

Sholing.—Technical school and post-teachers' centre; Mr. D. T. Cowan, Secretary, Education Committee, Hants County Council, Winchester.

Silksworth.—Large temperance institute; Mr. Wilson Hay, architect, Wingate, Durham; Mr. F. Brown, builder, Sunderland.

Slaithwaite.—Drill hall; Commandant, Company, 7th Duke of Wellington Regiment, Stary, Messrs. Marshall & Sons, Ltd., builders, 192, Oldham-road, Ashton-under-Lyne.

Stranraer.—Additions to academy (4,000l.); Messrs. H. & D. Barclay, architects, 245, Vincent-street, Glasgow.

Sudbury (Suffolk).—Post-office, Station-road; Messrs. G. Grimwood & Son, builders, Acton-square, Sudbury.

Sunnyhurst.—Store and house for Darwen Industrial Co-operative Society; Swindon.—Domestic centre; Mr. A. Bevilacqua, architect, 10, Victoria-street, Swindon.

Troon.—Buildings, Harbour-road (2,500l.) for the Ailsa Ship Building Company.

Waterfoot.—Extensions to Sisselough Mill; Messrs. Mitchell, Ashworth, & Stanfield.

West Bromwich.—Proposed utilisation of Great Barr Hall and Estate for consumptive and convalescent patients; Mr. H. W. Clerk, Board of Guardians, West Bromwich.

Winton (Bournemouth).—Baptist church (3,000l.); Messrs. G. Baines & Son, architects, 5, Clewer, Winton.

Wolverhampton.—Nursing institution; A. W. Worrall, architect, Queen's-chamber, North-street, Wolverhampton.

Yeovil.—Twelve houses; Mr. N. G. F. Surveyor, Yeovil Rural District Council.

REINFORCED CONCRETE IN UNDERPINNING.

With reference to the article under heading which appeared in our issue October 27, we are asked by Mr. C. R. P. of 87, Bishopsgate, E.C., to state in

owing to the very large number of inquiries he has had on the subject, he has not been able to answer them all immediately, but

do so as quickly as possible. It would be great assistance to him in answering inquiries if architects would state the nature of

particular job for which they require details.

* See also our list of Competitions, Contracts, etc., on another page.

THE LONDON COUNTY COUNCIL.

usual weekly meeting of the London County Council was held on Tuesday in the Town Hall, Spring-gardens, S.W. The Mayor, Mr. E. White, presided.

FINANCE.—The Finance Committee reported a loan of 3,740*l.* was to be made to the Hammersmith Borough Council for housing purposes. The Stepney Borough Council is to have a loan of 15,700*l.* for electricity purposes.

GROUND, GREENWICH. It was reported that plans had been approved for the enlargement of the Randall-place Schools at an estimated cost of 285*l.*

SCHOOL, LIMEHOUSE.—It is proposed to erect a school on a site in the High-street, Limehouse, to provide accommodation for 100 children.

PRESENTATION TO THE LIBRARY.—It was agreed that Mrs. D'Oyly Carte has presented to the library of the Council a copy of the publication of 1825, containing Lieut.-Col. Mordaunt's proposals for the construction of a bankment quay on the north side of the River Thames from Craven-street to Blackfriars-bridge.

SPRINGFIELD PARK.—A plot of land has been acquired in Springfield, Clapton, about 100 acres in extent, for an addition to Springfield Park, and the estimated cost of laying out the same is 350*l.*

WOOLWICH FERRY. Various repairs are to

be carried out to the river bank in front of Stanley-road, North Woolwich, at an estimated cost of 600*l.*

WATERLOO BRIDGE.—Owing to the accumulation of water under the wood blocks forming the carriage-way of this bridge, repairs are to be carried out at a cost of about 250*l.*

TRAMWAY DEPÔT, POPLAR.—It is proposed to erect a permanent-way depôt at Leven-road, Poplar, at an estimated cost of 15,350*l.*, which includes 110*l.* for the erection of a wall between the depôt and Bromley Hall road school.

OLD OAK ESTATE.—In a report of the Education Committee it was stated that it was desirable to provide additional public elementary school accommodation for about 1,500 children on this estate at Hammersmith. Three temporary iron buildings are to be erected to serve as school premises until a permanent school is erected.

FULHAM EMPIRE.—A petition was presented to the Council, signed by 600 school managers, teachers, and others in Fulham, against the granting of a music and dancing licence to the new theatre of varieties which Mr. Oswald Stoll intends to erect in the Fulham-road. A petition was also presented, signed by 17,538 people in Fulham, in favour of the licence being granted.

FIGURE CASTINGS.

Three castings which the Carron Company, Stirlingshire, has recently produced in iron from the models of Mr. Hibbert Binney, A.R.S.A., road, N.W., and under the supervision of the architect, Mr. Ernest E. Fetch, A.R.I.B.A., John-street, Adelphi. When finished they will be fixed in the forecourt of Mr. Fetch's new Municipal Buildings at South Shields.

In referring to the work the company say they "would have preferred for several reasons to have executed it in bronze or lead, and it required some enterprise to undertake the job in cast-iron, a material which, though economical, does not lend itself to touching up after casting. The single figures are about 10 ft. high."

METROPOLITAN ASYLUMS BOARD.

The Metropolitan Asylums Board, at their fortnightly meeting on the 4th inst., dealt with the following, amongst other matters:

Durand Asylum.—On the recommendation of the Asylums Board it was decided, subject to the sanction of the Local Government Board, to roof in the upper yard of the workshops for males at the above asylum at an estimated cost of 700*l.*

South-Western Hospital.—It was decided to apply to the Local Government Board for sanction to replace the existing corrugated-iron building for the storage of steam coal at the above hospital, with a brick building, estimated to cost 380*l.*

Joyce Green Hospital.—The Works Committee recommended, and it was agreed to, subject to the consent of the Local Government Board, to accept an estimate for the supply of high-efficiency inverted gas burners to the hospital, without, in the first instance, advertising for sealed tenders.

METROPOLITAN WATER BOARD.

At the monthly sitting of the Board on the 3rd inst., the following matters were dealt with:—

Repairs to Cottages.—It was agreed to accept the tender of Messrs. Clemens Brothers, amounting to 750*l.* 10*s.*, for the execution of repairs to the Board's cottages at Albion-terrace, Sewardstone, and the tender of Messrs. Bate Brothers, amounting to 272*l.*, for structural alterations to the Board's cottages at Brookfield-lane, Cheshunt.

Roads.—An application by the Hornsey Borough Council to construct a carriage-way over the Board's reservoir land at Fortes Green, and a footplate on the east side of the reservoir, were acceded to. It was resolved to incur an expenditure of 1,300*l.* in making up and paving Kirtling-street and Cringle-street, Battersea.

Linking up Supplies.—An estimate of 3,500*l.* was affirmed for the laying of a new main in the North Woolwich subway under the Thames, in course of construction by the London County Council, with a view to the connection of the water supply on the north and south side of the river.

LEGAL COLUMN.

Form IV. of the Finance Act.

The original action, *Dyson v. Attorney-General*, brought to test the validity of Form IV. under the Finance Act, came on for hearing recently in the Chancery Division. It will be remembered that this case has already been to the Court of Appeal, but simply on a preliminary point as to whether such an action could be brought against the Attorney-General at all. This point was decided in the plaintiff's favour by the Court of Appeal (see the *Builder*, December 24 last) and the case was to proceed to trial.

In the meantime another test case, *Burghes v. Attorney-General*, has come before the Courts on Form VIII. (see the *Builder*, May 10 last). Two points raised in *Dyson's* case were decided in this case—1. That the plaintiff had not been given the full thirty days to comply with the notice; 2. That the Commissioners had no right to require the plaintiff to send the form to anyone but themselves.

When *Dyson's* case came on for hearing the Attorney-General at once intimated that he would submit to judgment, as the two points decided in *Burghes's* case, which is under appeal, would entitle *Dyson* to judgment here.

In *Dyson's* case, however, a third and very important point was raised, viz., that it was *ultra vires* the Act to issue the question marked (b): "If the person making the return is also the occupier, state the annual value, i.e., the sum for which the property is worth to be let, the owner keeping it in repair."

Owing to the course the proceedings have taken this latter point still remains undecided, which appears to be a matter for regret seeing the number of persons involved in answering such questions.

From the proceedings in *Dyson's* case it appears that the Government official to whom the forms had to be sent was the village blacksmith.



Iron Figure and Lamp for Municipal Buildings, South Shields. Designed by Mr. Hibbert Binney.



Cast-Iron Figure and Lamp for Municipal Buildings, South Shields. Designed by Mr. Hibbert Binney.

LAW REPORT.

Costly Dilatoriness.

The Aerated Bread Company, Ltd., 24, "Batechup," were summoned as the owners of 86 and 88, Cannon-street, for neglecting to comply with an order of the London County Council made under the Buildings Act to have double iron doors and roller shutters placed in the party wall between 88, Cannon-street and 32, Bush-lane.

Mr. Todd, District Surveyor, said nothing had been done in the direction of complying with the order until the 23rd ult. (although these proceedings had been pending since May 16 last), when he understood an order was given to make the doors. The case had been before the Court since September 22.

The Lord Mayor said there had been a most unwarrantable delay on the part of the company, and an entire failure on the part of those advising the company to appreciate their position in the matter, and he should fine the company 20*l.* and costs.

LONDON COUNCILS.

Hermesley.—Plans have been passed for a motor garage and storage premises in Leroy-street for Messrs. J. E. Witer & Co., 89, Newington Butts, S.E., on behalf of Mr. J. Pace, 44, Leroy-street, S.E.

Deptford.—Plans have been passed for Messrs. Lawrance & Sons, for the erection of a new police-station in Amersham vale, also for Mr. J. O. Cook, for additions to the Key Glass Works, Coldblow-lane.

Hackney.—The following plans have been passed:—Mr. E. E. Fowler, factory, Bull-alley, near Grevdon-street; Mr. M. B. Porry, factory, Cazenove-road; Messrs. J. W. Falkner & Sons, cinematograph theatre, Kingsland-road.

Hornsey.—With regard to the scheme which the Highways Committee have had under consideration with regard to the widening of Seven Sisters-road at the tramway terminus, the Borough Engineer reports that he had been advised by the Chief Engineer of the London County Council to again put the proposal forward with a plan which provided for the adding of a strip of Finsbury Park on the north-west side of Seven Sisters-road for a length of about 740 ft., to form a siding for a double line of rails for the Middlesex rails, the track to be 68*ft.* 6 in. wide. It was also suggested to retain the footpath on the north-west side of Seven Sisters-road and form a new one on the north-west side of the proposed siding. As an alternative he suggested approaching the Middlesex County Council with a view to depositing a County Bill, authorising the construction of an independent light railway the whole length of Seven Sisters-road, between the Finsbury Park terminus and Green-lanes, and for the acquisition of a strip of Finsbury Park land for this purpose. At the last meeting of the Council the Highways Committee reported having written to the London County Council urging them to carry out the suggested widening, and to the Middlesex County Council, suggesting the promotion of a Bill on the above-mentioned lines. The tender of Messrs. William Griffiths & Co., at 34*l.*, has been accepted for making up Woodside Cottages, Churchyard Bottom. The following plans have been passed:—Mr. T. F. Waggitt, Finsbury-pavement, alterations and additions to No. 80, North-hill, Highgate; Messrs. F. Cottrell, Ltd., alterations and additions to lodge at Womesley House, Dickenson-road, Stroud Green, also for a motor garage at Woodthorpe, Shepherd's-hill, Highgate. Plans have been lodged by Mr. Herbert Collins, trading as Messrs. Herbert & Co., Rookfield-avenue, Muswell-hill, for twelve houses, in St. James's-lane, Muswell-hill; also by Mr. C. Rollason for a temporary building for an electric theatre, St. James's-hill.

Lambeth.—The Public Health Committee report that, in the new by-laws made by the London County Council, defining the person responsible under the drainage by-laws and the by-laws as to depositing plans under the Metropolis Management Act, 1855, and which have just been approved by the Local Government Board, all plans, sections, and particulars relating to work are to be deposited by the builder, who shall be the person liable to the penalties provided in the said by-laws for the failure to deposit such plans, sections, and particulars, and that such builder shall, in carrying out any such work as aforesaid, observe all requirements contained in the by-laws made by the London County Council under the provisions of the Metropolis Management Act, 1855, sect. 202, and he shall be liable to the penalties provided for a breach of the said by-laws. The word "builder" is interpreted by the by-law as meaning the builder, contractor, or the person actually carrying out

the work, but not including workmen in the employ of such builder, etc. Repairs are to be carried out to the kerbs and footways of Geneva-road, at an estimated cost of 200*l.* Tenders are to be invited for tar-spraying roads during the financial year 1912-13, at a cost not exceeding 1,000*l.* The work of paving the footways on the west side of Lyham-road is to be proceeded with immediately. **Walthamstow.**—Plans submitted by the Engineer have been approved for making up and paving Merriam-avenue. An offer has been received from the Trinidad Lake Asphalt Paving Company, Ltd., to erect a plant in Walthamstow for the manufacture of Trinidad asphalt macadam under certain conditions. The Council have decided to take from the company a quantity of not less than 2,500 tons within the next two years, provided the company erect the plant and charge for the macadam at a rate not exceeding 1*l.* 6*s.* per ton, and for bitumen 5*l.* 5*s.* per ton, both delivered. Plans have been passed for Mr. T. Baker for six shops, Winchester-road, and for Messrs. Fowler, Richardson, & Pottier, for a factory, High-street. Plans have been lodged by the following:—Mr. P. Connist, theatre and lock-up shop, Marlowe-road; Messrs. F. H. Heath, Ltd., theatre, Wood-street; Mr. J. Starkey, twelve houses, Blackhorse-lane.

Westminster.—Macadam repairs are to be carried out in Ranelagh-road, at an approximate cost of 160*l.* A plan has been passed for buildings abutting on Vauxhall Bridge-road for Mr. E. Wimperis.

Wood Green.—Plans and estimates submitted by the Surveyor for paving, channelling, and making-up portion of Woodside-road and a portion of the Avenue, at estimated costs of 647*l.* and 403*l.* respectively, have been approved, and notices are to be served upon the frontagers to carry out such work. Application is to be made to the Local Government Board for sanction to borrow 115*l.* for taking up and relaying the existing surface-water sewer in the above-mentioned portion of Woodside-road, as the work could not properly be charged to the frontagers. Amended plans have been submitted by Mr. C. H. Croxford, Surveyor to the Council, for laying out the land at the rear of the Town Hall, The 500*l.* and a caretaker's lodge, etc., at 400*l.* The whole scheme, including the two foregoing buildings, is estimated to cost 5,350*l.* Plans submitted by Messrs. Humphreys, Ltd., for extensions to the church, Wesley-avenue, have been approved. Plans have been lodged by Messrs. Higgins & Thomerson, on behalf of Messrs. Edmonds, Denham, & Goyder, Ltd., for the construction of a basement at No. 10, Cheapside, High-road, Wood Green.

FOREIGN AND COLONIAL.

Hardwares and Building Trade Specialities, Toronto, Canada.

H.M. Trade Commissioner reports that a Toronto agent is desirous of getting into communication with British manufacturers of specialities for the building trades. The name and address of the agent in question may be obtained by British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73, Finsbury-lane, London, E.C. Any further communications regarding the inquiry should be addressed to H.M. Trade Commissioner for Canada, 120, Board of Trade Building, Montreal.

Builders' Materials in Russian Far East.

The following information is from the report by H.M. Consul at Vladivostok (Mr. R. M. Hodgson) on the trade of that district in 1910; which will shortly be issued:—

Wire nails are imported from Germany or Belgium. For private buildings and for general purposes a very thin nail is required; the principal users being Chinese. Government building contracts require large quantities of nails. American nails come in occasionally, and, this being so, there seems to be no good reason why British manufacturers should not compete, having a great advantage in freights (which are 2*l.* 12*s.* or thereabouts from New York, as against 1*l.* to 1*l.* 5*s.* from Europe). C.I.F. prices for Belgian and German nails are from 1*l.* 10*s.* to 1*l.* 15*s.* (50 casks per cask 10*s.* 7*d.* to 12*s.* 1*d.* cwt.). They would require to be packed in 5-lb. (Russian) [= 4*lb.* avoirdupois] packages. Locks, door, and window fittings, stoves, and builders' accessories generally are of Russian and German manufacture, and of the poor quality which this market demands. American locks, bolts, and hinges find a good sale. British locks should be saleable in small quantities on account of their high quality. Window glass is imported almost entirely from Belgium, and is of what is known as the

"china" quality. Higher grade glass is very little in demand. The consumption of window glass is largely on the increase.

Technical Institute, Spain.

The *Gaceta de Madrid* of October announces that tenders will be opened on November 30 at the offices of the "Subsecretaría, Ministerio de Instrucción Pública y Bellas Artes," Madrid, for the erection of General and Technical Institute in Castell de la Plana. The upset price is about 44,000*l.* and a deposit of about 1,500*l.* is required to qualify any tender. Under the terms of the contract Spanish material only may be used, but if it is impossible to settle the matter satisfactorily by adhering to this condition then a further call for tenders will be made which will be open to foreigners, for the supply of such material as cannot with advantage be procured in Spain; but even in this case Spanish products will, other things being equal, be accorded a preferential margin of 10 per cent. over foreign estimates.

Public Works, Straits Settlements.

The Registrar of Imports and Exports Singapore (Mr. A. Stuart) reports that the following public works are to be undertaken in 1912:—

Singapore.—Erection of new lunatic asylum, 11,660*l.*; installation at the General Hospital of staircase, lift, and steam disinfecter for clothing, 1,516*l.*; building of an outdoor dispensary, 1,680*l.*; erection and extension of schools, 12,296*l.*

Penang.—Continued provision for the railway, 11,666*l.*; rebuilding of hospital, 2,102*l.*; completion of new dam at reservoir, 6,500*l.*; erection of four new schools and a jail ward.

Malacca.—Dredging at mouth of river, 1,750*l.*; erection of revetment wall to reservoir, 2,820*l.*; erection of two new court houses.

OBITUARY.

M. E. André.

The death is announced of M. Edouard François André, in his seventy-second year. M. André was a pupil in the Natural History Museum, Paris, and entered the "Service Promenades et Plantations"; he laid out Parc des Buttes-Chaumont in Paris, St. Paul, Lancashire, and several public parks, gardens and parks in Monte Carlo, France, England, Italy, Holland, Russia, Uruguay, etc. He was editor for a long period of *La Revue Horticole*, and was the author of "L'Art des Jardins," and of "Un Mois Russe," written after his visit to St. Petersburg in 1870 as a member of the jury of the International Horticultural Exhibition.

Mr. John Brown, F.R.S.

Mr. John Brown, of Longhurst, Dumfriesshire, who died on November 1, was an Associate Member of the Institution of Electrical Engineers and Fellow of the Physical Society, London. He was the inventor of the viagraph for recording inequalities of road surfaces, and was warmly interested in the work of the Institution. He compiled many scientific books, and acted as Secretary in Belfast for the visit in 1902 of the British Association.

Mr. F. E. Houghton.

We have to announce the death, which took place on the 3rd inst., of Mr. Francis E. Houghton, who was for thirty years the Superintendent of the main drainage works at Ormeau, and did much useful work there. He was about eighty-four years of age, and was one of the oldest subscribers to the *Builder*, having taken in the paper from the first issue and we regret to record his death.

PATENTS.

APPLICATIONS PUBLISHED.*

23,144 of 1910.—Henry Malcolm Bigwood Thomas Henry Hill: Hooks or clips for sewing, spouting, piping, and other articles of brickwork, woodwork, or the like.

23,825 of 1910.—Henry Kupper: Lock fastenings.

23,977 of 1910.—Alfred Ferguson: Lead joint for connecting lead flush or flow pipe with horn of earthenware or metal basins.

24,959 of 1910.—John Halliworth: Fastenings for windows, floors, and the like.

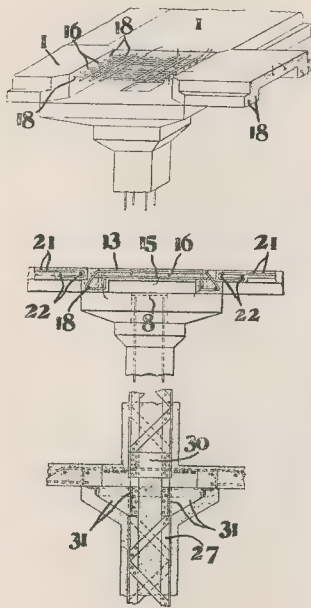
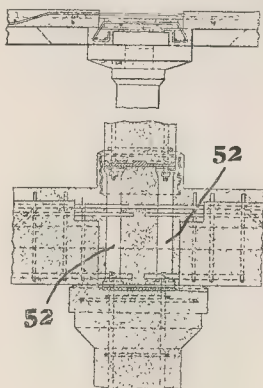
25,547 of 1910.—William Parkes: Lock latches.

25,596 of 1910.—William Alfred Hudson: Joints for cornice poles and other purposes.

* All these applications are in the stage which opposition to the grant of Patents of them can be made.

of 1910.—Thomas James and Charles Contrivance for facilitating the fastening of electric conductors to walls or other surfaces.
 of 1910. Albert George Burrell: Locking device for sash windows.
 of 1910.—Charles William Trotman: Improved fireplaces.
 of 1910.—Paul Leist Wettler: Fastenings for casements and other hinged windows.
 of 1911.—Thomas William Twyford: Improved valves.
 of 1911.—Duncan Falconer: Fastenings for window and similar sashes.
 of 1911.—Charles Martin Burrell: Improved window and sash.
 of 1911.—William Henry Tonks and Sparks: Opening and closing device for hinged windows or fanlights.
 of 1911.—Max Mannesmann: Construction of buildings.
 of 1911.—Max Mannesmann: Staircase for forced concrete.
 of 1911.—Max Mannesmann: Construction of buildings.
 of 1911.—George William Day: Better and easier attaching of the cord to the laths of venetian blinds.
 of 1911.—Edgar Frankignoul: Foundation of buildings.
 of 1911.—Egon von Seidlitz und Esdorf: Door stops.
 of 1911.—Johan Fredrick Bjurlund: Improved girders.

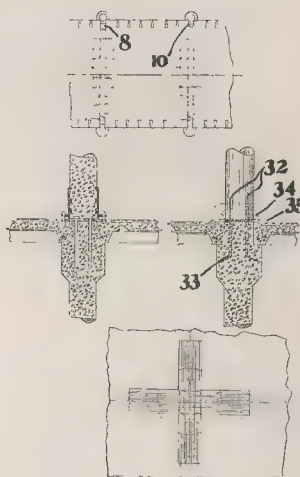
brackets 31, to reinforce the caps. The girders may extend over the columns like cantilevers, and may be single; or two girders crossing at right angles may be monolithic. The separate girders abut against a short stud on the cap,



13,787 of 1910.

13,153 of 1910.
 and having in its end a recess for engagement with a crosshead 7 on a rotatable shaft 8, mounted in a bearing 9 on the frame. Means for turning the shaft comprise a pin 10 on the shaft 8, having a pin engaging plate 11, which is moved up and down by a racked rod 12, pinion and operating
 of 1910.—John E. Conzelman: Reinforced concrete structures.
 relates to concrete buildings wherein superimposed columns are connected by a member having upper and lower plates, to which columns are bolted, the upper columns into a socket. The central member may be box form with side openings, through the floor reinforcements pass.
 of 1910. John E. Conzelman: Reinforced concrete structures.
 relates to concrete floors and like structures, wherein slabs are supported by girders which rest on columns. The slabs are placed on the column caps, so as to form a space into which project the main part reinforcing-bars of the girders, and bars surround the foot of a superimposed girder. The girders are provided with longitudinal bars 13, and transverse bars 14, the slabs with bars 21, 22. The columns may be made separately and centred on the girders; or each cap and column may be monolithic; the column skeletons consist of bars 27, and diagonal flat bars, with

and bars project from the girders, column, and cap into the enclosed space over the column. The superimposed columns are connected by semitubular members 52, and nuts screwed on the column bars.
 13,782 of 1910.—John E. Conzelman: Reinforced concrete structures.
 This relates to the construction of floor slabs by spacing the slabs slightly apart, and consists in casting concrete in the spaces 8 so as to form beams with lateral tongues which enter recesses 10 in the edges of the slabs. The beams may have shouldered or sloping sides, or the edges of the slabs may be grooved. The slabs may be placed in contact, but with recesses at the corners, forming a cruciform space into which reinforcing-bars may project, and which is filled in with concrete. Superimposed columns are connected to the slabs by short vertical rods, by a metal socket, or by rods 33, grouted in grooves 32, with adjusting wedges 35, and lugs 34.
 14,786 of 1910.—Thomas Dutton Boulton: Chimney-tops.
 This relates to chimney-tops wherein curved

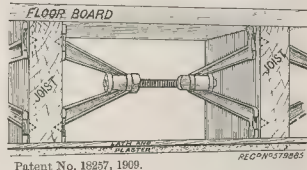


13,782 of 1910.

tubes with open ends, top and bottom, are situated around, and communicate laterally with a vertical shaft. The tubes may have vertical upper openings and inclined lower openings, which are larger than the upper ones.

TRADE CATALOGUES.

An ingenious substitute for the ordinary wooden herring-boning has been brought to our notice by the Adjustable Joist Strut Company, of 20, New Bridge-street, London, E.C. The "Xtrut," as the device is named, consists of two V-shaped iron castings connected by a bolt. By tightening one of the two nuts upon the bolt the V-pieces are forced apart, the



Patent No. 18257, 1909.

spikes cast upon their feet enter the joist, and the strutting is complete. The invention should prove a great advance upon the ordinary wooden strutting, with its numerous split toes and risk of shrinkage. At the price at which the "Xtrut" is placed upon the market, the cost of material and labour should show a considerable saving over the old method.

The Patent Rapid Scaffold Tie Company, Ltd., of 124, Victoria-street, London, S.W., send us a booklet containing particulars and price list of their "Scaffixer" scaffold-ties. Among the contracts where these ties have been exclusively used we note the new Middlesex Theatre of Varieties, the new Money Order Office, Holloway, the new Y.M.C.A., Tottenham Court-road, and the Savoy Hotel extension.

Messrs. John Russell & Co., Ltd., of 145, Queen Victoria-street, forward their latest and very handsomely-produced catalogue of grates, ranges, chimney-pieces, sanitary goods, etc. The mantel-suites illustrated cover a wide range of price and design, and include every type and form of grate. Amongst the great variety of bathroom suites we particularly notice the "Solace" floor bath, an excellent and luxurious type of bath which should prove extremely popular where circumstances admit of its adoption. Messrs. John Russell also supply cast-iron grates and railings, ornamental cast and wrought iron work for porches and verandahs, rain-water pipes and connexions, and every form of builders' ironmongery, including door and lock furniture. We have received from Messrs. C. & R. Light, Ltd., of Curtain-road, London, E.C., their latest list of their current stock of hardwoods, including whitewoods, plain and figured oak, satin walnut, and Louisiana red cypress.

TRADE CATALOGUES.—Continued on page 554.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment xvii.; Auction Sales, xxiv. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

NOVEMBER 17.—**Nottingham.**—BAPTIST CHURCH AND PREMISES.—Limited to Nottingham architects. Assessor, Mr. H. W. Wills, A.R.I.B.A. Particulars from Messrs. Rorke & Jackson, solicitors, King-street, Nottingham.

NOVEMBER 30.—**Cardiff.**—TECHNICAL INSTITUTE.—The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125l., 75l., and 50l. to Mr. E. T. Hall, F.R.I.B.A., assessor.

NOVEMBER 30.—**Hastings.**—EAST SUSSEX HOSPITAL.—The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, F.R.I.B.A., assessor.

DECEMBER 5.—**Sofia.**—NEW MUNICIPAL BUILDING.—See Competition News, page 508, November 3.

DECEMBER 29.—**Glasgow.**—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60l. and 20l. are offered. See advertisement in issue of December 24, 1910, for further particulars.

DECEMBER 30.—**Welsh Bisteddof, 1912.**—DESIGNS FOR WORKMEN'S DWELLINGS.—Prize, 50l. Particulars from Welsh Housing Association, 8, Temple-chambers, E.C.

JANUARY 1, 1912.—**Rochdale Infirmary.**—EXTENSIONS.—Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 6, 1912.—**Bolton.**—Miners' Federation Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 50l. and 25l. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernhough, 7, Fold-street, Bolton.

JANUARY 9, 1912.—**Stafford.**—PUBLIC LIBRARY.—The Stafford Corporation invite designs for a Public Library. Mr. Henry T. Hare, F.R.I.B.A., assessor. Second and third premiums of twenty and forty guineas. Particulars from Mr. W. Plant, A.M.Inst.C.E.

JANUARY 29, 1912.—**Montevideo.**—Government palace (premiums, 2,125l. and 850l.) and town improvement scheme (premiums, 1,000l., 640l., and 425l.). Conditions may be seen at the Board of Trade, 78, Broad-street, E.C.

JANUARY 31, 1912.—**Australia.**—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 508, November 3.

JULY 1, 1912.—**Dusseldorf.**—A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

NO DATE.—**Armadale.**—Public hall and offices, to cost 2,500l. Premiums of 15l. and 10l. Particulars from the Town Clerk, Armadale.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—See Competition News, page 508, November 3.

* NO DATE.—**London.**—NEW OFFICES. The Port of London Authority invite designs for new Head Offices in Trinity-square, E.C. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 11.—**Bandon, Wall.**—Erection of a wall, etc., around the well at Crossbarry. Specification from Mr. Abram Haynes, Clerk of District Council, Council-room, Workhouse.

NOVEMBER 11.—**Tralee, Convent.**—Erection of a new convent and chapel, for the Sisters of the Presentation Order. Plans and Specification at the office of the architect, Mr. Samuel F. Hayes, F.R.I.B.A., 5, South-mall, Cork. Quantities from the surveyor, Mr. James Mackey, 58, Dame-street, Dublin. Deposit of 1l.

NOVEMBER 11.—**Walsall Wood.**—SCHOOL.—For enlarging Walsall Wood Council School. Mr. G. Balfour, Director of Education, County

Education Offices, Stafford. Quantities on deposit of 1l. 1s.

NOVEMBER 13.—**Bexhill, Repairs.**—For coping, railing, and paving on the West-parade. Specification, quantities, and form of tender from Mr. George Ball, Assoc.M.Inst.C.E., Borough Surveyor, Town Hall.

NOVEMBER 13.—**Polestone.**—ALTERATIONS, ETC. Extension and alteration at the public baths, Food-road. Plans and specification seen, and forms of tender from Mr. A. E. Nichols, M.Inst.C.E., Borough Engineer, Corporation Offices.

NOVEMBER 13.—**London.**—RESTORATION.—For restoration of seventeen cottages Nos. 17 to 25 (inclusive), Block C, and Nos. 25 to 26 (inclusive), Block D, Maplin-road, Custom House, East. Specification from Mr. A. E. Nightingale, architect and surveyor, Albert-embankment, London, S.E.

NOVEMBER 14.—**Broughty Ferry, School.**—Erection of proposed new school at Broughty Ferry. Plans seen, and specifications and schedules from Mr. James H. Langlands, architect, 31, Murray-gate, Dundee.

NOVEMBER 14.—**Hull.**—ERECTOR. Erection of a sports pavilion at the Municipal Technical College. Plans, specifications, and general conditions of contract seen, and forms of tender from Mr. J. T. Riley, Secretary of Education, Education Offices, Albion-street, Hull.

NOVEMBER 14.—**London.**—ADDITIONS, ETC.—For alterations and additions to the Grammar School. Plans and specification, Mr. C. Latham, architect and surveyor, Dolphin-chambers, Shoreham-by-Sea, Sussex. Quantities on deposit of 2l. 2s.

NOVEMBER 14.—**Treforest.**—ALTERATIONS.—For alterations to the Danygraig Arms, for the Rhondda Valley Breweries Company, Ltd. Plans and specification seen, and quantities from Mr. R. P. Jarvis, F.C.I.B., The Brewery, Pontypridd. Deposit of 1l. 1s.

NOVEMBER 14.—**Troedyrhaw, Station.**—For alterations and additions to the Surgery, Troedyrhaw, to be utilised as a police-station. Plans and specification with the Borough Surveyor, Town Hall, Merthyr Tydfil.

NOVEMBER 14.—**Leamington.**—The Lancashire and Yorkshire Railway invite tenders for the roofing of platform and construction of station buildings at Aintree. Plans seen, and quantities and specification at the Engineer's Office, Hunt's Bank, Manchester.

NOVEMBER 15.—**Harrowgate.**—REMOVAL.—For the removal, in the entirety, of temporary iron building adjoining St. Wilfred's Church, Harrogate, to a position in close proximity. Plan of site and particulars from Mr. Henry James Buckland, Chancery, Duchy-road, Harrogate.

NOVEMBER 15.—**Huddersfield.**—HEADQUARTERS.—Proposed Yeomanry Headquarters, Fitzwilliam-street. Plans and quantities from Mr. W. Cooper, F.R.I.B.A., architect, 4, Kirkgate-buildings, Huddersfield.

NOVEMBER 15.—**Kinsale.**—COTTAGES.—For erection of forty-two cottages. Plans and specification seen at the Council Office, Mr. John Murphy, Clerk of the Council, Council Office, Kinsale Workhouse.

NOVEMBER 15.—**Leadgate, Villa.**—Erection of villa, Delyas-lane. Plan, specification, etc., at the office of Mr. T. H. Murray, architect and surveyor, Consett.

* NOVEMBER 16.—**London, N.**—BAKEHOUSE.—The St. Mary, Islington, Guardians invite tenders for new bakehouse at Workhouse, Cornhill-road, N. See advertisement in this issue for further particulars.

NOVEMBER 16.—**London.**—OVEN.—Erection of a two-deck steam pipe fired oven at Workhouse, Cornhill-road, Holloway, N. Specification and plan from Mr. Edmund J. Harrison, of 9, Gray's-in-square, W.C. Deposit of 2l.

NOVEMBER 16.—**Murthly.**—ALTERATIONS, ETC.—For additions and alterations to farm buildings at Little Pargel, Delvine. Plans and specifications at Estate Office, Mr. F. D. Robertson, architect, Keith.

NOVEMBER 16.—**Yeovil.**—HOUSES.—Erection of twelve houses in the parish of Montacute. Plans and specification with the architects, Messrs. Pether & Warren, Church-street, Yeovil. Deposit of 1l. 1s.

NOVEMBER 16.—**Cardiff.**—BOILER-HOUSE.—Erection of new boiler-house at Cardiff Workhouse. Plans and specifications seen, and quantities, on deposit of 2l. 2s. from architect, Mr. Edwin Seward, F.R.I.B.A., Queen's-chambers, Cardiff.

* NOVEMBER 18.—**Harlow.**—COOKERY CENTRE.—The Managers of Fawbert and Barnard School invite tenders for cookery and manual instruction centre. See advertisement in this issue for further particulars.

* NOVEMBER 20.—**Bournemouth.**—LAW COURTS.—The Bournemouth T.C. invite tenders for the erection of new Law Courts, and other works in connexion therewith. See advertisement in this issue for further particulars.

* NOVEMBER 20.—**Southend-on-Sea.**—STABLES.—The Southend-on-Sea Corporation invite tenders for stables, coachhouse, coal, and other stores at Sanatorium. See advertisement in this issue for further particulars.

NOVEMBER 23.—**Menni Bridge.**—REPAIRS, ETC.—For additions, alterations, and repairs to the Gwalchmai Council School. Plans, etc., from Mr. Jos. Bowen, F.R.I.B.A., County Architect, Menni Bridge.

* NOVEMBER 23.—**Watford.**—ADDITIONS, ETC.—The Herts C.C. Education Committee invite tenders for alterations and additions to existing Grammar School for Boys at Derby-road, Watford. See advertisement in this issue for further particulars.

* NOVEMBER 24.—**Hampton Court, Houses.**—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of houses for firemen at Hampton Court Palace. See advertisement in this issue for further particulars.

NOVEMBER 25.—**Cummersdale.**—etc.—IMPROVEMENTS, ETC.—For improvements, etc., to Cummersdale and Stoneraike Council Schools. Plans and specifications at the office of the Education Committee's Clerk of Works, 13, Earls-terrace, Carlisle.

NOVEMBER 25.—**Nelson.**—CONVENIENCES.—Erection of sanitary conveniences in Vine-street. Plans and specifications seen, and quantities and forms of tender from Mr. W. Shackleton, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Nelson.

NOVEMBER 27.—**Bradfield.**—ADDITIONS, ETC.—For sewage-disposal works, drainage, and alterations and additions to the Infirmary and Workhouse. Specifications and drawings from Mr. H. Howard Humphreys, 28, Victoria-street, Westminster. Deposit of 5l.

NOVEMBER 27.—**Waltham.**—CIVILIAN QUARTERS.—The Secretary of State for War invite tenders for erection of thirty-two civilian quarters (in flats) in two blocks at Tidworth. See advertisement in this issue for further particulars.

NOVEMBER 30.—**Radcliffe.**—ADDITIONS.—Alterations and additions to the County Police Station, Radcliffe. Plans and quantities on deposit of 2l. from Mr. Henry Little, County Architect, 16, Ribblesdale-place, Preston.

* NOVEMBER 4.—**Dundee.**—BIRMINGHAM ALTERATIONS AND ADDITIONS.—The City of Birmingham Electric Supply Committee invite tenders for alterations and additions to electric sub-station, Dale End, Birmingham. See advertisement in this issue for further particulars.

* NOVEMBER 4.—**Harborne.**—ELECTRIC STATION.—The City of Birmingham Electric Supply Committee invite tenders for an electric sub-station. See advertisement in this issue for further particulars.

DECEMBER 7.—**Edinburgh.**—EXTENSION.—The alteration and extension of the Central Telephone Exchange, Rose-street, Edinburgh. Drawings, specifications, and conditions of form of contract seen, and quantities and form of tender obtained, at H.M. Office of Works, Parliament-square, Edinburgh, on deposit of 1l. 1s.

* DECEMBER 8.—**Berkshire.**—NEW SCHOOL.—The Berkshire Education Committee invite tenders for two new schools at Chilcote, Hermitage, Berks. See advertisement in this issue for further particulars.

NO DATE.—**Accrington.**—CHURCH.—Proposed new Church of St. Andrew's, Accrington. Names to the architects, Messrs. Grimshaw & Cunniff, Birch-street, Accrington.

NO DATE.—**Beifast.**—HOUSES.—Erection of houses, Haypark-avenue. Plans, etc., from Chas. A. Aicken, architect and surveyor, Rosemary-street, Belfast.

NO DATE.—**Harrowgate.**—ADDITIONS, ETC.—Alterations and additions to the Cairn Hympatic, Harrogate. Names to the architects, Bland & Bown, North Park, Harrogate.

NO DATE.—**High Scalescough.**—BUILDING.—Erection of farm buildings. Names to the architects, P. H. Martindale, P.R.I.B.A., architect, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

BUILDING—continued.

are given at the commencement of each week in the latest date when the tender, or the closing time to submit tenders, may be

Quantities from Messrs. A. Marshall & Son, architects, 343, Union-street, E. Plans with the Secretary, Mr. J. A. Eastgate House, Inverness.
DATE. Killisshal.—RESIDENCE.—For the erection of a teacher's residence at Killisshal, Inverness. Plans and specifications at Whitechurch Boys' School, Cappagh.
DATE.—Northwood.—CHURCH.—For new Methodist church and Sunday-school, Northwood. Plans and specifications at Mr. D. M. (se, Edge-road, Matlock.
DATE.—Sandstead.—HOUSES.—Erection of detached house, and pair of semi-detached houses, and two shops, Mr. Thos. architect and surveyor, Meadowfields.
DATE.—Swansea.—HOUSES.—Erection of corner houses in the Swansea Valley. Mr. James, Estate Office, Clydach-on-Tawe.

NEERING, IRON, AND STEEL.

DECEMBER 13.—Edinburgh.—LIGHTING.—For electric light installation at Tynecliffe Supply Station. Plans and specifications at J. A. Carras, architect, 3, Queen-Edinburgh.
DECEMBER 20.—Brighton.—HEATING.—The B.C. invite tenders for installation of their patent system of heating by hot-water radiators at Royal Pavilion. See advertisement in this issue for further particulars.
DECEMBER 20.—London. E.—UNCLIMBABLE.—The Essex Education Committee tenders for the erection of about 293-ft. unclimbable wrought-iron railing with cast kerb, etc., to enclose site at corner numberland-avenue and Ingatestone-road, Park, E. See advertisement in this issue for further particulars.
DECEMBER 22.—Neath.—WATERWORKS.—For construction of a storage tank on a site upon an Farm. Drawings seen, and specifications, quantities, and form of tender from Mr. D. M. Davies, M.Inst.M.E., Offices, Neath. Deposit of 5l. 5s. on receipt of tenders.
DECEMBER 23.—Swindon.—ENGINE, ETC.—Erection of 250-hp. Diesel oil-engine, generating set, etc., with engine, etc., Specification and form of tender from Mr. A. Dimmock, M.I.E.E., Electricity Works, Swindon, on 11. 15.
DECEMBER 24.—Uxbridge.—BRIDGE.—For the construction of a bridge over the river in Iwer-lane, known as Little Boys Bridge. Plans and specifications seen, and specification from Mr. H. Harrison, Engineer and Surveyor to the Corn Exchange, Uxbridge.
DECEMBER 24.—Wigan.—RESERVOIR, ETC.—Construction of service reservoir, filter-beds, tanks, and other works at Mossy Lea, Wigan. Quantities from Messrs. George & Sons, civil engineers, King-street, Wigan. Deposit of 1l. 15.
DECEMBER 25.—Green Hammerton.—WATER.—Erection of engine-house, pumps, reservoir, and laying of cast-iron pipes in Hammerton. Plans and specifications at the office of the Engineer, Mr. J. T. Hyman, Leonard, via Leeds. Deposit of 1l.
DECEMBER 27.—Abertillery.—WATER WORKS.—Construction of the works of water supply. Drawings and specifications seen, and as on deposit of 20l. from Mr. Baldwin, M.I.E.E., Engineer for the Corporation of Abertillery, Victoria-street, Abertillery.
DECEMBER 27.—Helenburgh.—FOREHOUSE.—Construction of a forehouse of 3 acres of the water between Helenburgh Pier and Maitland, the erection of a sea-wall, providing 6 cubic yds. of filling behind wall, and

other works. Plans seen, and specification, quantities, and form of tender from Mr. J. Andrew, Burgh Engineer, Helenburgh, Scotland. Deposit of 1l. 15.
DECEMBER 28.—Droitwich.—GASHOLDER.—Erection of a spiral-guided telescopic gasholder at the Gasworks. Plans and specifications from Mr. F. Shewring, Gas Engineer, Friar-street, Droitwich, on deposit of 2l. 2s.
NO DATE.—Deanley.—HEATING.—For installation of heating apparatus and domestic hot-water supply, etc., at the new home for nurses at the Workhouse. Names, with deposit of 1l. to Mr. H. H. Clough, architect, Rochdale.

FURNITURE, PAINTING, MATERIALS, ETC.

DECEMBER 15.—Leeds. PAINTING.—For painting exterior of properties of the Development Committee. Specifications seen, and forms of tender from Mr. W. T. Lancashire, City Engineer, Municipal-buildings, Leeds.
DECEMBER 15.—Uxbridge.—PAINTING, ETC.—For painting the exterior of St. Margaret's Schools and two cottages adjoining, in the Lynch, Mr. A. Ambrose Bend, 61a, High-street, Uxbridge.
DECEMBER 18.—Cardiff.—PIPES.—For supply of steam pipes, etc., to the Ely Workhouse. Specification by Mr. S. W. Allen, M.I.M.E., from Mr. Arthur J. Harris, Clerk Union Offices, Queen's-chambers, Cardiff.
DECEMBER 21.—Banbury.—FENCING.—For supply of 65 yds. of continuous iron fencing at the Corporation sewage farm. Specification seen, and information from Mr. N. H. Dawson, C.E., Borough Surveyor, Town Hall, Banbury.
DECEMBER 21.—Grimsby.—PAINTING.—For painting and cleaning interior and exterior of Strand-street School. Specifications at the Education Office, Mr. D. Chandler, Clerk, Education Offices, Grimsby.
★ DECEMBER 21.—London. CUPBOARDS.—The London C.C. invite tenders for the supply and delivery of cupboards to sample. See advertisement in this issue for further particulars.
DECEMBER 21.—Paisgate.—PAINTING.—For painting at the Cottage Homes. Specification from Mr. Arthur Bottomley, Clerk, Bewsey-chambers, Warrington.
DECEMBER 25.—Dartford.—PAVING.—For wood paving in Kent-road. Plan and specification seen, and form of tender from the Surveyor, Council Offices, Dartford.
DECEMBER 27.—Dundee. PIPES.—For supply of 500 3-in. and 1,000 4-in. cast-iron pipes. Specification and form of tender from Mr. George Baxter, Engineer and Manager, Water Engineer's Office, 93, Commercial-street, Dundee.
NO DATE.—Oldham.—PAINTING.—For painting twenty-four shops and cottages, George IV. Hotel, storehouses on Tommyfield, iron gates at fish market, and iron railings, etc., at Greenacres market ground. Specifications from the Markets Superintendent, Victoria Markets, Oldham.

ROADS, SANITARY AND WATER WORKS.

DECEMBER 13.—Bexhill.—STONE.—For the supply of Sevenacres stone. Forms of tender from Mr. George Ball, A.M.Inst.C.E., Borough Surveyor, Town Hall.
DECEMBER 13.—Eccles.—PIPES.—For the supply of stoneware pipes. Forms of tender from the Sewage Works Manager, Mr. Willis, Peel Green-road, Eccles.
DECEMBER 13.—Orrington.—ROAD.—For making good roads. Plans seen, and specifications and forms of tender from the Surveyor, Maude House, Sidcup-hill, Sidcup. Deposit of 1l. 15.
DECEMBER 14.—Brighton.—DRAINAGE.—For reconstruction of the sanitary work at the old infirmary at the Workhouse, Elm-grove, Messrs. Denman & Matthews, Architects for the Guardians, 27, Queen's-road, Brighton. Deposit of 1l. 15.

DECEMBER 14.—Brighton.—DRAINAGE.—For repairing, renewing, and partially reconstructing and relaying the soil, ventilating, and rainwater drainage, also for altering, repairing, and renewing certain sanitary fittings, etc., at the Warren Farm schools and farm buildings, in the parish of Rottingdean. Mr. J. W. Hawker, Architect for the Guardians, 3, North-street, Brighton. Deposit of 1l. 15.
DECEMBER 14.—Chatham.—MATERIALS.—For supply of materials, Specifications, schedules, and forms of tender from the Borough Surveyor, Town Hall, Chatham.
DECEMBER 14.—Portland.—MAIN.—For the laying of a 10-in. cast-iron rising main. Plans seen, and specification from Mr. R. Stevenson Henshaw, Waterworks Engineer, Council Offices, Portland.
DECEMBER 16.—Chelmsford.—STREETS.—For street improvement works in Rectory-lane and Baddow-road. Plans and specification at the Borough Surveyor's Office, Municipal Offices, 16, London-road, Chelmsford.
DECEMBER 16.—Stratford-on-Avon.—SEWERAGE.—For laying and jointing of about 1,600 yds. of stoneware pipe sewers. Drawings and specification seen, and quantities from the engineers, Messrs. Willcox, Raikes, & Read, 63, Temple-row, Birmingham, on deposit of 3l. 3s.
DECEMBER 18.—Heswall. SEWERS.—For construction of 9-in. and 7-in. sewers. Specifications and quantities from the Surveyor, Mr. W. W. Shennan, F.I.S.E., Upton-road, Moreton.
DECEMBER 20.—Bognor.—GRANITE.—For supply of 300 tons of 14-in. Guernsey granite. Particulars from the Council's Surveyor, Mr. Oswald A. Bridges, High-street, Bognor.
DECEMBER 21.—Cheriton.—ROAD.—For leveling, metalling, paving, kerbing, channelling, and making good Dunnet-road. Deposit of 1l. 1s. for specification and quantities, from the Borough Surveyor, Public Offices, Cheriton.
DECEMBER 21.—Cheriton.—ROAD.—For leveling, metalling, paving, kerbing, channelling, and making good Quensted-road. Deposit of 1l. 1s. for specification and quantities, from the Borough Surveyor, Public Offices, Cheriton.
DECEMBER 22.—Sutton-on-Sea.—SEWERAGE.—Construction of stoneware pipe sewers, construction of ejector chambers, manholes, tanks, filters, and erection of compressor-house. Plan and specification with the engineer, Mr. H. Walker, M.I.E.E., King-street, Nottingham. Deposit of 5l. for quantities.
DECEMBER 23.—Forthcawl.—STREETS.—For private street improvement works. Plan and specification seen, and quantities and forms of tender from Mr. A. S. Lilley, A.M.Inst.M.C.E., Surveyor, Council Offices, Forthcawl. Deposit of 2l. 2s.
DECEMBER 24.—Camberley.—SEWERAGE.—For laying and jointing of about 7,700 yds. of 9-in. and 12-in. stoneware pipe sewers. Drawings and specification seen, and quantities from the engineers, Messrs. Willcox, Raikes, & Read, 63, Temple-row, Birmingham, on deposit of 3l. 3s.
DECEMBER 24.—Skipton.—SEWERAGE.—Construction of bacteria-beds, etc., at the disposal works. Plans and specifications seen, and quantities, on deposit of 2l. 2s. from Mr. A. Rodwell, the Council's Engineer, Skipton.
★ DECEMBER 27.—Berk.—SEWAGE-DISPOSAL WORKS, REPAIRING, ETC.—The Guardians of the Bradford Union invite tenders for certain sewage-disposal works, re-drainage, and alterations to the Infirmary and Workhouse. See advertisement in this issue for further particulars.
DECEMBER 28.—Dartford.—STREETS.—For private street works. Plan and specification seen, and quantities from the Surveyor, Council Office, Dartford.
DECEMBER 21.—Tancier.—ROAD.—For the construction of a road, 389.5 metres long, from the "Grand Sokko" gate to the British Legation. Deposit of 500 francs (20l.). Specification seen, and copies of the form of tender from the Commercial Intelligence Branch of the Board of Trade, 73, Easinghall-street, E.C.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
KS or WORKS (2)	Tottenham Education Com...	3l. 10s. per week each	Nov. 17

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
TRADE OF TIMBER MERCHANT, SHOREDITCH—On the Premises	H. W. Smith	Nov. 14
ING MATERIAL, CLAPHAM PARK—On the Site	Vernard & Tades	Nov. 15
REPAIRING CONTRACTORS PLANT—On the Premises	H. Holmes & Co.	Nov. 16
HOLD BUILDING AND FACTORY LAND, ILFORD—At the Mart	Messrs. Kensley	Nov. 30
SECOND-HAND MANTELPIECES, 13, HIGH HOLBORN—On the Premises	Hollingsworths	Nov. 21
REPAIRING CONTRACTORS PLANT—On the Premises	Debenham, Tewson, Richardson, & Co.	Nov. 21
HOLD BUILDING SITE, CITY OF LONDON—At the Mart	H. Holmes & Co.	Nov. 21
HOLD SHOPS, RUSTON ROAD, At the Mart	H. Holmes & Co.	Nov. 29
HOLD PROPERTY, OXFORD-STREET, W.—At the Mart	Edwin Fox, Bousfield, Burdett & Biddleley	Dec. 6
HOLD BUILDINGS—On the Premises	J. G. Platt	Dec. 6

METALS (Continued).

LEAD, &c.

LEAD, &c.			
	£	s.	d.
Pipe—Sheet, English, 4lb. and up	19	10	0
Pipe in coils	24	0	0
Soil pipe	23	0	0
Comp pipe	23	0	0
CN—Sheet	in casks of 10 cwt.		
Villa Fontegne	34	0	0
Silesian	33	15	0
Zinc, in bundles, 1s. per cwt. extra.			
OFFER			
Strong Sheet	per lb.	0	1
Thin	"	0	1
Copper nails	"	0	10
Copper wire	"	0	10
RASS—			
Strong Sheet	"	0	11
Thin	"	0	10
IN—English Ingots	"	0	10
OLDER—Plumbers'	"	0	8 ³ / ₄
Thin	"	0	10
Blowpipe	"	0	1

Per Ft., Delivered.			
oz. thirds	24d.	26 oz. fourths	34d.
" fourths	14d.	32 oz. thirds	5d.
oz. thirds	5d.	" fourths	44d.
" fourths	24d.	Fluted Sheet, 15 oz.	34d.
oz. thirds	4d.	" 21 oz.	44d.

STUCK SIZES.*	
Per Ft., Delivered.	
Hartley's	2d.
"	2 1/2d.
"	3d.
	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white.....
	Ditto, tinted.....
	34d. 5d.
Not less than three crates.	

U.S. \$

OILS, &c.		£	s.	d.
Sw Linseed Oil in pipes	per gallon	0	8	3
" " " in barrels	"	0	8	5
" " " in drums	"	0	3	7
Oil " " in barrels	"	0	3	7
" " " in drums	"	0	3	10
Argentine in barrels	"	0	8	0
" " " in drums	"	3	2	0
Guine Ground Engine	Lead, per ton	25	0	0
and Lead, Dry	"	22	10	0
Sw Linseed Oil Putty	per cwt.	0	11	0
Blackhorn Tar	per barrel	1	12	0

VARNISHES 49

VARNISHES, &c.		Per gallon.
ne Pale Oak Varnish		4 8 0
Le Copal Oak		0 8 0
perine Pale Elastic Oak		0 10 6
ne Extra Hard-drying Oil		0 12 6
ne Extra Hard-drying Oil, for		0 10 0
Churches		
ne Elastic Carriage		0 14 6
perine Pale Elastic Carriage		0 12 0
ne Pale Mahogany		0 16 0
nest Pale Durable Copal		0 10 0
ne Pale French Oil		1 1 0
gehell Flatting Varnish		1 8 0
ne Pale Mahogany		0 12 0
ne Pale Paper		0 12 0
ne Japan Gold Size		0 10 6
ne Black Japan		0 16 0
ne Pale Mahogany		0 8 0
unswick Black		0 8 0
erin Black		0 16 0
etting		0 10 9

TO CORRESPONDENTS

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other docu-

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

BRISTOL. For painting, etc., wards at the Eastville workshops for the Guardians of the Poor of the City and County of Bristol.					
G. T. Kilford	.. 275	0	A. E. Proce	.. 653	0
E. Walters & Son	69	0	W. J. Bray	.. 54	0
Edwards Bros.	67	3	C. Broadbent	.. 49	10
Rees, Sanders, & Sons	64	15 11	W. Ash	.. 18	12
J. W. Cornock	64	15	Landown	&	
F. Bevan	58	15	Dibley	.. 47	0
W. J. & Sons	56	0	F. J. Hussey	.. 43	0
F. A. R. Wood- ward	55	17	F. Holtham*	.. 34	18

CRESHUNT.—For alterations and additions to two cottages in Brookfield-lane, for the Metropolitan Water Board:—

J. A. Hunt	£315 0	R. Archer	£279 0
H. Almond	310 0	Bate Bros.	272 0
Jennings & Grenfell	298 10		

EPSOM. -For constructing a light railway on the Horton Estate, for the London County Council :—

Poster & Picksee, Ltd.	£24,821	0	0
Holme & King, Ltd.	22,408	14	0
T. W. Pedrette	21,805	16	9
J. Mowlem & Co., Ltd.	20,689	0	0
Peerless Dennis & Co., Ltd.	19,967	0	0
R. C. Brebner	19,308	14	0
R. Finnegan	19,051	0	5
Perry & Co. Bow], Ltd.	18,698	0	0
C. J. Wills & Sons	18,443	15	6
C. Ford	18,175	0	7

A. Railway and General Engineering	
A. N. Coles	18,174 7 3
T. P. Nott	18,174 7 3
Thames & Co.	17,992 10 3
L. J. Davies & Co.	17,916 5 3
W. G. W. & Co.	17,925 12 10
C. Wall, Ltd.	17,412 18 9
W. Mithread & Co.	17,353 8 9
W. H. Hargreave & Co.	17,336 17 7
Kirk & Randall	17,325 12 10
H. V. Smith & Co. Ltd.	17,234 17 5
W. G. W. & Co. Ltd.	16,765 13 4
J. Wilson & Sons	16,700 11 11
W. Griffiths & Co. Ltd.	16,335 0 7
J. Cochrane & Sons, Ltd.	16,282 2 8
Diok, Kerr, & Co., Ltd.	16,194 5 11
G. Percy Teutonium.	16,021 12 6
J. H. Cummins	15,841 8 8
St. Alban's	15,841 8 8
Pathie Bros. Ltd.	14,944 0 0
H. M. Day & Co.	14,207 3 1
B. Recommended for purchase	

[The Chief Engineer's estimate, comparable with the tenders, is £16,543.]

HAMPTON.—For the various repairs to the telephones at Hampton for the Metropolitan Water Board.

Seimen's Bros. & Co., Ltd	£132	6
India Rubber, Gutta Percha, and Tele- graph Works Co., Ltd.	119	8
W. T. Henley's Telegraph Works Co., Ltd.	106	0
W. T. Glover & Co., Ltd.	81	0
British Insulated and Helsby Cable Co., Ltd.	75	17

HOUGHALL.—For construction of brick and concrete foundations for a new ward block and mortuary, etc., and alterations to the existing hospital Mr. G. Gregson, surveyor, 38, Sadler-street, Durham:

Beevers & Clark	£359 8	A. Taylor	£419 18
T. Contes, jun.	484 14	C. W. Gibson,	
Bradley & Co.	484 8	Durham*	399 5

LEEDS. For construction of a chimney and flue at the destructor works. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.
J. T. Wright, 100, Skinner-lane. . . £1,724 10 2

LONDON.—For enlarging the Buckingham-terrace			
School, Kensington, for the London County Council.			
—Rice & Son	£5,671 0 0	Gathercole	
W. King & Son	5,530 0 0	Bros.	£5,373 7 1
W. Johnson & Co., Ltd.	5,482 0 0	E. & T. Thorne	5,236 0 0
Loile & Co.	5,307 4 10	H. & J. Holloway	5,214 0 0
G. Godson & Sons	5,293 0 0	M. A. Roome v. Co.	5,202 0 0
		Rowley Bros.	5,168 0 0

The Architect's estimate, comparable with the tenders,
is £5,283

LONDON.—For proposed pulling down and rebuilding of No. 541, Holloway-road as warehouse and residence, for Mr. W. Woolley, wholesale merchant, according to the plans, specification, and supervision of Mr. George Carter, architect, 513, Holloway-road, N. First portion. Quantities supplied:—

Mattock & Parsons £1,991	Patman & Fother-
G. Parker & Sons ... 1,969	ingham ... £1,873
Courtney & Fairburn 1,963	Chessums ... 1,912
J. E. Price 1,947	McCormick & Sons 1,716
C. P. Roberts & Co. 1,928	A. Monk, Lower
	Edmonton* ... 1,720

LONDON.—For enlarging the Camwell School of Arts and Crafts, for the London County Council.—

		Reductions.		
		External frames in the paired and sills in Dantzic oak.	Dantzic or Odessa oak in place of English oak.	Square bar wrought-iron balustrade.
	£	£ s. d.	£ s. d.	£ s. d.
Leslie & Co., Ltd.	20,599	214 0 8	47 0 0	99 5 8
C. Wall, Ltd.	20,528	289 0 0	40 0 0	133 0 0
Holloway Bros. (London), Ltd.	19,281	335 0 0	—	167 0 0
J. Smith & Sons, Ltd.	19,150	450 0 0	—	120 0 0
Higgs & Hill, Ltd.	18,070	—	—	—
W. Lawrence & Son	18,494	275 0 0	—	57 0 0
Unassigned	18,170	—	—	—
J. & C. Bowyer, Ltd.	17,972	52 15 11	69 14 6	44 12 0
E. Lawrence & Sons, Ltd.	17,925	270 0 0	37 0 0	141 0 0
Kirk & Randall	17,915	28 0 0	74 0 0	89 0 0

For the supply, etc., of certain plant required for the new sub-station to be erected at Vauxhall, for the London County Council:—

(i.) One 20-ton Overhead Travelling Hand-Crane.	
T. Smith & Sons	£555 0 0
S. H. Heywood & Co., Ltd.	389 0 0
London Hoist & Machinery Co.	318 0 0
Currie & Ritchie, Ltd.	305 0 0
J. Spencer & Co.	280 0 0
Holt & Willets	265 0 0
H. Morris & Baxter, Ltd.	260 0 0
J. Smith (Keighley), Ltd.	259 10 0

(ii.) High Tension Electric Cables.

Foots & Milne, Ltd.	£12,143 4 10
W. T. Glover & Co., Ltd.	11,163 13 9
Johnson & Phillips, Ltd.	10,554 3 6
Western Electric Co., Ltd.	10,158 1 1
British Insulated & Healy Cables, Co., Ltd.	10,070 3 3
Callender's Cable & Construction Co., Ltd.	10,068 6 5
W. T. Henley's Telegraph Works Co., Ltd.	9,897 17 3
Siemens Bros. & Co., Ltd.	9,761 19 0

(iii.) Low-Tension Electric Cables.

W. T. Glover & Co., Ltd.	£16,802 16 0
Siemens Bros. & Co., Ltd.	16,202 18 0
British Insulated & Healy Cables, Ltd.	15,800 11 10
Foots & Milne, Ltd.	15,610 17 10
Johnson & Phillips, Ltd.	15,522 8 10
W. T. Henley's Telegraph Works Co., Ltd.	15,499 12 3
Callender's Cable & Construction Co., Ltd.	15,401 10 9
Western Electric Co., Ltd.	15,161 19 4

(iv.) Rotary Converters.

Bruce, Peebles, & Co., Ltd. (not to specification)	£14,646 0 0
Electric Construction Co., Ltd.	8,367 0 0
British Thomson-Houston Co., Ltd.	8,240 0 0
Do. Alternative tenders—not to specification	6,280 0 0
	6,161 0 0
	5,643 0 0
British Westinghouse Electric and Manufacturing Co., Ltd.	6,185 0 0
Do. Alternative tender—not to specification	6,002 0 0
General Electric Co., Ltd.	6,149 0 0
Diak, Kerr, & Co., Ltd.	6,089 10 0

The estimates of the Chief Officer of Tramways, comparable with the tenders, are £200, £9,800, £15,500, and £2,300 for the overhead crane, high-tension cables, low-tension cables, and rotary converters respectively.

LONDON.—For proposed motor garages and waiting and dressing and manufacturing depots at Halliday street, W.C., for the Motor Supplies Company, according to the drawings, specification, and supervision of Mr. George Carter, architect, 315, Holloway road N. Sub-structure and foundations only. Quantities supplied:

Smith & Sons	£2,594	King & Sons, Ltd.	2,463
Woodward & Co.	2,547	Grimvale & Yardley	2,324
Lockwood & Saunders, Ltd.	2,483		

[Architect's estimate, £2,450.]

LONDON. For reinstatement of buildings at Crook's ground, Chelsea, for the London County Council.

F. & H. P. Higgs	£536	J. Smith & Sons, Ltd.	£444
Triggs & Co.	511	H. Groves, Stockwell	
Lapthorne & Co., Ltd.	497	street, Greenwich	369

PLYE.—For erection of four cottages at North Cornelly, Pyle, nr. Bridgend. For Messrs. Thomas, Rose Cottage, Pyle. Mr. A. T. James, architect, Risley House, Pyle, near Bridgend:—

J. Jackson	£280	J. Evans, Grange-st., Port Talbot	£250
J. Magg & Co.	273	L. Williams & Sons	245

SEWARDSTONE.—For various repairs to cottages in Albion-terrace, for the Metropolitan Water Board:—

A. Porter	£1,126 0	Wall, Ltd.	£874 0
Jennings & Grenfell	970 0	Bate Bros.	788 0
H. Almond	840 0	Clemens Bros.	750 10

STOCKTON-ON-TEES.—For pulling down school, cottage, and houses in Regent-street, Nelson-terrace, and Ropery-street, for the Education Committee. Mr. E. G. Fletcher, Architect, Prince Regent-street, Stockton-on-Tees:—

Laws Bros.	£154 10	Co-operative Society	£60 10
Langcaster Bros.	148 0	J. Fletcher, Norton-on-Tees	57 0
J. W. Bearpark	86 10		
G. E. Grey	69 10		

J. J. ETRIDGE, Jr.

SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

Ham Hill Stone. Doulting Stone. Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son,
The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Laying Asphalt Company (Mr. H. Glenn), Office, 4, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and mill rooms, granaries, gun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

WHAT!

USE WHITE

LIME-SAND BRICKS

(Of the Finest Quality)

FOR CONCRETE WORK?

WHY?

- B The Bricks are uniform.
- C Less mortar is required.
- D Closer joints can be made.
- E 25 per cent. more bricks can be laid per day.
- F Where light is required they need no whitewashing.
- G Saving of material and labour.
- H USED BY THE MILLION IN GERMANY, AMERICA, AND IN THIS COUNTRY.

These Bricks are made by the
GODSTONE BRICK & TILE CO. LTD.
Oxted Road, Godstone, Surrey,
and can be delivered in quantities of not less than 500
within 10 miles of the Company's Works at 25/- per 1,000, and
Send for Free Samples

SPRAGUE & CO., Ltd.,

PHOTOLITHOGRAPHERS,

4 & 5, East Harding-street,

Fetter-lane, E.C.

OGILVIE & CO.,

Telephone: DALSTON
Many years connected
with the firm of W.
LASCHLLES & Co., Ltd.
of Burnhill Row.

Amhurst Works, DALSTON LANE, N.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS.

ESTIMATES FREE

ASPHALTE

For Horizontal & Vertical Damp Courses

For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied

THE

French Asphalte Co.

Whose name and address should be inserted in specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL

CANNON STREET, E.C.

EWART'S

Cures in 19 cases out of 20.

"EMPEROR"

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,

346-350, Euston Road, London, N.W.

Established 1834.

Telephone:
2570 North.

SMOKE-CURE

VOL. CL—No. 3589

NOVEMBER 17, 1911.

PAGE

OF FRENCH ARCHITECTS	537
A RENAISSANCE IRONWORK (WITH ILLUSTRATIONS)	539
E.A. AND THE AUSTRALIAN CAPITAL	561
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	562
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	563
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	564
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	565
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	566
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	567
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	568
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	569
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	570
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	571
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	572
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	573
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	574
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	575
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	576
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	577
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	578
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	579
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	580
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	581
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	582
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	583
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	584
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	585
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	586
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	587
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	588
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	589
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	590
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	591
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	592
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	593
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	594
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	595
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	596
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	597
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	598
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	599
THE ARCHITECTURAL ASSOCIATION (WITH PORTRAITS OF MEMBERS)	600

PAGE

THE ROYAL STREET POLYTECHNIC (WITH ILLUSTRATIONS)	573
FIREPROOFING IN AMERICA	576
THE SITTER VIAUDCT, SWITZERLAND (WITH ILLUSTRATIONS)	577
ELECTROLYSIS IN REINFORCED CONCRETE	578
THE BUILDING TRADE: -	
THE CLERK OF WORKS	579
THE APPROVAL OF PLANS	580
LONDON MASTER BUILDERS' ASSOCIATION	580
ACCURACY IN BUILDING	581
GENERAL BUILDING NEWS	580
APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909	580
PROPOSED NEW BUILDINGS IN THE PROVINCES	581

PAGE

THE SURVEYORS' INSTITUTION	582
WESTMINSTER CITY COUNCIL	585
LEGAL COLUMN	585
LAW REPORTS	585
OBITUARY	586
PATENTS	586
SOME RECENT SALES	586
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	587
PRICES CURRENT	589
TENDERS	590

THE MITCHELL LIBRARY, GLASGOW: -
 THE PRINCIPAL STAIRCASE. }
 THE FIRST FLOOR CORRIDOR. } MR WM. B. WHITIR.
 THE MAGAZINE-ROOM. } F.R.I.B.A., ARCHITECT.
 THE READING HALL. }
 THE CASTLE, NOTTINGHAM. MEASURED DRAWING BY
 MR. JOHN WOOLLATT. A.R.I.B.A.



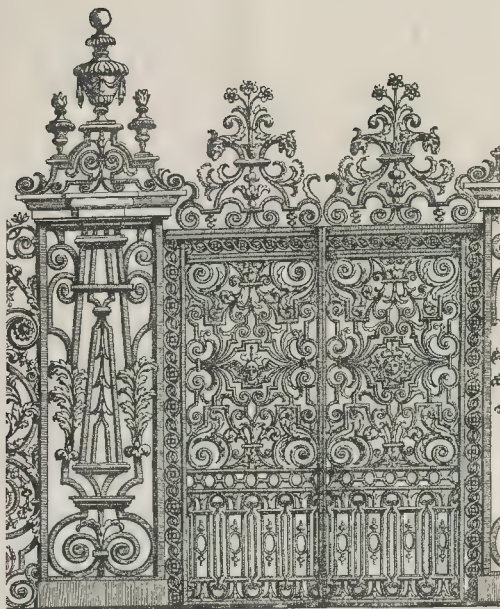
The Forecourt Gates to Drayton House. Attributed to Jean Tijou.

From Mr. J. Starkie Gardner's "English Ironwork." (Batsford.) (See page 559.)

It would appear from a paper which M. Henri Blanchard read before a recent Congress of French architects, and from certain resolutions which he submitted, that the system which prevails in France for the re-education of architects—a system which is established on pretty much the same basis as that adopted in this country—does not give general satisfaction. The average fee of 5 per cent. is considered an inadequate basis of pay for large public

works, but it is not considered an adequate basis where small and private work is concerned—the kind of work which engages the attention of a large proportion of architects. Here, indeed, the 5 per cent. arrangement is considered far from being a sufficient compensation for the art, skill, and time employed on the work. M. Blanchard asks, therefore, that certain conditions should be formulated by the chief architectural societies in France—the Société Centrale, the

Société des Architectes diplômés par le Gouvernement, and the Association Provinciale—by which the rate of pay should be regulated on a more equitable basis, so as not only to include the actual time engaged on the work calculated on the practice of a liberal profession, such as that of law or medicine, but also to take into consideration the special qualifications of the architect and the particular type of work for which his services are sought.



Pillar of Ornament and Gates. Designed by Tijou before 1690 for the Screen of the Fountain Garden at Hampton Court.

From Mr. J. Starkie Gardner's "English Ironwork." (Batsford.)

M. Blanchard considers that it is within the scope of practical politics to formulate an average rate of fees which would assist an architect, in such circumstances, to arrive at some arrangement with his client more generally satisfactory than is at present the case. It is interesting to note that the rates fixed by the Conseil Municipal of Paris are 6 per cent. for the first 200,000 fr., decreasing by $\frac{1}{2}$ per cent. for every 200,000 fr. until 1,000,000 fr. are reached, when the fee is fixed at 4 per cent. for any subsequent increase of the total cost of the work. It remains, however, to be added that where a scheme in its execution presents special difficulties, either from an artistic point of view or from some other cause, the amount of the fee is subject to proportionate augmentation to be assessed by the Conseil Municipal. In the contrary case, in which the responsibility and work of the architect is less, as, for instance, in the case of enclosing walls, paving, etc., his remuneration is subject to a diminution, the scale of which is again decided by the same authority.

The discussion on M. Blanchard's paper indicated that there is a considerable difference of opinion among French architects as to the advisability of attempting to change the present conditions under which architectural remuneration is effected. Although 5 per cent. is the honorarium which generally prevails over the whole country, it does not appear to be recognised by law except in the case of public work. Some of the provincial societies would seem to have formulated a scale of charges which is adopted by their members and which works satisfactorily. French architects,

the discussion suggested, have to encounter in the law courts a certain bias generally unfavourable to them on the part of the judges. M. Blanchard argued, and many of his *confrères* supported his view, that it is necessary to establish a minimum protective basis of charges, chiefly on account of the younger men, who have often to work for extremely unremunerative fees. On the other hand, it was generally agreed that the architect who has "arrived" is in pretty much the same position as the portrait painter of eminence who can approximately fix his own charges before he

accepts a commission. But that is the case all the world over. Men in this position are *hors concours*. But the practice of architecture involving as it does professional elements to which the practice of painters and other artists are strangers, its exponents can scarcely look outside the conditions which govern their own profession for guidance and precedents. In any case, the position of the man who has "arrived" should not make him indifferent to the kind of sweat to which his younger or less fortunate brethren may, through the force of circumstances, be subjected, and for which the law, according to existing decisions, offers no remedy. Whether indeed the architect be young or in the prime of life, whether he has attained eminence or the position of respectable mediocrity, the law fastens upon him so many responsibilities that his scale of charges should be in proportion to his burden of risk and liability. The matter is summed up in the observations which were made at the earlier Congress, in which comparison was made between the practice of architecture and that of other arts and professions. The painter and the sculptor, it was pointed out, obtain the value of their works; the physician and the counsel charge fees in accordance with their status and merits. The counsellor may advise his client badly, the cause may be lost, yet his fees are paid. A mistaken diagnosis on the part of a physician may involve the death of a patient, but the error is buried with him and the doctor receives his cheque. The architect, on the other hand, always receives 5 per cent.; but if he makes a mistake or is deceived justice may be invoked against him; he may suffer in pocket, in reputation, and his future prospects be seriously affected. But it is not so much with these issues of responsibility and risk that M. Blanchard was concerned; it is rather with the financial issues of the artistic skill involved in the performance of his work in which he seeks to establish for the architect equitable compensation.

It may be observed in connexion with



Overthrow to Centre of Gates, Oakley Park, Cirencester.

From Mr. J. Starkie Gardner's "English Ironwork." (Batsford.)

question of the fees of French architects that M. Blanchard seeks the sort of the three principal societies of architects who have their headquarters in Paris. There are, in fact, many architectural societies in France; and there is the same time no country in which the work of an architect is more adequately prized and appreciated. The various societies of these societies act and counteract each other for the general good of architecture as a whole; and in working for a high standard of practice the position of the architect gains greater distinction and influence. It is perhaps unnecessary to say that the membership of any of these societies is a finite guarantee of artistic or professional qualification. They are not unions. If men work together in corporate capacity for the advantage of art or craft, and incidentally for their own material advantage, it is natural that they should insist that a high standard of efficiency, in the particular art or craft, should be the *raison d'être* of individual membership. If this is not held in view the wholesome influence of the corporate body cannot be maintained, and its degrees or diplomas only confer a meretricious distinction. It is necessary, however, to say that the constitution and conditions of membership of the French societies vary



Balustrade of the Early XVIIIth Century. From a Mansion in Warwickshire. Probably of local craftsmanship.

From Mr. J. Starkie Gardner's "English Ironwork." (Batsford.)

considerably from British custom. We hope later to explain the various distinctions in the constitution of these institutions.

ENGLISH RENAISSANCE IRONWORK.*

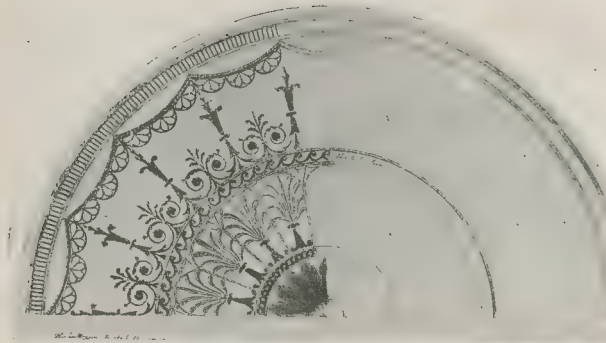
TO the student of the decorative treatment of ironwork in the XVIIth and XVIIIth centuries Mr. Starkie Gardner's book will make a strong appeal. While we have had works illustrating examples of this period, no one has hitherto attempted to deal with the subject in an historical form, which, while giving a comprehensive review of the craft during the period selected, is at the same time sufficiently condensed to come, with its numerous illustrations, within the convenient compass of an average textbook. This aim is probably responsible for a slight disproportion in the space allotted to the various examples of the employment of ironwork, some two-thirds of the book being devoted to gates, while railings, balustrades, balconies, grilles, lamps, signs, and vanes are compressed into the remainder, with the result that staircases in particular hardly receive the attention they merit. It is true that Mr. Gardner in his Preface states that preference has been given to exterior examples, as more liable to damage and decay, but it somewhat detracts from the value of a work planned on the lines of this one to exclude typical and characteristic work because it happens to have a roof over it.

Having relieved our mind of the most important criticism to which this book seems open, we must in fairness add that had it been entitled and dealt with gates alone it would still have been a valuable contribution on its subject. We rather think that Mr. Gardner felt, and rightly felt, that in the gate and its adjuncts the smith found and solved all the most difficult problems of his art—certainly no other branch of his work calls for so keen a sense of proportion and composition. The magnificent series of great



No. 6, Forest-lane, Stratford. Drawn by Mr. G. G. Poston.
From Mr. J. Starkie Gardner's "English Ironwork." (Batsford.)

* "English Ironwork of the XVIIth and XVIIIth Centuries: An Historical and Analytical Account of the Development of Exterior Smithcraft." By J. Starkie Gardner. London: B. T. Batsford, High Holborn, W.C. 2f. 2s. net.



Fanlight for Drapers' Hall. From the Original Design by Robert Adam.

From Mr. J. Starkie Gardner's "English Ironwork." (Bat-ford.)

gates illustrated and described in this work is alone sufficient excuse for its production.

After a brief introductory chapter on mediæval methods, followed by one dealing with the art as practised in the Jacobean period, the author brings us to the sudden and revolutionary developments due to the skilful craftsmanship of Jean Tijou, who, coming over with the Prince and Princess of Orange, was at the time of his advent already a master in his art far more accomplished and sophisticated than any English smith of this period.

Whether Tijou's influence was in every way for the best may perhaps be doubted. Mr. Gardner takes the view that Sir Christopher Wren, for one, considered his work florid and overloaded; but his knowledge of Renaissance ornament and his technical skill placed him head and shoulders above his competitors; and resulted in his becoming the dominating influence in English ironwork for the next half-century. His work has been criticised as less characteristic of metal than that of earlier date; and certainly much of his foliage is somewhat over-modelled and too independent of structure. Mr. Gardner attributes these defects to the fact that Tijou himself appears to have been an embosser, and therefore inclined to smother the actual smithing with his acanthus rosettes, masks, draperies, etc. The influence of Daniel Marot on his designs is also noted.

To what extent the great output of wrought-ironwork in the earlier half of the XVIIIth century was due to the men who had assisted Tijou is not quite clear, but it is obvious that it was largely influenced by his methods, more particularly in the case of Robert Bakewell and the brothers Roberts. Mr. Gardner illustrates many beautiful examples of forecourt screens and gates dating from this period, in which the verticality of the simpler portions is admirably contrasted with and set off by the more elaborate scroll work in the overthrows and in panels. Unfortunately, while in the country the taste for the landscape garden resulted in the removal of many of these screens, commercial considerations have proved hardly less destructive in our cities, and those remaining have, in many cases, been shifted to form park entrances and divorced from

the buildings they were originally designed to enhance.

We now come to the time when the architect begins to exercise a controlling influence over the crafts. Gibbs's "Book of Architecture," published in 1728, is given as the first work of an architect to include designs for wrought-ironwork. Three of his examples of forecourt screens are reproduced by Mr. Gardner, who points out that they are largely based on the work at Versailles; in his view they mark the doom of smithcraft as a fine art—a view that it is not easy to accept, as they are obviously based on lines appropriate to the work of the smith, and do not appear to preclude his practice of his art in any way except in respect of its due subordination to a general architectural scheme.

Our author uses this text as the basis of an appeal that the architect should give more freedom to the craftsman in the design of his special work, claiming that whenever and wherever art reached its noblest expression there were master craftsmen and *maîtres ornementistes* held

in honour and esteem; but that in the days for a craftsman to become known may too often debar him from architectural work, on which, as things are, he must mainly depend. We confess that we cannot believe that such an assertion is justified by facts, as we have always found that the architect is eager to welcome the imaginative and intelligent craftsman, provided he is free from vanity that prompts him to insist on exaltation of his own craftsmanship in a manner that would detract from the harmony of the whole design of which it must necessarily form a part.

Wrought-ironwork is not so confined in its technique as to be beyond the range of the architect's comprehension, and Mr. Gardner realises this; the tribute he pays to the work of Robert Adam in this branch of design.

In the space allotted to other branches of smith's work some excellent illustrations of stair ramps and fanlights are given, including a number of the latter reproduced from the designs published by Joseph Bottomley, in the style of Adam brothers, many of which may be seen in our London streets. The illustrations of vanes and weathercocks hardly up to the standard of the rest of the book, but, taking the work as a whole, it is undoubtedly a sound appreciation of the position taken by ironwork among the arts of the Renaissance in England.

THE R.I.B.A. AND THE AUSTRALIAN CAPITAL

HOWEVER keenly the necessity will be regretted, it will generally be recognised that, under the circumstances, the Institute had no option but to request its members not to take part in the competition for the new Australian Capital. It is possible that the expression of its disapproval at this late stage in the proceedings will inflict some hardship on individual members who may have started designs in the confident expectation that the conditions would ultimately be brought into line with the Institute's requirements. In this expectation the Institute may have shared, and may have thought that, negotiations being in progress, it was more courteous to refrain from taking definite action while there was a hope of bringing them to a successful conclusion.

Where great distances are involved a certain amount of delay may be unavoidable. It is understood, moreover, that the Institute, fully recognising the necessity for prompt action, made immediate representations to the High Commissioner, who communicated with the Government direct by cable. This necessity, however, not being so apparent to the Australian Government, their request took its leisurely course through the usual channels of official correspondence. In consequence, a position is created that is most unsatisfactory and altogether unbusinesslike. In order to avoid similar trouble in the future the Institute might perhaps think it worth while to consider the advisability of immediately and as a matter of routine, announcing its disapproval of every unsatisfactory



Model of Sir Cloudesley Shovel's Frigate on Rochester Town Hall: about 1708.

From Mr. J. Starkie Gardner's "English Ironwork." (Bat-ford.)

petition the moment it appears and negotiations are entered into with promoters. This disapproval could be withdrawn as soon as the conditions are brought into conformity with its relations. Competitors would then withdraw from the very first moment exactly where they stood, and hardships might be avoided which are sometimes apt to develop into grievances.

It should not be forgotten, however, that it is not always a hardship to be exempted from taking part in a badly-arranged competition. But, however such hardships may be, it is impossible altogether to ignore the fact that, under the present arrangement, every member of the Institute is in a position to acquaint himself with its relations, and should be able in the majority of cases to judge for himself whether a set of conditions is in conformity with them.

It is obvious that they are not, any member who starts before the Institute has given its sanction appears to do so in his own risk.

Not everyone perhaps can altogether understand what it must mean to the young, progressive, and up-to-date architect, with reputations to make, whom the Australian Minister expects to compete, deliberately stand aside from what may appear the chance of a lifetime; they are just the very men who will lose—if the Australian Minister does—that the sort of reputation an honorable man desires is not to be won by disloyalty to the best traditions of his profession.

After all, however hard it may be on individual members of the profession, it is still on the people of Australia. Perhaps it is only as it should be, the responsibility for this lamentable loss is not on the architects, but on the Australian Government.

NOTES.

Alfred Stevens. THE memorial exhibition of the models and drawings of Alfred Stevens just opened at the Tate Gallery will be admired by all architects, for no English sculptor (without extending the comparison to other countries) has passed at the same time such a variety of individual expression combined with the constructive and decorative creation of his art. Alfred Stevens had some lack of appreciation in his time, and his fame is, at it were, still being made. His work is largely known, even to the average art critic in England; and, abroad, the Belgian artist of the same name, an excellent one, but certainly not a man of equal gifts, possesses a considerable reputation. The Memorial Committee who are responsible for the initiation in the case of the Tate Gallery Exhibition, and for the gallery which henceforward will be specially reserved for his work, after the manner of the Turner and Watts exhibitions, owes its origin largely to the efforts and appreciation of Professor Legros, while the bust of Stevens is to be seen at the entrance to the gallery by Professor Lanteri—men of French nationality who have so largely identified with the

progress of the modern art movement in England. In this connexion it is interesting to recall the astonishment which Rodin, a sculptor of a very different method, expressed a few years ago on first seeing the work of Alfred Stevens, and his surprise that British sculpture possessed a man of such qualities. Alfred Stevens was an artist of considerable versatility; his drawings and portraits, while assisting one in the understanding of his main tendency, are none the less interesting on their own account. And we are glad to think that the British Museum, the Victoria and Albert Museum, and the Tate Gallery now share in the possession of a practically complete representative collection of his works.

Part of London Offices for the preliminary competition.

WE notice in the announcement of the arrangements for the preliminary competition for offices for the Port of London Authority that the promoters intend to reserve to themselves the right to invite six architects, other than the competitors in the preliminary competition, to take part in the final one. If this is intended to be simply and solely a right held in reserve to be exercised only in case of urgent necessity, no great objection need be taken to it. For a variety of reasons it may sometimes happen that designers of ability stand out, and that a preliminary competition produces no design worth building. In such a case no one would grudge the promoters the desire to obtain one that is, and we assume that it is simply for this purpose that this right is reserved. As in this particular case there is no reason to anticipate any difficulty, the promoters should have no occasion to exercise it. If, however, there is the slightest danger that anyone should make the mistake of taking this as a hint that if he happens to be too busy or too indifferent to enter the first competition at his own expense he has only to wait for an invitation to take part in the second at the promoters' expense, it might be only kind to deceive him at once. Recent experience in a somewhat similar form of procedure is not altogether encouraging. The exercise of this right was not found necessary in the Wesleyan Hall Competition, and in that for the London County Council building nothing was more noticeable or more freely commented upon at the time than the fact that so few of those who were specially invited justified their invitation, and that those who did justify it were the very ones who might be expected to compete whether they were invited or not. This latter significant fact points to the conclusion that, unless they are sure of an invitation to the final competition, all the most competent men will enter the preliminary one. A chance to distinguish themselves, a fair field and no favour is what really attracts them. Given these essentials, the Port of London Authority need have no fear that the best men will not compete in the first competition. There is no harm, however, in holding in reserve the right to invite others in case of accidents, provided it is distinctly understood that there is no deliberate intention of using it without adequate excuse.

Preservation of Churches from Fire.

THE Council of the Royal Institute of British Architects has done wisely in drawing the attention of those responsible for the care of our churches to the risks they run from fire. Periodical examination of heating apparatus and electric installations is advised, and the necessity for competent supervision of new installations is emphasised in view of the fact that these are frequently the cause of the deplorable destruction of works which it is impossible to replace. Further suggestions refer to insurance policies, and it is pointed out that stained glass, organ, fittings, and furniture are frequently undervalued, and the amount of the insurance has proved entirely inadequate for their proper reinstatement.

Balliol College Chapel.

THE term vandalism as we understand it does not merely apply to the act of doing away with, or improving out of artistic existence by indiscreet restoration, a building sanctified by its age; it applies with equal force to any unwarrantable interference with comparatively modern structures which possess sufficient quality to express in some way or other the spirit of their time. There are few more representative buildings of the latter type than Balliol College Chapel, and none perhaps which expresses more adequately a momentous intellectual and religious movement, such as the Tractarian movement at Oxford. It is, further, the work of one of the most individual architects of his time. To do away with such a building without more reasonable cause than at present appears would be an act of vandalism of a very wanton character. The building is in good repair, increased accommodation is not, we gather, demanded. So there is, *prima facie*, no reasonable justification even for the suggestion of such a change. But—and we would wish to emphasise this—a wealthy patron appears who wishes to see erected on its site a replica of the still older building, now, of course, gone for ever, designed from an old print. That is to say, Butterfield's Chapel, which is not only a work which evokes as architecture the admiration of Mr. Norman Shaw and many others entitled to express an opinion on architectural merit, but which also, according to others, gives architectural expression to a movement of the widest interest, has to be demolished at the will of a person possessed with sufficient wealth to gratify it. It will be seen that the principles behind the issues at stake in the present instance are considerable, and if we were to apply them over a larger area (as we might) evil and destructive. No building of more or less national importance would be safe.

"Real Old-Fashioned." from "The Office Window" of Tuesday's Daily Chronicle.

and we hope it may catch the eye of any or every future Mr. "Trust Smelter," and that the point may not be lost by anyone who may chance to read what our contemporary says:—

"Mr. Smelter Trust Stokes (the name is congealed under stress of space) is building a house in Connecticut, and it is going to be real old-fashioned. Most of it was built from

our battleship *Wellington*, which Mr. Stokes bought for 50,000. Now he has bought a Suffolk manor-house of the Tudor period. Half of it is there already, the other half will be there in the spring. The combination should be striking when Mr. Smelter Stokes has completed his freak house. One of these days we may wake up to find Westminster Abbey missing. And to rediscover it as the dining-room—with the Hippodrome close at hand as the drawing-room—in the splendid home of another Mr. Trust Smelter—if that is his 'unfounded name.'

Mortar at Tattershall Castle.

AS THE ownership of Tattershall Castle has lately been brought so much before public notice in connexion with the removal of its famous fireplaces, it may interest our readers to know that a specimen of the mortar employed in its erection was included in the analyses made and quoted in an article on ancient mortar published in the *Builder* of February 11, 1893. The mortar contained 24.83 per cent. of lime. The sand employed consisted of two different kinds, the greater portion consisting of small sharp grains of good quality, the remainder being somewhat rounded and water-worn. The relationship of lime to sand was as 1 to 1.75, whereas in the present jerry mortar the relation is often only 1 of lime to as much as 7 of sand. Though the proportion of lime is satisfactory, the percentage of amorphous silica existing as hydrated silicate of lime is comparatively low, namely, 3.05 per cent. On the whole, therefore, the mortar for excellence in durability cannot be compared with that of Tintern Abbey, Whitby Abbey, or even Fountains Abbey.

The Late Mr. D. G. Driver.

IN the wholly unexpected and greatly-regretted death of Mr. D. G. Driver the Architectural Association lose a singularly devoted and able Secretary, whose record of twenty years' service covers a period of great importance and activity in the history of the Association. His advent marked a parting of the ways, for soon after his appointment the modern necessities made it imperative for the Association to abandon, to some extent, the old voluntary system which had served so well in the past for a more progressive educational policy, and much of the work necessary to carry out the important developments which have given us the Association we know to-day fell upon Mr. Driver and the staff. He combined many of the qualities which make an ideal Secretary, not the least being great capacity for the duties of the permanent head of a large and progressing society and a readiness to assist—with a cheerfulness which made the service appear almost a personal matter—all who applied to him for information or help. It may be said of him more than of anyone else we know that his readiness to oblige others, often involving no little trouble and self-sacrifice, had become part of his nature, and his cheerful willingness and engaging friendliness endeared him to all with whom he came in contact and is the secret of his popularity and success. As we have already said, the Association have lost a most able Secretary, and they will find it no easy matter to fill his place.



THE LATE MR. D. G. DRIVER.

A MEETING of the Architectural Association was held on Monday at Tufton-street, Westminster, S.W., Mr. Gerald C. Horsley, President, in the chair.

The minutes of the last meeting having been read by the Hon. Secretary, Mr. H. A. Hall, and confirmed,

The President

said the next business was of great sadness, for it fell to him to announce the death of their Secretary, Mr. Driver. This sudden event took place early on Saturday morning, and so far they had no particulars concerning it; they had only heard that Mr. Driver died suddenly. They all knew that their Secretary had been out of health for many months, culminating in a breakdown last summer, when he was obliged to go away for eight weeks. He returned from his holiday apparently quite strong and well, but he could not have really recovered, and sometimes since his return, although he appeared well and strong to most, it seemed to some of them that the effects of his illness were still upon him. He (the President) feared that that must have been the case. He was going to ask Mr. Arthur Bolton to move a vote of condolence with Mr. Driver's relatives, and Mr. Keen to second it, and afterwards, acting on the decision of the Council, to adjourn the ordinary meeting arranged for that night

as a mark of respect to their late Secretary. This he was sure they would all agree to as a small indication from the general body members of the Association of their deep feeling in the matter, and their realization of the great loss which they had sustained. He had only to remind them that Mr. Driver was appointed Secretary exactly twenty years ago, and that during the whole of that time he had devoted all his energies—and he might say all his time, for he worked as hard and late—to the best interests of the Association. They would all miss their old friend the Association as a society would miss him as an earnest worker and as a devoted adherent.

Mr. A. T. Bolton,

in moving a vote of condolence to the relatives of the deceased, said he was anxious to do so, as being, he believed, a member on the Council longest acquainted with Mr. Driver. It was, as the President had mentioned, twenty years since Mr. Driver came to them, and it seemed difficult to think of the Association without him, although there were two or three in the room besides himself who could remember the time before, when the Association was conducted with the zeal and self-sacrifice of honorary secretaries alone. Ever since Mr. Driver had been with them he had worked with the most indefatigable zeal and the most wonderful good temper, devoting himself to putting the Association on a splendid business footing. Their Secretary never became an official; he seemed to remain the friend of all and to know everybody. He (the speaker) never knew anyone less bound with red tape, and it was characteristic of him that any suggestion for the good of the Association he would immediately see in the best light and give excellent support to in the Council in carrying it out. Mr. Driver had other interests except those of the Association, and he (the speaker) well knew, after long and complicated Council meetings when everyone else had left at a very early hour—in the old days that was, when the Council was not so businesslike—it fell to Mr. Driver to put all the proceedings in order. He managed everything in quite a wonderful way, thanks to a marvellous capacity for detail and a wonderful memory. At the time when he (the speaker) was under the mastership of the Day School he would have been very unwilling to do so but for his knowledge of the unfailing assistance would receive from Mr. Driver, who was always ready to give up his time to sug-



The Late Mr. D. G. Driver.

by which things could be carried out in the best way. A long list of Past-Presidents of the Association knew the value of his services, and had expressed their indebtedness to the Secretary for his help. Mr. Driver was to be present not only at the meetings of the Association, but he often attended the private meetings as well, and members were very glad to see him. If anyone resigned from the Association it fell to Mr. Driver to know they could get the resignation withdrawn. He would write round for subscriptions for special objects, and, in short, he endeavored to have no object in life except the prosperity and progress of the Association. His recollection that would linger in many of the members would be that of Mr. Driver's mind on the eve of some A.A. function, or visit, or meeting that he had an idea it would be a failure. If you ran across him then, it meant attending, for he would say to you that nothing else could avert the fate of the A.A., that it became impossible to find anyone with such admirable traits to succeed him.

Arthur Keen

Mr. Keen was glad to bear his testimony as to the value of the work of Mr. Driver, and he could testify gladly as to the qualities shown by their Secretary on occasions. One thought of him as a man of many years' standing and as the friend of many friends, and one envied him that position. He had always been struck by the fact that wherever Mr. Driver went he was always met by a crowd of people, and he would write round for subscriptions for special objects, and, in short, he endeavored to have no object in life except the prosperity and progress of the Association. His recollection that would linger in many of the members would be that of Mr. Driver's mind on the eve of some A.A. function, or visit, or meeting that he had an idea it would be a failure. If you ran across him then, it meant attending, for he would say to you that nothing else could avert the fate of the A.A., that it became impossible to find anyone with such admirable traits to succeed him.

G. E. Nield

Mr. Nield should like to associate himself with the vote of condolence, as he regarded Mr. Driver as a particularly old friend. The money that had been borne was perfectly adequate; it did not matter how long one had been away from the Association, one was always remembered by Mr. Driver, and if one wanted information or help he was always ready and willing to give every assistance. The motion was then agreed to in silence, the members present rising from their seats as the President put the motion. The President said there was one announcement to make as to the conversation arranged for November 23 at Tufton-street. The Council had had the matter under consideration, and they had decided that the wish of their Secretary was always that the work of the Association should go on without hindrance, and it was felt that it would have been Mr. Driver's wish that conversations should be held on the date named.

The next ordinary meeting of the Association will be held on November 27, when the paper entitled "Thoughts on Jacobean Architecture" will be read by Mr. Arthur T. Bolton.

ENGINEERING SOCIETIES.

The Institution of Civil Engineers.

At the last meeting of this Institution, on Friday, two papers were read, the first being on "The Loch Leven Water-Power Experiments," by Mr. A. H. Roberts, M.Inst.C.E. The site of the reservoir is favourably situated for storage purposes, and the full reservoir is about $\frac{1}{2}$ miles in length and 1 mile in breadth. Its greatest depth is 75 ft., it impounds over 20,000 million gallons of water. The Blackwater dam is 3,112 ft. in length, with a maximum height of 85 ft., its surface being 1,068 ft. above Ordnance mean. About half its length is formed as a waste-weir in six horizontal steps of 6 in.

each. The foundation is of an exceptionally sound character; only a few feet of the surface beds had to be removed to obtain a satisfactory foundation. The second paper was entitled "The Hydro-Electric Plant in the British Aluminium Company's Factory at Kinlochleven," by Mr. F. B. Sommerschein, Assoc. M.Inst.C.E.

The Concrete Institute.

At the twentieth ordinary general meeting of the Concrete Institute on the 9th inst., at Denison House, Westminster, S.W., an address was delivered by Sir Henry Tanner, President, of which the following is an abstract:

"This Institute has now been in existence some three and a half years, and as this is the first Presidential address that has been presented it seems to be a fitting opportunity for taking stock of the work it has done during that period, and in so doing I may touch upon matters to which I have never referred on other occasions. As some of you are aware, it came into being at a luncheon given by Mr. Edwin O. Sachs at the Ritz Hotel in July, 1908, and Lord Plymouth was elected first President.

The membership is distributed approximately as follows: 350 in London, 260 in the country, and 260 abroad; while the professions, etc., are represented by 582 engineers, ninety-one architects and surveyors, thirty-one concrete specialists, forty-five chemists and cement manufacturers, and twenty-eight contractors.

Less interest appears to be taken in the papers read and discussions thereon than was formerly the case, while it becomes increasingly difficult to obtain papers which are at once suitable and of sufficient interest. It is desirable, therefore, that the causes which give rise to this state of things which has arisen should be inquired into and remedied.

Concrete and reinforced concrete form parts only of structures, frequently there is much steelwork and other materials involved including heavy timbering, either permanent or in false work.

It is considered, therefore, that structural engineering being so intimately connected with our special subject might well be regarded as coming within our purview and that papers on such matters should be read and discussed. This is particularly the case having regard to the large number of engineer members. This can be done without in any way trenching on the prerogative of other societies, as there is no Institute dealing particularly with such subjects. I hope that the results which this Committee may arrive at will be to the distinct advantage of the members.

The Committee is empowered to take energetic steps to foster the structural engineering side, and thus we see how in future we shall in effect be not only a Concrete Institute, but an Institution of Structural Engineers as well. With the extended field as indicated above in which practically all our members are interested, and the majority actively engaged therein, our work should be much more valuable and our membership influenced accordingly.

In this connection I cannot but think that membership requires better classification, and could usefully be rearranged on the lines of several of the engineering societies. In the future also it may be possible and advisable for us to hold an examination in advanced structural engineering, which shall in no way trench upon the examinations of other bodies, but be supplemental thereto. Such prospects of extended scope for the energies of members is encouraging.

Further, I think that much more use might be made of the *Journal*. Many members and others must be in possession of information which would be of the greatest value to their brethren, while short articles of approved quality and matter would, I believe, be welcomed by the Council. The *Journal* should be issued regularly at intervals not exceeding three months.

I am pleased to be able to say that the Institute of Civil Engineers has taken up the subject of reinforced concrete through the Committee which it appointed some time ago, and to which my name was added in June of last year, and a considerable sum of money has been devoted to experiments which are in process of being carried out, and I hope for much advantage from what I may regard as the co-operation of that Institute. There is no doubt that experiments are needed in this

country with a view to obtaining a consistent and complete series based on materials to be obtained here and mixed and tested under similar conditions. At the present time we have to rely on experiments in America, Germany, and France with cement of varying character and local aggregate, and it would be of the greatest advantage if these could be repeated in some cases at intervals for some years; the improvement in strength being so great. Perhaps this want may be removed.

For some time past the Joint Committee appointed by the Royal Institute of British Architects, upon which we are represented, have had under consideration the revision of its first report, and the revised edition was published several months ago in a much more handy form than before, and at the small price of 1s. As Chairman of the Committee I desire to thank the members of the Sub-Committee, upon whom the work really fell, for their labours so freely given; while it is satisfactory to think that this report, so far as it goes, is accepted generally as the basis of local regulations for governing buildings of this character. These regulations require to be framed in such a way that they can be amended in order to keep pace with the acquisition of fuller and more complete knowledge, which will no doubt come in due time.

The importance of being able to do this is shown by it having been necessary for the London County Council to obtain an Act of Parliament in order to make such alterations and additions to its Building Act to admit of reinforced concrete being used in an adequate way, and so preventing the development of a method of construction which has been proceeding in America and on the Continent at a pace considerably in advance of this country, and at a saving of much money, while under suitable conditions it is a far better method of construction to adopt for safety, as in the case of countries liable to seismic disturbances.

However, with the approval by the Local Government Board of the London County Council by-laws, after submission to several societies, including ourselves, for observations, it may be expected that there will be a considerable extension in the use of reinforced concrete in London, as also in other parts of the country; other cities having also taken steps to admit of such methods of construction being used, and it may be hoped that the list may be much extended.

The preparation of such reports and the adoption of by-laws regulating the use of reinforced concrete must tend to standardisation in design, and this must prove all for good. We have fortunately been fairly free from any serious failures in reinforced concrete construction, but experiences in America and on the Continent show that there is need for watchfulness. Although most of the failures have been attributed to bad construction and the ignorance or carelessness of contractors and their employees, cutting in design may have been a contributory cause.

It is interesting to note that the American Joint Committee on Concrete, which some time ago, like our own Joint Committee, issued an interim or first report, has now under consideration a further report brought up to date.

The Board of Education appointed a Committee to inquire into the question of economy in building, and as to whether buildings of a more temporary nature could not very well be brought into use. Reinforced concrete came in for its share of the discussion, but the estimates of cost varied largely, from 33 per cent. less to 10 per cent. more than for ordinary building. No difference of locality will account for these variations. It seemed to me that witnesses having a more intimate knowledge of the cost of such buildings might have been called, while it should be possible to standardise such buildings and so effect considerable economy. There can be no question of the greater desirability of structures of these materials with a minimum expense for maintenance, less cost for heating, concrete being a good non-conductor, while the reduced cube must make for economy. A loan period of thirty years was referred to, while the usual loan period for schools of ordinary construction was stated to be fifty years. It is impossible to understand the difference in treatment. It is very little good encouraging specific proposals for the use of novel materials or methods for public elementary schools when such differences of

treatment prevail, and in effect penalising any new system of building, while local by-laws make no special provision proper to the use of reinforced concrete. In order, however, to remove this last difficulty it was suggested in the report that legislation should be promoted to exempt school buildings, the plans of which had been approved by the Board of Education from the operation of local building by-laws. It also recommended that the building regulations of the Board of Education should be revised with the same object of removing obstruction.

The Council inaugurated a series of lectures of an elementary character given by Mr. R. W. Vawdrey during the spring, which were fairly well attended, but we can scarcely hope to effect much good in competition with the courses given at the London County Council Schools and under the auspices of the London and other Universities, which have the advantage of testing apparatus, etc., and are generally better equipped. This is a matter worthy of the consideration of the Council.

The Standing Committees of the Institute have done good service; the new notation appears likely to be adopted generally in English-speaking countries, and its adoption is now being considered in America, with, I understand, reasonable hopes of success. We have already intimated that we shall be happy to co-operate with the American Joint Committee in endeavouring to arrive at some common notation.

Useful papers have been read before the Institute during the past sessions, and among those of last session that read by Mr. R. W. Vawdrey on "The Dissociation of Competitive Designs and Tenders" is one of much interest to many.

Competition in reinforced concrete work has now proceeded to inordinate lengths, and it would seem that we have obtained the chief advantage to be derived from competition in design and that steps should be taken to put some limit to it. To effect this designers must be placed more in the position of consultants, and not so closely associated with contracting firms as has hitherto been the case.

Much is said about the architectural treatment of concrete, and that that treatment should be appropriate to the material. This subject was dealt with by Professor Beresford Pile in a most interesting paper, and we hope that the discussion may be continued in a full meeting later on. The subject is a difficult one, and formed one of the items to be discussed at the International Congress of Architects, but although there was some discussion, it was considered that the time was not ripe for any resolution to be moved. The great desire is to make the whole building of reinforced concrete, including the external walls, and developing some new method of architectural treatment.

I now come to the future. The Institute has a strong Council and an energetic Secretary, who are anxious that the Institute should take its proper place in the scientific world, and the members look for information and general assistance.

To some extent, as I have shown, the Council has devoted itself to meeting this want, and is, I think, fully alive to the necessity of obtaining good papers, but the great difficulty is to obtain the offer of them. Everyone should therefore use his influence in this direction. After all, Institutions of this nature are established for mutual information, and it is the business of all members to assist in this object.

It may be thought that my remarks have a pessimistic tendency, but that is not intended, my desire being to urge all our members to take what part they can in the work of the Institute for the benefit of all. With the extension of our scope to include structural engineering in its broad aspect we shall have a wider outlook and a future of great usefulness with a possibility of a considerable increase in membership. I therefore conclude with feelings of the most optimistic character.

Bristol Association of Engineers.

The first dinner of the current session was held at the Imperial Hotel, Clifton, under the Presidency of Mr. T. J. Moss-Power. The President, before giving his address on "Modern Engineering Practice in Sewerage and Sewage Disposal Works," made a few

general remarks. He said they were now commencing the eighteenth session, and gave some particulars as to the organisation, formation, and past work of the Association. It appeared that some sixty-eight papers had been read and discussed, and numerous visits had been paid to works. The President, in the course of his address, said:—"It is a pleasing aspect for engineers on looking out over the face of the world to see how much of the real progress of civilisation is due to their efforts, and how proud of this fact must every engineer be, no matter in what branch of engineering he may be engaged. The self-satisfaction that comes from having created something which is of positive benefit to his fellow-man is indeed worth all the trouble, and the greater the effort put forth, the greater the satisfaction. A judicious blending of physical exercises, including the art of national and self defence, with sound scientific and practical education on lines most fitted for the career it is intended the youth to follow, is, I consider, what is desirable, and with this object in view there should be greater co-ordination amongst the many educational institutions than exists at the present time."

GENERAL NEWS.

Professional Announcements.

Mr. C. Orlando Law, architect and surveyor, asks us to note that he has changed his address from "Dacre House," Arundel-street, Strand, W.C., to 15, Rossmore-gardens, Cheyne-gardens, S.W. We should like, as courteously as possible, to intimate to Mr. Law that the initials "L.R.I.B.A." used after his name are not considered permissible. "Lic.R.I.B.A." or "Licentiate R.I.B.A." is the approved form.

We regret to announce that Mr. Geo. Stanley Rees, architect, of Calgary, Alta, Canada, while in the enjoyment of what seemed to be the best of health, has been stricken by a stroke of paralysis. For three days his life was despaired of, and now he is denied the power of speech. Hopes are entertained of his complete recovery.

The Architectural Association Conversazione.

The Council of the Architectural Association have decided that the annual conversazione, arranged to take place on the 23rd inst. at Tufnell-street, S.W., shall not be deferred owing to the death of their Secretary, believing that that decision would have been in accordance with the wishes of Mr. D. G. Driver, who had the welfare of the Association always at heart.

Lectures on Reinforced Concrete.

In view of the revised syllabus of the R.I.B.A. Examinations (which now includes reinforced concrete in the final stage), a special course of six lectures on "The Principles of Design in Reinforced Concrete," specially adapted for architectural students, is to be given at the Westminster Technical Institute, Vincent-square, S.W., on Friday evenings, commencing November 17. The lectures cover the design of beams, floors, slabs, columns, arches and walls, shear deflection, falsework, etc.; and are based upon the latest R.I.B.A. report, which is recommended as a text-book. The fact that examples of design are to be worked out during each lecture would appear to indicate that the treatment will be practical and not exclusively shrouded in mathematics. The fee for the course is 2s. 6d. The lecturer is Mr. E. J. Waldram, the author of the recent series of articles in these columns upon "Definitions used in Structural Mechanics."

The Surveyors' Institution.

The portrait of Mr. Daniel Watney which was painted by the Hon. John Collier was presented to Mr. Watney at the Surveyors' Institution, 12, Great George-street, Westminster, on Monday. Subsequently Mr. Watney requested the President to accept the picture on behalf of the Institution.

Election of a Royal Academician.

The vacancy created by the death of Mr. Edwin A. Abbey, R.A., in last August, has been filled by the election, on November 8, of Mr. Lionel Percy Smythe, A.R.A., and member of the Royal Water-Colour Society. Mr. Smythe, a painter in water-colour and in oil, has exhibited in the Royal Academy rooms during more than forty years past, and

was elected an Associate in 1898. His "Germinal," in water-colour, was purchased in 1896, for 100 guineas, by the Chantrey Trustees, who also, it is understood, would have bought in 1901 his "Within Sound of the Sea" had it been painted in England.

Co-Partnership Tenants, Ltd.

Earl Grey is to be welcomed back to Canada at a dinner to be given in the Holborn Restaurant, London, this Friday, November 17, at 7.30. Mr. Justice Neville will preside.

Fritwell Manor.

Sir John Simon, the Solicitor-General, has purchased Fritwell Manor, an estate between Bicester and Banbury, Oxon. The late Mr. Thomas Garner, in partnership with the late Mr. George Bodley, devoted much time and money to the restoration of the building. The house, with 12 acres, and the advowson of St. Olave's, Fritwell, has been sold for 7,300.

Metropolitan Mayors, 1911-12.

Amongst the mayors who were elected last week are the following:—Mr. E. M. Preston, L.C.C., mayor in 1909 (Deptford); Mr. G. W. Holtzapffel, proprietor of the long established firm of lathe and tool makers (Hampstead); Mr. W. Whitaker Thompson, late Chairman, L.C.C. (Kensington); and Mr. F. J. Sedgwick, engineer, and member of the Borough Council (Poplar).

Bunyan Window, Westminster Abbey.

The window, by Mr. J. M. Comper, will be formally presented to the Abbey on January 25. It is fixed in the west wall of the north transept, and has cost 1,200l. The headlight depicts the Lamb of God; in the eight other lights are scenes taken from the Pilgrim's Progress, including Christian's deliverance of the burden of Sin, the Interpreter's House, the fight with Apollyon, Vanity Fair, and Christian and Hopeful entering the Celestial City.

Lighting of the City Streets.

The Streets Committee of the Corporation have formulated a scheme for lighting the street with both electricity and gas by means of lamps centrally hung, as much as possible, after the kind now used in Cheap-side, west end, for electricity, and in Cannon-street, east end, for gas. It is calculated that the new project will result in the saving of many thousand pounds a year in respect of cost; and the increasing of the illumination-power by nearly 50 per cent.

International Exhibition, Amsterdam, 1912.

The Corporation of Amsterdam will hold, on April 13—June 8, next year, an International Exhibition of works by living artists, to include sculpture, paintings, water-colours, and pastels, designs in black-and-white, lithographs, and engravings. Exhibitors should be forwarded between February 26 and March 2 to the Comité Exécutif, Exposition Internationale Municipale des Ouvrages des Artistes Vivants, Musée Municipal, 13, Paulus Potter-straat, Amsterdam.

Bournemouth's Sea-Front.

A Local Government Board inquiry was held at Bournemouth a few days ago with respect to an application by the Town Council to borrow about 10,000l. to construct an overcliff drive along the sea-frontage of Boscombe Manor and Wentworth Lodge estates, between Boscombe and Southbourne, and for works of sewerage. The Town Clerk, and the Borough Surveyor, Mr. F. W. Lacey, gave particulars of the scheme, which provides for a drive nearly a mile in length, and opens out some fine views of the Isle of Wight and Purbeck Hills.

Christ Church, Endell-street, W.C.

The Rev. S. A. Griffiths, incumbent, makes an appeal for a sum of about 950l., wherewith to carry out the repair and restoration of the fabric. The church was built of Kentish rag with Bath stone dressings for the parishioners of St. Giles-in-the-Fields, in 1844-5, after the designs, in the Early English style, of B. Perry, illustrated in the *Builder* of March 8, 1845; it was restored in 1877 by Butterfield. The church was struck twice, and the spire was shattered by lightning on August 17, 1887, scarcely did any portion of the edifice escape. The County Fire Office undertook to rebuild the spire, at the cost of 1,616l., and the fabric was reinstated in other respects under the directions and superintendence of Mr. R. E. Tyler, F.R.I.B.A.

Section of Sanatoria : National Insurance Bill.
 (Clause 47 of the National Insurance Bill, which clause was passed in the House of Commons on November 9, provides for the distribution by the Local Government Board, with the consent of the Treasury, of such sums may by statute be available for the provision of sanatoria and kindred institutions, and empowers the Board to authorise a county council, on receiving a grant, to provide any such institution, to erect the buildings, to pay the cost, so far as it is not met by the grant, out of the county fund, and to manage and maintain the sanatorium.)

Richmond Hill.

At the meeting of the Surrey County Council at Kingston on the 14th inst. a report was presented by the General Purposes Committee stating that plans had been submitted relating to a proposal by the Earl of Arundel to construct a cut from the Thames between Richmond and Kingston through the riverside lands at Ham to a small dock proposed to be formed upon a site near the river, where excavations for gravel are now being made. The Committee recommended the Council to agree to the proposal, subject to certain modifications of the plan being agreed by Lord Dysart. Several members, however, took exception to the construction of the dock on the ground that it would be detrimental to the amenities of the view from Richmond Hill, and Councillor Thompson (of Richmond) proposed, and Councillor Humphreys (of Richmond) seconded, a motion that the matter should be referred back, and this was agreed to.

Heroes of the French Revolution.

M. François Sicard has completed in plaster a group of statuary, on which he has been engaged for some years, symbolising the Great Revolution and the National Convention.

The monument has been placed temporarily in the Panthéon to enable the sculptor to make alterations before it is executed in marble. The composition is dramatic and well conceived. Portraits of Robespierre, Danton, Hoche, Desmoulins, Marat, Vergniaud, Carnot, and Condorcet are included, and when completed the memorial will be an attractive feature of the Panthéon.

Haggerston Castle, Northumberland.

Haggerston Castle, near Berwick-on-Tweed, which was almost entirely destroyed, with much of its valuable contents, by fire on November 5-6, was rebuilt some fifteen years ago, at a cost of more than 100,000*l.*, by Mr. C. J. Leyland, upon the site of the mansion which replaced the old Castle. The old Castle, the seat of the ancient family of Haggerston, was burned down in 1618, with the exception of the tower wherein Edward II. in 1311 received the homage of Thomas, Earl of Lancaster, grandson of Henry III., for the earldom of Lincoln, which he acquired by marrying Alice, daughter and heir of Henry Lacy, Earl of Lincoln. The tower, standing beyond the conservatory of Mr. Leyland's house, has fortunately been again saved.

Llanrwst Sewage Disposal.

The Llanrwst Urban District Council have approved and adopted a scheme of sewage disposal for their town, prepared by Mr. Harry W. Taylor, A.M.Inst.C.E. (Messrs. Taylor & Wallin), of Newcastle-upon-Tyne and Birmingham. As the valley of the Conway is subject to severe floods, special means of protection had to be taken to avoid damage and interference from this cause. The cost of the works is estimated at 5,000*l.*

Lord Howard de Walden's Estate, Marylebone.

Lord Howard de Walden's scheme for dealing with his property in the parish of

Marylebone (of which we gave a brief historical account in our issue of September 2) embodies the offer to his tenants of leases for 999 years at the rents reserved by the existing leases. They are invited to submit the terms upon which they would be prepared to extend their present leases and purchase 999 years' leases; or, if they prefer it, the terms upon which Lord Howard de Walden is prepared to grant extended leases will be communicated to them upon application to the Estate Office, 23, Queen Anne-street, W. If it be so desired, his lordship is prepared to leave two-thirds of the price of the reversion upon mortgage for five years certain at $\frac{3}{4}$ per cent. In every instance the claims of a sub-tenant who is a substantial occupier will be considered before any terms are arranged. In a circular letter addressed to his tenants Lord Howard de Walden says :—

"My wish and intention is to offer my tenants as much freedom in dealing with the properties they occupy as is compatible with their mutual protection, such covenants only as may be necessary for that purpose being retained. . . . The offer will be of a lease for a term of years which, with the existing term or terms, will make up 999 years from the present time. The rent reserved will be that reserved by the existing lease or leases, and the consideration payable by the tenant will be a sum equal to the reversionary value of the property after deducting the rent reserved, such reversionary value being the difference between the value of the existing lease at the present rent and of the lease to be granted."

Property Sales.

The Hurlingham Club have purchased Broome House and its grounds, appertaining to the Sullivan estate, Fulham; the early Georgian mansion and the land, 24 acres in all, realised 20,000*l.* Other properties recently placed in the market comprise Ancaster House, having a main frontage of 600 ft., on Richmond Hill, close to the park gates (1798), and opposite the Star and Garter Hotel, which, originally a shooting-box of the Duke of Ancaster, was given by George III. to Sir Lionel D'Yerville; Moatlands, Brenchley, the seat in olden times of the Brenchells, or Brenchleys, of whom Sir William Justice of the Common Pleas, and his wife Joan (1446) were buried in the nave, Canterbury Cathedral; and Westerhall, Dumfries, which for seven centuries has continued in the family of the present owner, Sir Frederic Johnstone; the house was built in the end of the XVth century, and the whole estate extends over 11,180 acres. Advertising to the announcement in our last week's number of the purchase by Earl Curzon of Kedleston, of Tattershall Castle, we may mention that in the Victoria and Albert Museum are plaster casts of the four chimneypieces that Pugin used as models for fireplaces in the Houses of Parliament.

A New Ordnance Map.

Mr. Edward Stanford, official agent for the large-scale Ordnance maps, announces the publication of the first 165 sheets of a new issue on the scale of 50 in. to a mile (1:1,250). Hitherto, apart from the town plans, the largest scale on which urban districts have been obtainable has been the well-known 25 in. to a mile, and the new issue is based on an enlargement of that map. The large-scale map has been specially prepared for use primarily in connexion with land valuation, and the area covered by each sheet is one quarter of that of a 25-in. sheet. The size of the sheets is 40 in. by 27 in., and the price 2s. 6d. each. The sheets already issued are in the undermentioned districts—Cheshire: Bollington, Chorley, Northwich, Pownall, Poynton. Durham: Crawcrook, Hedworth, South Shields. Hampshire: Aldershot, Alton, Andover, Basingstoke, Bishop's Waltham, Cosham, Emsworth, Fareham, Havant, New Alresford, Odiham, Petersfield, Portsea, Portsmouth, Romsey, Southampton, Stockbridge, Titchfield, Waterloo, Whitechurch, Winchester. Lancashire: Ashton-under-Lyne, Barton-on-Irwell, Denton, Middleton, Pendleton, Penketh, Poulton, Warrington, Winwick, Woulston. Leicestershire: Market Harborough. Northumberland: Cramlington. Sussex: Petworth. Yorkshire: Billingley, Bridlington, Calverley, Cottingham, Doncaster, Filey, Harrogate, Haworth, Kingston-upon-Hull, Knaresborough, North Bierley, Norton, Ovenden, Pontefract, Sedburgh, Settle, Snaith, Sutton and Stone Ferry, Thornton, Todmorden, Tong, Wetherby.



Monument in the Pantheon to the Convention Nationale.
 M. François Sicard, Sculptor.

COMPETITION NEWS.

Central Fire-Station for Hendon.

The Fire Brigade Committee of Hendon Urban District Council report having considered the merits of the designs submitted in the limited competition for the central fire-station scheme, and a report from the surveyor thereon, and have come to the conclusion that Design No. 4, submitted by Mr. H. A. Welch, A.R.I.B.A., should be placed first in order of merit, and that Design No. 6, submitted by Mr. T. Millwood Wilson, second. In the course of the discussion that followed Mr. King said the designs were such as warranted the action of the Fire Brigade Committee in appealing only to local architects. He moved that all the designs should be placed on public exhibition. This with the report was carried.

Parliament Buildings, Wellington.

The award in this competition, limited to New Zealand architects, is as follows:—

- (1,000l.) Messrs. John Campbell, F.R.I.B.A., & Claude Paton, of Wellington (illustration below).
- (500l.) Messrs. Turnbull & Son and J. S. Seddon, of Wellington.
- (300l.) Mr. William H. Gummer, Auckland.
- (200l.) Messrs. John Campbell & Charles A. Lawrence, Wellington.

Thirty-three sets of designs were received. Mr. John Campbell is the Government Architect, New Zealand, which gives point to the following clause in the conditions of the competition:—"Any officer in the Government Service desirous of competing must prepare his designs entirely in his own time, at his own expense, and on his own premises, or, at any rate, not in the Government Offices."

We understand from the *British Australasian* that the professional adjudicator was Colonel Vernon, late Government Architect of New South Wales, who thought that "a very high order of merit was shown in many of the designs submitted."

The first portion of the buildings is estimated to cost about 160,000l., and the second about 90,000l., or a total of about a quarter of a million for the whole work. The principal feature of the front elevation is a stone stairway 40 ft. wide, flanked by two groups of statuary, leading up to the main floor of the building, which is to be 14 ft. above the ground surface. The stairway will extend beyond the main frontage, and will be flanked on either side by long colonnades of Ionic capped pillars 10 ft. wide. At either end of the building pavilions will project out beyond the colonnade, in a similar fashion to the stone stairway. Another feature of the front elevation will be a dome 35 ft. in diameter, placed over the main staircase. The base of the building is intended to be rusticated.

Gidea Park: List of Awards.

The complete list of awards in the series of competitions at Gidea Park is as follows:—

- Class I.—A detached house, to cost 500l. :—
 (1) Gold medal and 250l., Plot 208, Mr. Geoffrey Lucas, F.R.I.B.A. (builders, Messrs. Wm. Moss & Sons, Ltd.). (2) 100l., Plot 240, Mr. Reginald T. Longden, Lic.R.I.B.A. (builders, Messrs. Wm. Moss & Sons, Ltd.). (3) Highly commended, Plot 43, Mr. W. Curtis Green, F.R.I.B.A. (builders, Messrs. Falkner & Sons). (4) Hon. mention—Plot 205, Mr. C. Quaife May (builders, Messrs. William F. Bay, Ltd.); Plot 203, Messrs. D. Bamford, A.B.I.B.A., & Aitken (builders, Messrs. Jones & Andrews); Plot 1046, Mr. Ernest Willmott, F.R.I.B.A. (builders, Messrs. Wm. Moss & Sons, Ltd.); Plot 242, Mr. E. G. Theakston, Lic.R.I.B.A. (builder, Mr. F. W. Jarvis); Plot 201, Messrs. Forbes & Tate (builders, Messrs. W. King & Son); Plot 241, Mr. Edwin Gunn, A.R.I.B.A. (builder, Mr. F. W. Jarvis); Plot 57, Messrs. G. L. Pepler, F.S.I., & E. J. Allen, A.R.I.B.A. (builders, Messrs. Grace & Marsh).

Class II.—A detached cottage, to cost 375l. :—(1) Gold medal and 200l., Plot 273, Mr. C. M. Crickmer, Lic.R.I.B.A. (builder, Mr. H. Hurst). (2) 100l., Plot 291, Mr. Herbert A. Welch, A.R.I.B.A. (builders, Messrs. Wm. Moss & Sons, Ltd.). (3) Hon. mention—Plot 288, Mr. Percy B. Houtton (builders, Messrs. Wm. Moss & Sons, Ltd.); Plot 266, Mr. Arthur H. Moore, A.R.I.B.A. (builder, Mr. J. Butterfield); Plot 265, Mr. A. P. Starkey (builders, Messrs. W. H. Maxey & Son); Plot 302, Mr. C. W. Yates (builders, Messrs. Butcher & Son); Plot 305, Mr. F. Sherrin (builders, Messrs. Alfred Brown & Son); Plot 327, Mr. J. Myrtle Smith, A.R.I.B.A. (builder, Mr. P. R. Paul).

Class III.—For the best internally-fitted house in Classes I. or II. (prize divided) :—

- 25l. to Plot 348, Mr. Stanley P. Schooling (builders, Messrs. Dowling & Davis); 25l. to Plot 282, Mr. Ernest Willmott, F.R.I.B.A. (builders, Messrs. Wm. Moss & Sons, Ltd.).
 Class IV.—A town plan of Gidea Park :—
 (1) 100l., Messrs. W. Garnett Gibson & Reginald Dann. (2) 50l., Messrs. Geoffrey Lucas, F.R.I.B.A., & T. A. Lodge. (3) Highly commended, Mr. Oswald P. Milne, Lic.R.I.B.A. Commended—Mr. T. F. Pennington, A.R.I.B.A.; Mr. Frank Gray Wallis; Messrs. R. Bennett, A.R.I.B.A., & W. Bidwell; Mr. Gilbert Waterhouse. Perspective prizes 10 guineas to Mr. Oswald P. Milne, Lic.R.I.B.A.; 10 guineas to Messrs. T. Millwood Wilson, Lic.R.I.B.A., with H. A. Welch, A.R.I.B.A.

Class V.—A garden design for house or cottage in Classes I. or II. :—(1) 25l. to Plot 43, Mr. W. Curtis Green, F.R.I.B.A. (contractors, Messrs. Falkner & Sons, and Messrs. Barron & Sons). (2) 10l. to Plot 209, Geoffrey Lucas, F.R.I.B.A. (contractors, Messrs. Barron & Sons).

Class VI.—A perspective drawing, suitable for reproduction, of a house or a cottage entered for competition in Classes I. or II. :—
 (1) 10l. to Mr. H. S. East, A.R.I.B.A. (2) 5l. to Mr. R. Mauchlen.

Class VII.—(Competition open to builders) For excellence of workmanship and construction in the erection of a house or cottage in Classes I. or II. :—(1) Gold medal and 100l. Plot 43, Messrs. Falkner & Sons. (2) 50l. Plots 241 and 242, Mr. F. W. Jarvis.

The judges in the above competitions were Mr. E. Guy Dawber, F.R.I.B.A., Mr. H. V. Lancaster, F.R.I.B.A., and Mr. Mervyn E. Macartney, F.R.I.B.A.

Class IX.—Improvements in materials used in house building, etc. Bricks—Silver medal, Plot 244, silver grey bricks supplied by Messrs. S. & E. Collier, Reading (architect, Mr. C. Williams Ellis; builders, Messrs. Allen Bros.); silver medal, Plot 256, wood-barn brown bricks supplied by the Sussex Brick Company, Warnham, Sussex (architects, Messrs. Fair & Myer, A.R.I.B.A.; builders, Messrs. Jones & Andrews). Artificial stone paving—bronze medal, Plot 44, supplied by the Victoria Stone Paving Company, Stratford (architects, Messrs. A. E. Sawday, F.R.I.B.A., and T. T. Sawday, A.R.I.B.A.; builders, Messrs. Lovell & Son). Woodwork—highly commended, Plots 43 and 274, cypress wood (architect, Mr. W. Curtis Green, F.R.I.B.A.; builders, Messrs. Falkner & Sons). In Class IX. the judges were Mr. Walter Cave, F.R.I.B.A., and Mr. Lawrence Weaver, who "were impressed not only with the general good quality and interesting variety of the materials used, but also with the abundant ingenuity and taste with which they were employed."

Class X.—Improvements in fittings used in house building (sanitary, cooking, lighting, and heating, etc.) :—Silver medal, Plot 256, "B. K." range, exhibited by the Coalbrookdale Company, Ltd., Burners-street, W. silver medal, the "Interoven" stove, exhibited by Interoven Patent Stove Company, 78 Great Queen street, Kingsway, W.C. Mr. Max Clarke, F.R.I.B.A., was the judge for this class.

Class XI.—Furnished house :—Silver medal, Messrs. Heal & Son, Tottenham Court-road; silver medal, Messrs. Vining & Gilrow, Ltd., Oxford-street; bronze medal, Messrs. Hindle & Wilkinson. Judged by Mr. Halsey Ricardo, F.R.I.B.A.

Northwich Baths.

Mr. F. T. Baggallay, F.R.I.B.A., has made the awards in the competition for the proposed public baths, Northwich, as follows:—
 1. Mr. J. E. Franck, A.R.I.B.A., Pancras-lane, Queen-street, E.C. 2. Mr. A. E. Powles, F.R.I.B.A., Northwich. Mr. D. C. Leigh, A.R.I.B.A., Weaverham. The drawings will be on view at the public library for fourteen days from Wednesday next.



Parliament Building, Wellington, N.Z. Design awarded First Premium (1,000l.)

(From the New Zealand Times.)

By Messrs. John Campbell, F.R.I.B.A., and Claude Paton.

LONDON COUNCILS.

Barnet.—Plans have been passed for four houses, Rodford-avenue, for Messrs. Lavington & Co., Ltd.

Barnet.—Steps are to be taken with a view making up the following streets:—Netherland-road, Fitzalan-road, Dudley-road, Wooding-avenue, Bilsbury-avenue, and Rose-avenue. Plans have been passed as follows:—Mr. T. Richards, four houses, Fairview-avenue; Mr. J. C. Williamson, six houses, Cypress-avenue; Mr. W. T. Andrews, motor garage, Thirwood, Holden-road.

Enfield.—The tender of the Patent Portland Cement Company, Ltd., has been accepted by the Rural District Council for trying out the work of paving Friern Road, at 5s. 6d. per yard super., laid in concrete.

Greenford.—At the last meeting of the district Council it was decided to proceed with a town-planning scheme for the district.

Hendon.—The tender of Mr. Haddo, at £10s., has been accepted by the Rural District Council for the erection of an observatory at the Isolation Hospital at Stanwell.

The following plans have been passed:—Mr. Elwell, six houses, Cecil-road, Pinner; Messrs. Steeles, five houses, Longley-road, Pinner; Mr. Bell, three houses, etc., College Hill, Harrow Weald; Mr. H. Curry, additions, The Ridge; Mr. H. T. Tennant, alterations to Bentley Priory, Harrow Weald. Plans have been lodged by Mr. J. Hare, for alterations to "Kinkigh," Edgware. The Surveyor has been instructed by the Urban District Council to prepare plans and estimates for making up the following streets:—The application is to be made to the Local Government Board for sanction to a loan of £242, to carry out improvements works the junction of Green-lane and Brent-street.

The Surveyor is to carry out the work of constructing a new sewer at Elm-terrace, Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively. In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

In connection with the preliminary plans prepared by the Surveyor for own planning scheme, it has been decided to lodge the portion of the district north of Elm-hill, and a surface water drain from Elm-hill-road at estimated costs of 101L. and 10L. respectively.

Leyton.—Plans have been passed for Mr. A. Radcliffe for nine houses in Essex and Grange Park roads, also for Mr. F. J. Sturdy, for additions to the Nurses' Home at West Ham Infirmary, James-lane. The London General Omnibus Company have lodged plans for a motor garage, Leyton Green.

Poplar.—A plan has been passed for Mr. W. Pringle for rebuilding "Falcon" beer-house, East India Dock-road.

Richmond.—The Surveyor has been instructed to put into hand the work of renewing the grass verge and fixing kerbs in Kew-road at an estimated cost of 100L. It has been decided to take such steps as may be necessary under the Housing, Town-Planning, etc., Act, 1909, and the regulations made by the Local Government Board thereunder, with a view to an application being made to the Board for permission to prepare a town-planning scheme. Plans have been passed for Messrs. S. N. Soole & Son for rebuilding dye works in Water-lane; also for Mr. H. G. Leslie for four houses in Fitzwilliam-avenue.

Southgate.—The following plans have been passed:—Mr. W. Bass, four houses, High-west-road, Bounds Green; Messrs. Emden, Egan, & Co., Queen's Hall Electric Theatre, Green-lane, Palmer's Green; Messrs. Parmiter Brothers, four houses, Green Dragon-lane, Winchmore Hill.

Staines.—At the last meeting of the Board of Guardians Mr. Kingston moved that the Clerk be instructed to apply to the Local Government Board for consent to a loan for the purpose of building a Boys' Home. He said, in regard to this proposal, that he had attended the Local Government Board Offices with a Mr. G. W. Manning to discuss the scheme. He took with him two sets of plans, one prepared by Mr. Manning and the other by Mr. Scott of Staines (the latter having been submitted without fee or reward), and after going into the plans, those submitted by Mr. Manning were finally approved. He (Mr. Kingston) further moved that Mr. Manning be instructed to get out specifications and quantities, and further, that tenders be invited for the erection of the building. The motion was agreed to. The estimated cost is put at £2,000.

Tottenham.—The Engineer has been instructed to prepare plans and estimates for making up Barry-avenue, Rusper-road, and a portion of Craven Park-road.

Wandsworth.—Tenders are to be invited for paving part of Lessingham-avenue, Tooting, as a new street. The following plans have been passed:—Mr. G. E. Jones, eight houses, Uganda-street, Balham; Mr. J. Copp, seven houses, Dowton-avenue, Streatham; Messrs. H. Somerford & Son, additions to Queenswood School, King's-avenue, South Clapham.

Watford.—The following roads are to be repaired with granite at the cost stated:—London-road, 399L.; High-street, 745L.; Market-street, 218L.; Cassio-road, 91L.; Whippendell-road, 303L.; Harwood-road, 199L.; Rickmansworth-road, 329L.; Woodford-road, 177L. The following plans have been passed:—Messrs. Morrison, Jones, & Taylor, Ltd., workshop, the Rookery; The Governors of the Watford Grammar School, alterations and additions, Shepherd's Lodge, Rickmansworth-road; Watford Manufacturing Company, additions to Confectionery, Victoria Works, Sandown-road.

Woolwich.—Electricity mains are to be extended at an estimated cost of 275L. The Works Committee have received a letter from Mr. R. Stewart on behalf of Lord Rowallan, to the effect that he proposed to develop the portion of the Corbett Estate, east of Gienesk-road, and north of the South Eastern and Chatham Railway. The following plans have been passed:—Messrs. F. Boreham, Son, & Gladding, architects, 75, Finsbury-pavement, E.C., on behalf of Messrs. F. W. Smith and W. F. Goodwin, adaptation of No. 65, High-street, Plumstead, into cinematograph theatre; Mr. J. J. Bassett, builder, 121, Earls-hall-road, Eltham, on behalf of Lord Rowallan, six houses, Dunvegan-gardens, Dunvegan-road, Eltham.

CORRESPONDENCE.

Official Architecture.

SIR,—In regard to Mr. Stokes's criticism of "Official Architecture" and its cost, I should like to lay before you a few observations, if you would kindly allow me, based on personal experience at the Office of Works.

Firstly, if the difference in cost between Government and private architects' work is due to the rate of pay to the assistants of the former, I am sorry for the assistants of the latter. One material advantage the capable Office of Works' assistant does possess, that of being in a practically per-

manent job, for the quantity of work varies little from year to year. This fact has attracted certain discourteously competent architectural men to the Office of Works, who have most of them passed on to the permanent staff. Such buildings as the new Money Order Office at Holloway and the Post Offices at Dudley and Torquay show that sufficient talent exists to carry out on sound traditional lines all except the very large Government buildings. These latter nearly always have been made the subject of competitions, in which private architects have joined.

Meanwhile the separation of maintenance, clerical, and purely structural work from architectural work might be carried further, but at the present time there is already a trend in that direction. For instance, those members of the permanent staff with the greatest architectural abilities are retained in London to prepare and carry out designs for new buildings and large alterations and additions.

I suggest the question as to whether the Office of Works is an expensive department, whose work could be more cheaply done by private architects, might be partly elucidated by the publication of details from both sides showing incomes, salaries, and hours of work of all parties involved.

MEDUS.

The R.I.B.A. Examinations and Official Architecture.

SIR,—I quite agree with your correspondent Mr. E. J. Dixon that the Institute examinations should possess a definite value, not only outside, but within the profession itself, so that they may prove a real asset to those who have passed them, in place of their present obscure value, especially to assistants.

But, as you, Sir, point out in your leading article of November 3, the question of obtaining this value is really bound up with the more important question of education, and while this is in its present chaotic condition it should be the aim of the Institute examiners to lead rather than to follow. The revised syllabus of the R.I.B.A. seems to imply that the examiners themselves are not quite certain what an architect ought to know, and so they offer a sporting chance to everyone, be he antiquary, scientist, or artist. But if this broadening of the examination net is to be obtained by merely widening the meshes, the result is not likely to be very successful.

I am reminded while on this subject of examinations that the Office of Works, whose architectural shortcomings the President of the R.I.B.A. has been recently at pains to point out, is recruited by an examination on very much the same lines as the present R.I.B.A. Final. No doubt the examination is a farce, as all such examinations must be, as a test of the ability to produce architecture, yet I cannot help thinking that the remarks of Mr. Stokes in reference to official architecture in general are not only a little unjust in criticism, but also perhaps rather short-sighted in policy.

Looking in particular at the architectural productions of the London County Council during the last ten years, they appear to me to show a standard of ability and taste in design and a unity of purpose which are not only above the general average of the profession, but which could not have been achieved—especially in the last particular—under any other conditions than those of a competent body of assistants working under an able and sympathetic chief. Had these same commissions been scattered broadcast over the profession we should probably have obtained a heterogeneous collection of buildings of all kinds, good, bad, and indifferent, instead of a school of design to which few can take serious exception. That official architecture has both its dangers and its limitations is most true, but that if properly controlled it can produce good work I think Mr. Riley's department has proved.

Mr. Stokes again objects that the work is costly; that whereas the outside practitioner can work for 5 per cent., the official departments want from 7 to 10 per cent. It seems to me that this simply proves that the outside profession is sadly underpaid, and not that the officials are overpaid.

E 2

As a matter of fact, we all know that if an architect does his duty by his work and pays his assistants a fair salary for their work he is in many cases underpaid on the 5 per cent. basis. It is only by managing his office in the most economical manner—that is, by employing the smallest possible number of assistants at the lowest possible salaries—that he can make it pay at all. Surely it would be better policy for us to work up to the official 10 per cent. than to drag them down to our 5 per cent.!

JOSEPH V. HIBBERT.

Architectural Examinations and the Preparation of Designs for Public Buildings.

SIR,—These ever-recurring subjects for discussion are both to the front just now. The moral which may be drawn from Professor Reginald Blomfield's article in the last number of the *Journal of the Royal Institute of British Architects* is that architectural examination is a necessary evil, more or less. In so vast a field as architecture it is difficult to test a man in a few days. If it were possible to spread the examination over several years, then it would be a thorough test. This is practically what is done in the Office of Works. A man of *prima facie* ability is engaged as an ordinary assistant. If he passes the test of actual office work for some time and shows designing ability, he is gradually put on work of increasing importance, and in time is engaged on the largest buildings.

The architectural staff was formerly selected by an open competitive examination, but owing to the want of designing ability in many of the men who passed this examination it was abolished, and the architectural work given to the men previously referred to who had been engaged as ordinary assistants, and proved their ability by years of office work under the direct supervision of the heads of departments. But the authorities deny the men, who have thus proved their ability, any official recognition, adequate payment, or possibility of promotion, because they did not enter by the abortive examination, which was abolished because it completely failed as a test of architectural ability, and reject all recommendations made by the architectural heads for the improvement of the position of the working staff.

It is not to be wondered that this has produced a state of what Lord Rosebery once called "honest dissatisfaction."

As a dissatisfied staff cannot be an efficient or economical working instrument, it is eminently desirable that the Commissioners of Works should put their house in order thoroughly and quickly.

EFFICIENCY.

Commissions and the R.I.B.A. Scale.

SIR,—In these days of strenuous effort on the part of the Royal Institute of British Architects to raise the status, education, and ability of its new members it is surely sad to find Fellows of the Institute accepting commissions at rates of remuneration under those of the Institute scale.

I enclose a newspaper cutting containing the report of a case in which the architect (who is a Fellow of the Royal Institute) sued for the balance of his remuneration, which had been mutually arranged at 3½ per cent. on the total cost of the work, a house costing 5,000l.

The client was found liable, but counter-claimed against the architect on account of "want of supervision and lack of skill." The counterclaim was upheld.

Were I an ordinary unsophisticated layman proposing to build a house I would mentally note the following—

- (1) That the fee of a F.R.I.B.A. would not exceed 3½ per cent.
- (2) That the employment of a F.R.I.B.A. would not ensure proper skill and supervision.

It would not then take me long to decide whether I should employ a F.R.I.B.A., a less-experienced, and presumably less skilful, member of the Institute, i.e., an Associate, or perhaps a Licentiate (who rejoices in a somewhat impressive title), or whether I should employ a builder, who would build me a "good, substantial, and well-built house, excellently fitted up with every modern convenience" (vide advertisement), and save the architect's fee.

The Council of the Royal Institute are

making excellent progress in the matter of stiffening up the examinations and generally raising the qualifications for admission to membership of the Institute. It would, I think, be wise to "stiffen up" the conditions under which architects would be allowed to practise under the title of F.R.I.B.A., as cases such as that I have cited are intolerable, and are not calculated to reassure the public as to the professional qualifications and methods of members of the Royal Institute of British Architects.

A set of simple by-laws would do it.

ASSOCIATE.

Stafford Library Competition.

SIR,—I have recently seen the conditions to competing architects in this competition, and I should like to say that, in my humble opinion, the Town Council of Stafford and their assessor, Mr. H. T. Hare, who, I understand, has drawn up these conditions, are most decidedly to be complimented. It is a pleasure almost unique to see such a reasonable, fair, and yet comprehensive set of "conditions."

Everything necessary is asked of competitors, and, what is the point, nothing which is unnecessary, thereby making the labour to competitors as light as possible.

In these days, when the promoters of open competitions so frequently, in quite small buildings, ask for elaborate drainage schemes, heating pipes, radiators, and ventilators, etc., indicating ¼-in. details, perspectives, an unnecessary number of elevations and sections, etc., to say nothing of reserving the right to altogether discard the assessor's award, and asking competitors to "quote" for a wholesome set of conditions as those compiled for this competition by Mr. Hare.

I think every architect who knows the amount of time and thought involved in preparing a set of competition drawings will join with me in expressing his hearty appreciation of the Stafford Town Council and Mr. Hare.

HENRY R. COLLINS.

The Arrangement of Our Museums.

SIR,—I was much interested in your article on "Museums" in your issue of October 27. I cordially endorse your views that museums should be more "understandable of the people" and more simply educational.

I have for some thirty years been collecting objects bearing upon the history of the "Folk." A popular Folk Museum would very soon fill half the Crystal Palace, and would be really enjoyed by even women and children. I do not think anyone yet knows the real educational value of a properly-arranged simple museum. Existing museums begin in the middle of the book! They leave out the first chapters.

EDWARD LOVETT.

A Building in the Adelphi.

SIR,—I was interested to see in your issue of November 10 your historical note as to the Society of Arts' building in John-street, Adelphi.

The wording, however, of Sir Henry Wood's remarks, as quoted by you, would almost lead one to suppose that the arches and subterranean roads were things of the past, but this, it may interest your readers to know, is very far from being the case.

There are no cows kept there now, it is true, though the present freeholder will remember their being kept in the arches; but, besides other things, there is still an enormous quantity of wine stored in them, and I think that there must be quite a hundred persons of one sort or another in daily employment in these lower regions of the Adelphi. The subterranean roadways are in continual use, and one, the most frequented, goes actually beneath my firm's drawing office. These roadways, however, are, and always have been, private property and are not public thoroughfares, though the public are allowed access to them.

Practically the whole of the Adelphi was underpinned, as stated, in the early seventies, and the arches made thoroughly secure.

My firm has superintended a great deal of work in alterations and additions to various properties in the Adelphi for our client, the freeholder of the estate; and we have had ample opportunities of testing the quality of the work of the brothers Adam

and of noting the excellence with which it was all carried out. There is still on the estate a great quantity of beautiful and valuable ceilings, mantelpieces, stoves, doors, mouldings, etc., which are a constant source of enjoyment, though unfortunately, owing to carelessness and indifference in days past, many very beautiful things have disappeared. The more experience one has of the work of the Adam brothers the more one is compelled to respect and admire it, and the thorough way in which they carried it out, even though their particular style may not happen to appeal alike to everyone.

ARTHUR B. HAYWARD,

Architect and Surveyor, Adelphi Estate.

Samuel Elliott & Sons, Ltd.

SIR,—We note in your last issue your mention that the above-named is the "old-established firm" of woodworkers. This is incorrect, inasmuch as the company only started business in October, 1902. We are the old original firm of joinery and moulding manufacturers, established upwards of forty years at Albert Wood Newbury.

For Elliott's Moulding and Joinery Company, Ltd.,
E. BUCKINGHAM, Managing Director.

INTERCOMMUNICATION COLUMN.

Cubic Space in Factories.

SIR,—I shall be obliged if any of your readers could inform me under what rule or regulation the restriction is placed by which the height above 12 ft. 6 in. is not included in calculating the cubic extent of factories and workshops providing the 250 ft. cube for every person employed.

MARYLEBONE.

Lychgates.

SIR,—I should be very grateful if you would kindly let me know of a few very fine specimens of lychgates as soon as possible, that I can take the necessary measurements and sketches at once.

REGINALD L. LLEWELLYN.

FIFTY YEARS AGO.

From the *Builder* of November 16, 1861.

Architectural Examinations and the Institute of British Architects.

It ought to be thoroughly understood at this time, but apparently it is not, that when the Council of the Royal Institute of British Architects is now doing is simply a response to the cry which had been often raised by younger members of the profession: "Give us the opportunity of showing that we have fully studied our profession and are fit and competent to practise it." We do not agree in opinion with those who would close the profession against all who had not made certain provisional studies and passed certain examinations. Such a restriction is an artificial profession, if it could be brought about—and we know very well it could not be—would be more harmful than useful; at this we have said for years, and we have given reasons for so saying. What proposed by the Council of the Institute, however, has, as our readers equally well know, our warmest concurrence. It is purely an educational movement, and pointing out to students the course of study to be pursued, and the sort of knowledge to be striven for, and affording them the opportunity of showing that they have pursued that course and acquired more than less that knowledge, is likely to effect great good. At present architectural education is very insufficiently attended to; the want of precise knowledge is often, in consequence, very strikingly apparent.

HUCKNALL TOWNARD'S SEWAGE.

New sewage disposal works have been erected at a cost of 8,954l., from the plans prepared Messrs. Sands & Walker, engineers, of Nottingham. The total capacity of the tanks is 350,000 gallons, which will be adequate for a population of 17,500. The contractor for the work was Mr. A. J. Cottle, of Sidmouth.

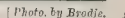
brief notices of the following architectural societies appear on p. 572: "Gloucestershire Architectural Association"; "Glasgow Architect-Craftsmen's Society."

Law Reports (p. 585) include: "Barnstable Building Dispute"; "Wallasey Building Dispute"; "Minter v. Waldstein."

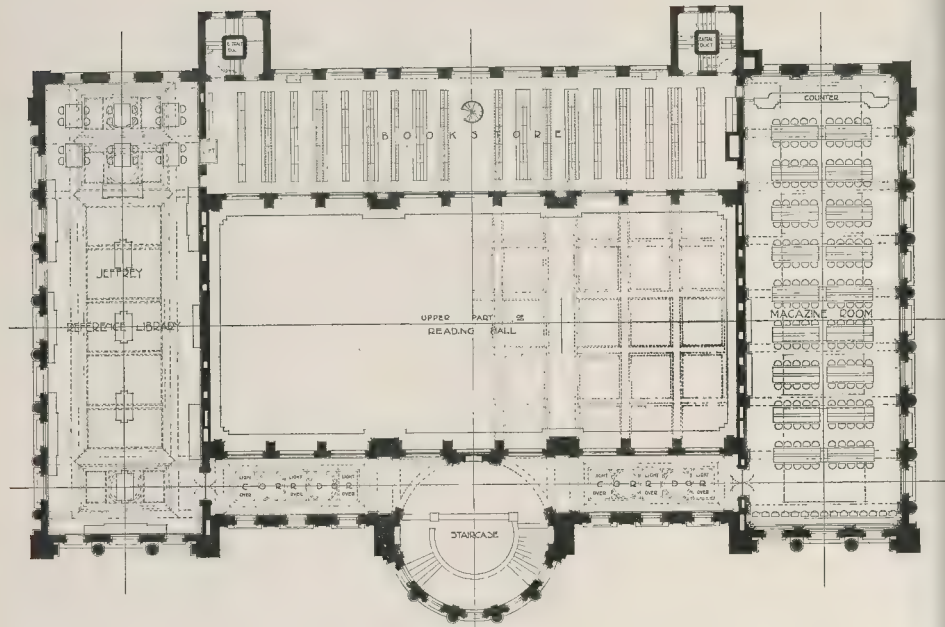
Battersea Polytechnic (Lectures on Illuminating Engineering).—Dr. W. J. Ettles on "Illumination and the Eye." 7.3 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. G. Gilmour on "Town Planning." 8 p.m.

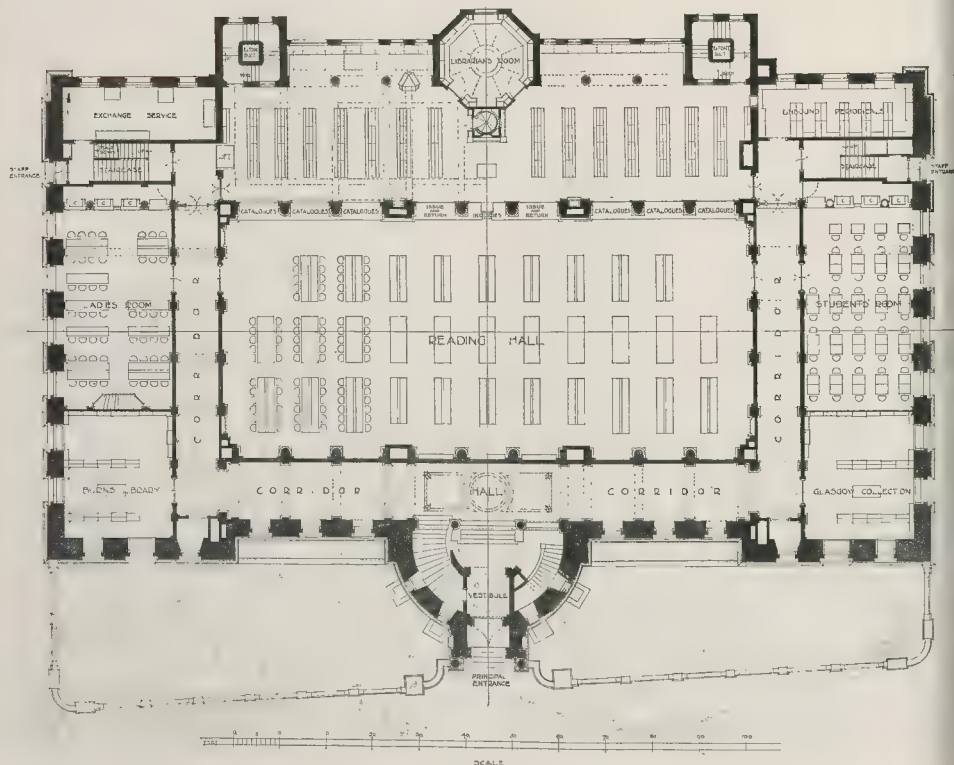
The plans show a building in which a fine architectural arrangement has been preserved without sacrifice of the public convenience, and while one might have liked to see the large reading-room definitely expressed on the exterior, the difficulty of so doing is obvious when the accommodation required on such a limited area is considered.



The New Mitchell Library, Glasgow.
Mr. W. B. Whittie, F.R.I.B.A., Architect.



Plan of First Floor.



The Mitchell Library, Glasgow. Ground Floor.

Mr. W. B. White, F.R.I.B.A., Architect.

The main reading-room is a well-proportioned room 113 ft. by 52 ft., and gives accommodation for 322 readers at thirty-one tables. Longinally it is divided into three principal bays massive piers, panelled and ornamented in inter, and each main bay is further divided into Ionic columns, which carry the entablature running round all four sides at a height of 26 ft. The ceiling is segmental in form, and is carried on the main piers with moulded and enriched springing from the entablature level and rising to a height of 44 ft. in the centre. The room is lighted entirely from above by glass panels between these ribs. The lower walls between these piers are panelled to a height of 6 ft. 6 in. in Italian walnut polished and dulled. Other furnishings and fittings in this room are of the same wood. The upper walls and ceiling are finished entirely in plaster and one's cement.

In the public corridors the walls are lined 6 in. high with Crestola marble in panels of bands of ribbed Greek Chippolino, and over the ceiling and the ceiling are nicely treated in plaster. To minimise the noise arising from the floor in the corridors, the floors are laid with rubber tiling in black and white squares.

In the ground floor the corridors give access to the rooms for ladies, for students, and for special collections. The ladies'-room and students'-room occupy positions north and south respectively of the reading-room, and are of similar size, 48 ft. 6 in. by 23 ft. Both are finished in French polished Tobacco mahogany, are differently treated in detail. The former is fitted for fifty readers at nine tables, and the latter for forty-one readers at individual tables. It is intended that only those with special tickets will be allowed to use the students'-room. Old Glasgow and the Burns rooms are each 6 ft. by 23 ft., and are finished and fitted in Austrian oak. The public staircase leading to the upper floor occupies the semi-circular projection which, surmounted by the dome, forms a prominent feature of the exterior, and the manner in which the wheeling flights of steps in the interior of the dome are treated is very interesting and successful. The whole of the prior stringers, balustrades, etc., are of Bath stone, while the steps are of white marble, so that a very rich and monumental effect is attained.

The upper floor corridor gives access to two large public rooms. On the north and occupies the whole length of the Berkeley-street front is the magazine-room, which is seated for 19 readers at nineteen tables. The furnishings of this room are of French polished Tobacco mahogany, the walls being decorated with fluted pilasters carrying an entablature, from which a segmental plaster ceiling springs. The room is top lit by glazed panels in the ceiling.

The other room provided on this floor is that containing the Jeffrey Reference Collection, and of similar dimensions and treatment to the magazine-room except that the furnishings are Austrian oak. Exhibition cases are arranged in part of this room, and the remainder furnished with tables for readers. The floors in all public rooms are laid with oak wood blocks of a variety of patterns, with borders of oak and ash. For the administrative department of the library and for the staff accommodation is provided principally on an intermediate floor between the ground and first floor, with separate staircases and entrances. The octagonal room on the ground floor behind the main service entrance is a workroom provided for the librarian in addition to his private room.

The system of cataloguing and book storage adopted will probably be considered, when judged from a modern library standard, to be the weakest point in the whole scheme, but regarding this we understand no alternative was allowed. The book catalogue system used in the old Miller-street building evidently commends itself to the authorities, and it is here stated and the books are stored as before, without any special precautions for their protection against fire. The books most used are arranged immediately behind the service entrance to the number of about 40,000. The remainder of the book storage is on four floors immediately over this, and in addition the upper part of the basement is devoted to this purpose. All the floors are connected by book stairs.

At present the collection of books numbers over 200,000, but storage for double that number is provided, so that the growth of the library for many years to come has been considered.

The bookcases throughout are of Tobacco mahogany French polished. The heating and ventilation of the public rooms is on the Plenum system, the air being thrown in high up in the rooms and extracted at the floor.

Extract shafts and fans are used. Rooms other than public ones are heated by steam radiators, as also are the corridors and book stacks.

Externally the building is faced with white Northumberland stone from the Blackpasture quarries, and is, if somewhat broken in outline, very successfully treated. It has a base of grey unpolished granite, and the dome, which forms the central feature and marks the entrance, is finished externally with copper.

Taken as a whole, the building is one that meets very well the claims of public convenience, staff control, and architectural arrangement, and is a notable addition to Glasgow architecture.

The following is a list of contractors engaged in the work:—

Mason and brick work—Messrs. P. & W. Anderson, Ltd., 64, Douglas-street, Glasgow. Wright work—Mr. John Cochran, 70, Dobie's-loan, Glasgow. Constructional steel work—Messrs. A. & J. Main & Co., Ltd., Postoffice, Glasgow. Plumber work—Messrs. James Ingleton & Co., 166, George-street, Glasgow. Slater work—Messrs. John McQuat & Son, 88, London-street, Glasgow. Patent roof cladding—Pennycook Patent Glazing Company, Ltd., 11, West Regent-street, Glasgow. Plaster work—Messrs. D. & J. McKinnis, Gilbert-street, Glasgow. Fireproof flooring—Columbian Fireproofing Company, Ltd., London. Marble, tile, and rubber work—Messrs. Galbraith & Winton, 185, St. Vincent-street, Glasgow. Electric lighting—Messrs. Allan, Arthur, & Ure, 192A, St. Vincent-street, Glasgow. Heating and ventilation—Messrs. Ashwell & Nashit, Ltd., Leicester. Fire alarm installation—Pearson Fire Alarm, Ltd., Redcross-street, London. Metal sashes—Messrs. Fred. Baby & Co., Ltd., Petershill-road, Glasgow. Wood-block flooring—The Scottish Block Flooring Company, 45, Hope-street, Glasgow. Painter work—Messrs. Macfarlane & Smith, 188, West Regent-street, Glasgow. Pneumatic tubes—The Lamson Pneumatic Tube Company, Ltd., London. Bookcases—Messrs. Wyllie & Lochhead,

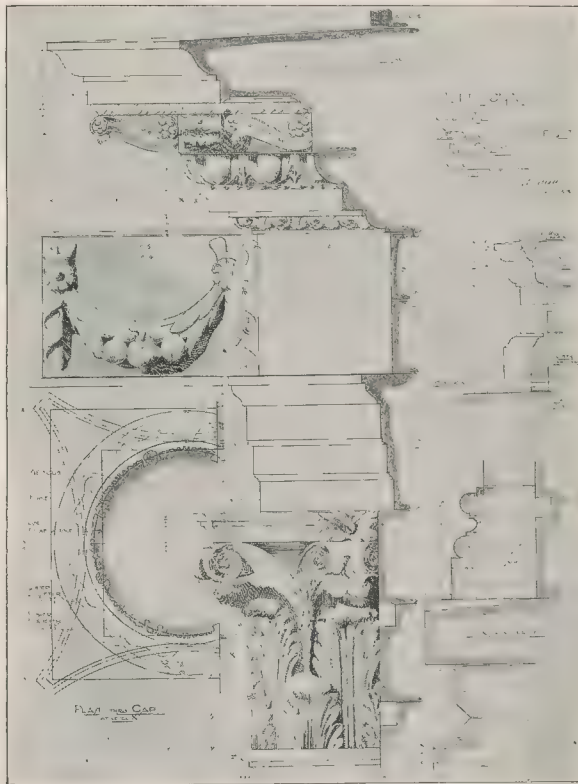
Ltd., 45, Buchanan-street, Glasgow. Fittings and furnishings—Mr. John Cochran, 70, Dobie's-loan, Glasgow. Lifts—Messrs. John Bennie, Ltd., 151, Moncrieff-street, Glasgow. Blackpasture stone—Messrs. Robertson, Ltd., Gainsburgh. Leaded glass work—Messrs. Wm. Meikle & Sons, 19, Wellington-street, Glasgow; Messrs. Oscar Peterson & Co., Blythwood-square, Glasgow. Electric fittings—Messrs. J. W. Singer & Sons, Frome, Somerset. Spital & Clark, 45, Newhall-hill, Birmingham. Adjustable fittings for shelves—Messrs. Tonks, Ltd., 12, Farringdon-avenue, London. Bronze figure over dome—Mr. Thos. J. Clapperton, 48A, Giebe-road, Chelsea. Clerk of works—Mr. Andrew M. Brown, Stanley House, Govan.

The Castle, Nottingham.

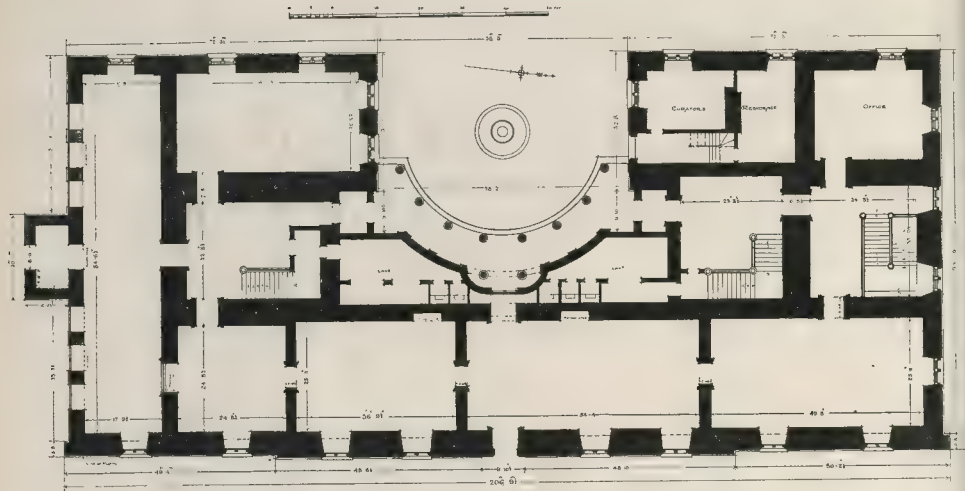
STANDING on a huge rocky spur of New Red-stone formation, the site of Nottingham Castle, by reason of its commanding position, has been occupied from early times by buildings erected to overlook the town. Historians mention the existence of a tower as early as the VIIIth century. A Norman fortress was erected by William Peverill, son of the Conqueror in 1086, the outer Ballium, with its bastions and gatehouse, being probably built about a century and a half later, and considerable additions were made in the XVth century. But after being variously occupied as Royal Palace, citadel, and prison, the greater portion of the old building was razed to the ground, and the present Renaissance edifice erected in 1674 by William Cavendish, first Duke of Newcastle.

Tradition has it that the architect was March, a Lincolnshire man, and in Walpole's "Anecdotes" mention is made of March (said to have been an assistant of Inigo Jones), "who designed additional buildings at Bolsover and Nottingham Castle." But in his will the Duke writes: "I have begun to carry up a considerable building at Nottingham Castle, which I earnestly desire may be finished according to the form and model by me laid and designed."

The treatment of the upper windows appears to confirm this inasmuch as the Duke was in the Netherlands for many years, fully accounting



Nottingham Castle: Measured Drawings by Mr. J. Woollatt, A.R.I.B.A.



Nottingham Castle: Ground Plan. Drawn by Mr. J. Woollatt, A.R.I.B.A.

for the peculiarities of design. In all probability March was clerk of works, or held some similar position, and may have been responsible for parts of the design.

Attention may be drawn to the strength and vigour of the design, its good proportion, and the skilful treatment of the surface texture, and the correct emphasis of the chief floor, showing the influence of an architecturally trained mind.

The mullions and transoms of the main windows and the inner circular heads of the upper windows were added when the building was restored in 1876. The top parapet is also modern and utterly out of sympathy with the rest of the design.

The effect of the richly ornamented cornice and the boldly treated scroll work of the upper windows, despite the fact that they cut into the architrave, combine to form a most picturesque and delightful treatment.

The enrichment is distinctly original and detail very refined, noticeably the architrave; this, added to the good proportion of the whole, tends to allay any feeling of restlessness which otherwise might be caused by the breaking of the entablature round the columns.

The refinement of detail, the originality and vigour of design, make it compare very favourably with its more magnificent neighbour, Wollaton Hall, only three miles distant, which had been in existence about ninety years when the Castle was erected.

The old gatehouse has recently been restored by Mr. T. G. Jackson, R.A.

JOHN WOOLLATT.

BOOK RECEIVED.

NOTES ON THE ART OF REMBRANDT. By C. J. Holmes, M.A. (London: Chatto & Windus. 7s. 6d. net.)

DESTRUCTIVE FIRE IN SHOE-LANE, E.C.

The fire which broke out on the morning of November 10 practically destroyed the premises of Messrs. Pontifex & Sons, engineers, copper-smiths, and brass-founders, in Plum Tree-court, and Shoe-lane, and greatly damaged the premises occupied by Messrs. Max Emanuel & Co., china-ware merchants, and Messrs. Hill & Co., engravers and etchers, as well as the Farringdon Engineering Works; the damage is computed at some 30,000l. The premises of Messrs. Pontifex & Sons (formerly Pontifex, Son, & Wood) stand on the site of, and at one time incorporated, the Holborn, or Oldbourne, Hall, cited by Stow as "now letten out into tenements." In Wilkinson's *Londina Illustrata* are drawings of the carved fireplace and mantelpiece in the chief room, and of the exterior of the Hall, with the ceiling dated 1617, drawn and engraved by Banks in 1823.

ARCHITECTURAL SOCIETIES.

Bristol Society of Architects.

A meeting of the Bristol Society of Architects was held on the evening of the 8th inst. at the Fine Arts Academy, Clifton. It being the opening night of the winter session a good company assembled at a conversazione on the invitation of the President (Mr. J. Foster Wood, F.R.I.B.A.). On the walls of the central gallery was hung a very interesting collection of architectural studies and travelling sketches. Many of these were dated about 1860, having been made by the late Mr. Joseph Wood, the father of the President. Other contributors were Mr. G. C. Awdry and Mr. W. V. Gough. The drawings were closely examined, and very much admired by those present. Refreshments were served during the evening, and at the conclusion, on the motion of Mr. Mowbray Green, seconded by Mr. R. C. James, a hearty vote of thanks was accorded to the President.

Gloucestershire Architectural Association.

A meeting of the Gloucestershire Architectural Association was held recently at the Municipal Art Gallery, Cheltenham, the President (Mr. Walter B. Wood) being in the chair. Among those present were Messrs. H. W. Chatters, S. H. Healing, T. Overbury, R. Phillips, A. L. Iredale, D. R. Lyne, H. F. Trew, S. W. Thurston, and H. S. Davis. The extensive collection of architectural books at the Cheltenham Municipal Library was displayed for the inspection of members, and lists prepared by the Librarian were distributed. During the evening a paper was read by Mr. William Jones, the Librarian, who is an hon. member of the Association, entitled "A Talk upon Books on Architecture." The meeting closed with a hearty vote of thanks both to Mr. Jones and the Library Committee, proposed by the President and supported by Messrs. Chatters and Overbury.

Glasgow Technical College Architectural Craftsmen's Society.

At a recent meeting of this Society, Mr. James S. Boyd in the chair, papers were read dealing with the construction of a country house in stone, brick, or concrete.

Mr. Gilchrist, in his paper, referred to the abundance of good freestone, its adaptability to architectural treatment, both structurally and ornamentally, its great durability, and, from a hygienic point of view, the greater comfort it afforded its inhabitants. Brick houses were fully dealt with and numerous examples given, both ancient and modern, proving its great adaptability for domestic buildings, either cottage or mansion.

Mr. Park said that the advantages of con-

crete construction were its great mobility; it could be adapted to every shape and form of structure; and its great strength and fireproof qualities, even in thin walls, made for economy, both in space and material.

The lecturer described several methods of building, both *in situ* and in blocks. A discussion followed.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White (Chairman) presiding.

LOANS.—A loan of 6,316l. is to be made to the Islington Borough Council for electricity undertaking. The Stepney Borough Council is also to receive a loan of 2,500l. for electricity meters.

TRAMWAYS.—The matter of the tramways from Marble Arch to Cricklewood was adjourned.

SCHOOL.—The Essendine-road School, Paddington, has been enlarged to provide additional accommodation for forty physically defective children.

COUNTER'S-CREEK SEWER.—It is proposed to construct a side-entrance and manhole on this sewer between King's-road, Chelsea, and the Lots-road pumping-station, and also two manholes on the King's-road branch of the sewer, between Millman-street and Ashburnham-road, Chelsea.

VICTORIA EMBANKMENT GARDENS.—Owing to various complaints received by the Council on the lack of convenience accommodation in this vicinity, it is proposed to erect conveniences at the gardens, upon a site adjoining Hungerford House, and tenders are to be invited for that purpose.

WHITE HART-LANE ESTATE.—Eight new cottages are to be erected on this estate at an estimated cost of 1,627l. Six of the cottages will comprise three rooms and a scullery, and two of them four rooms and a scullery.

THEATRES AND MUSIC-HALLS.—The following drawings have been approved by the Committee:—

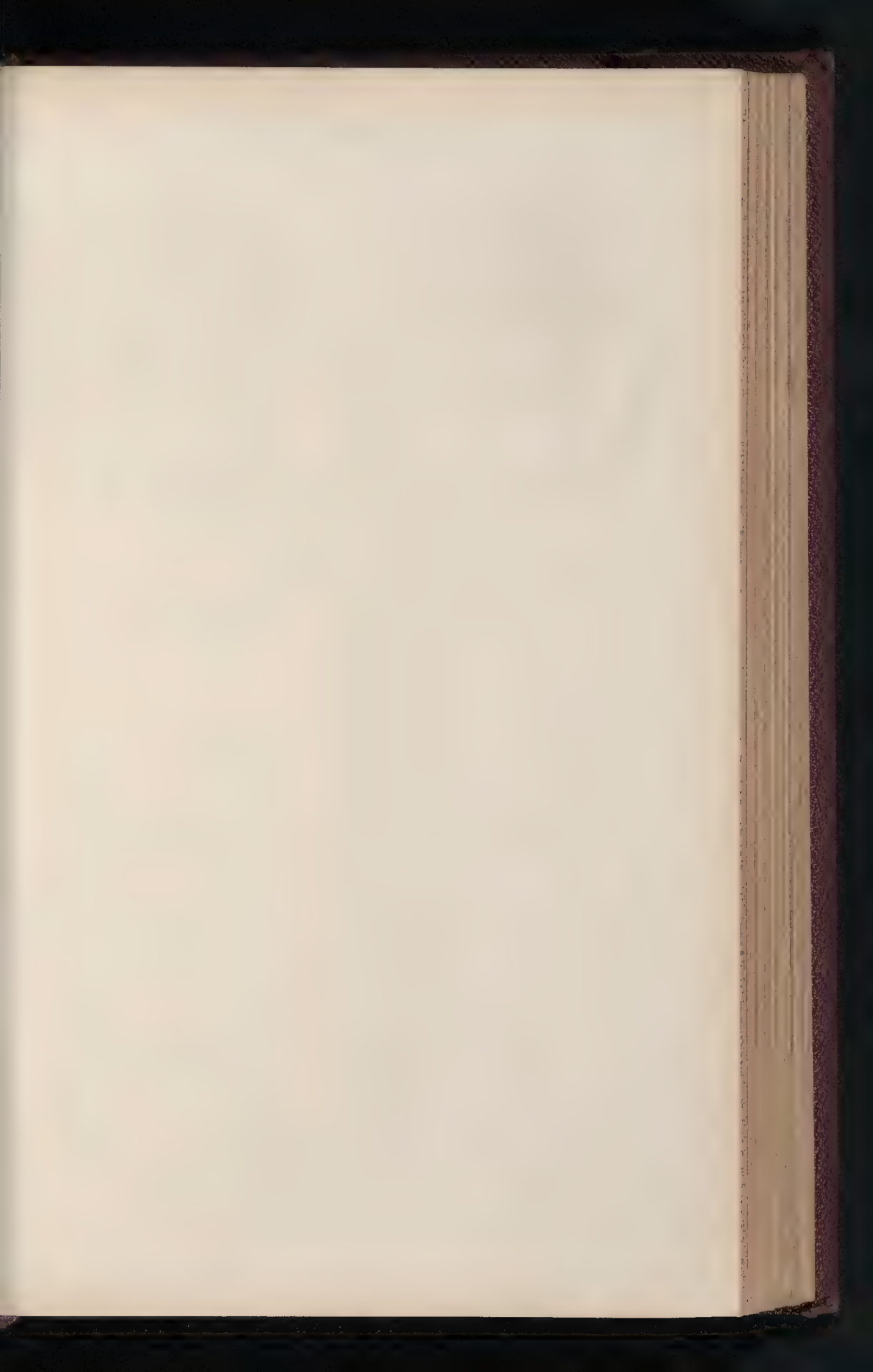
Adelphi Theatre, Strand—provision of a teak partition and door in the orchestra enclosure.

London Coliseum—new rooms to be used as offices.

London Opera House—additional exit accommodation from two large rooms at the back of the stage and escape from the flies on the o.p. side.

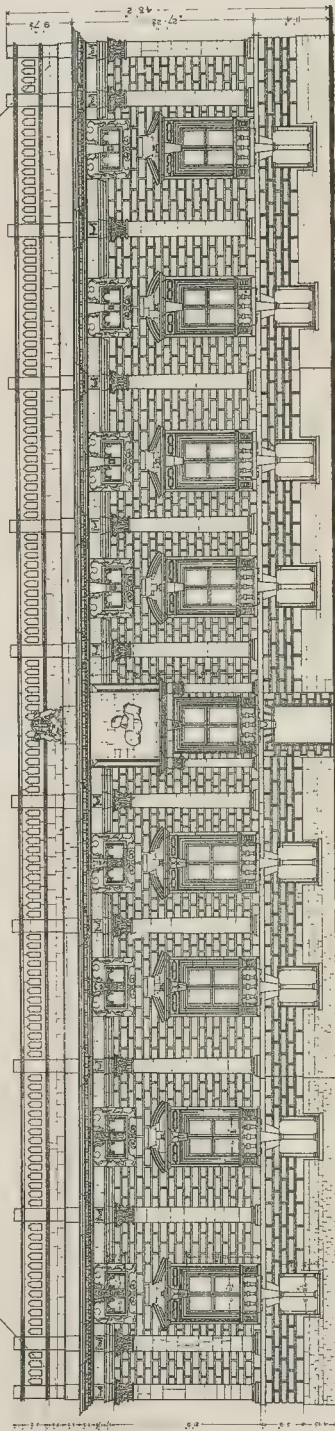
Surrey Vaudeville Theatre, Blackfriars-road—installation of a stage distribution-board.

CINEMA THEATRE.—A new cinematograph hall is to be erected at 134, Stratford High-road, and drawings have been approved for that purpose.

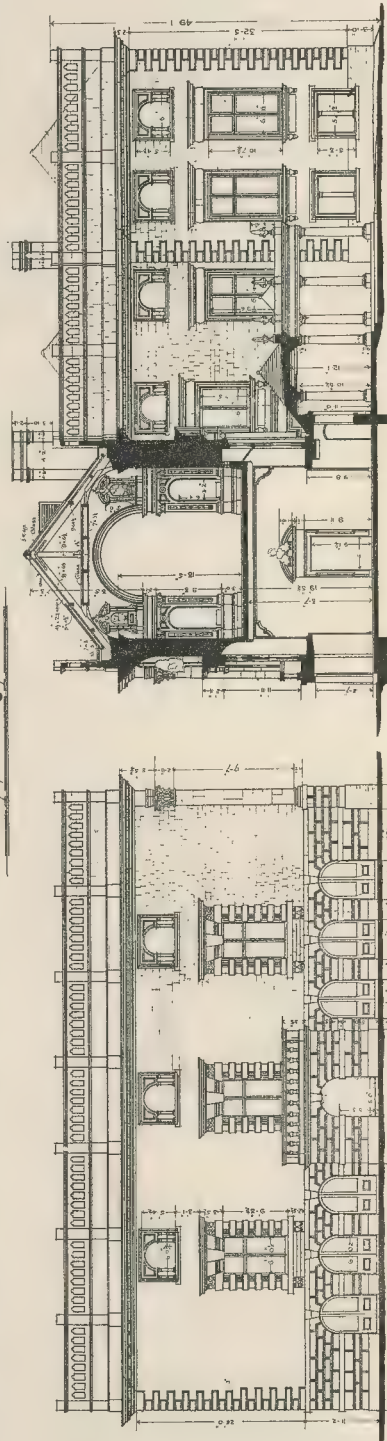


THE BUILDER, NOVEMBER 17, 1911.

The Castle, Nottingham.



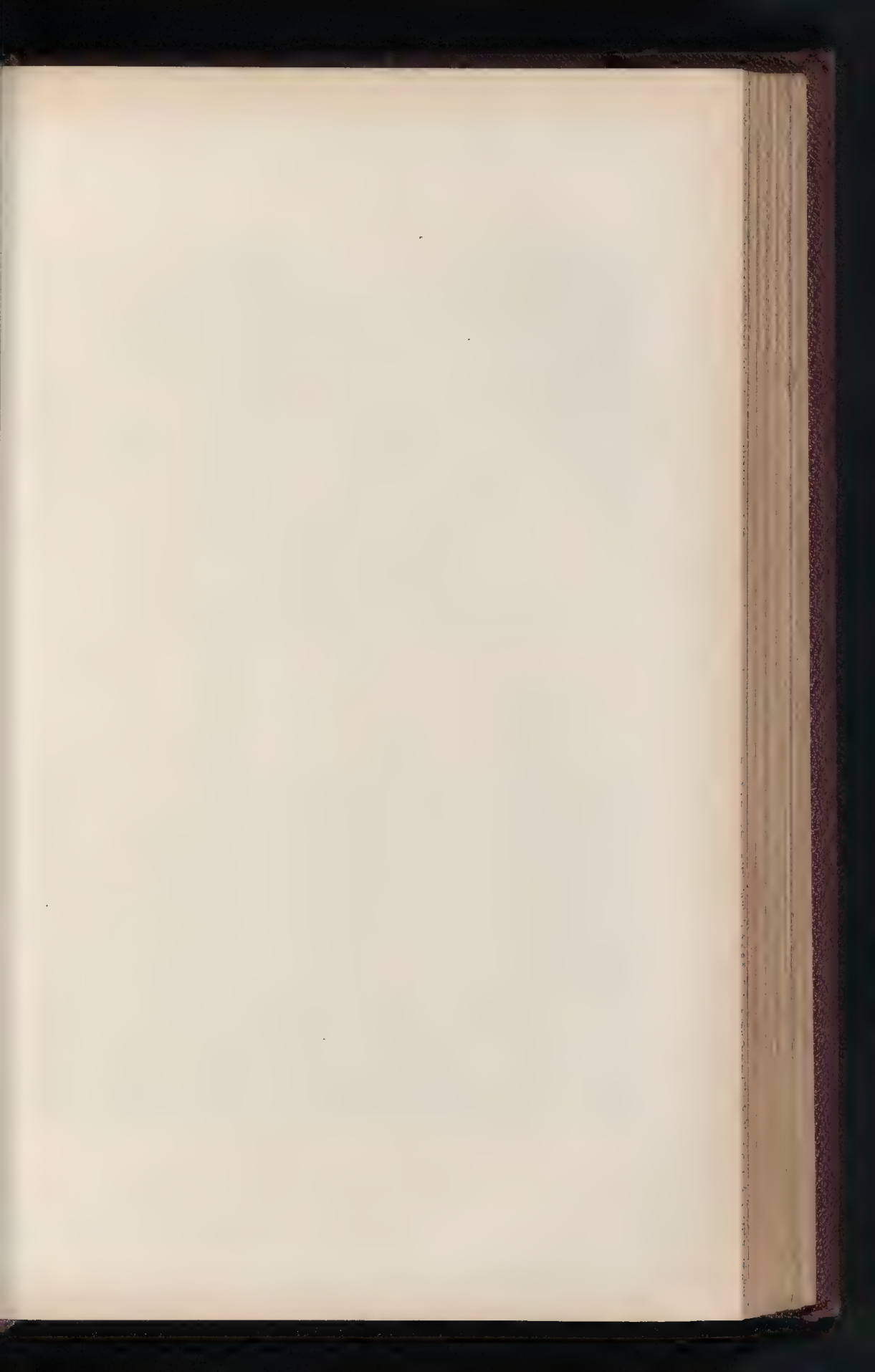
EAST FRONT.



SOUTH FRONT.

SECTION.

John Wardle
- August 1908.



THE BUILDER, NOVEMBER 17, 1911.



THE MITCHELL LIBRARY, GLASGOW: THE MAGAZINE ROOM.—MR. WM. E. WHITE, F.R.I.B.A., ARCHITECT.
Smyth & Co., Ltd., Printers, 4 & 5 EastHadding St., E.J.

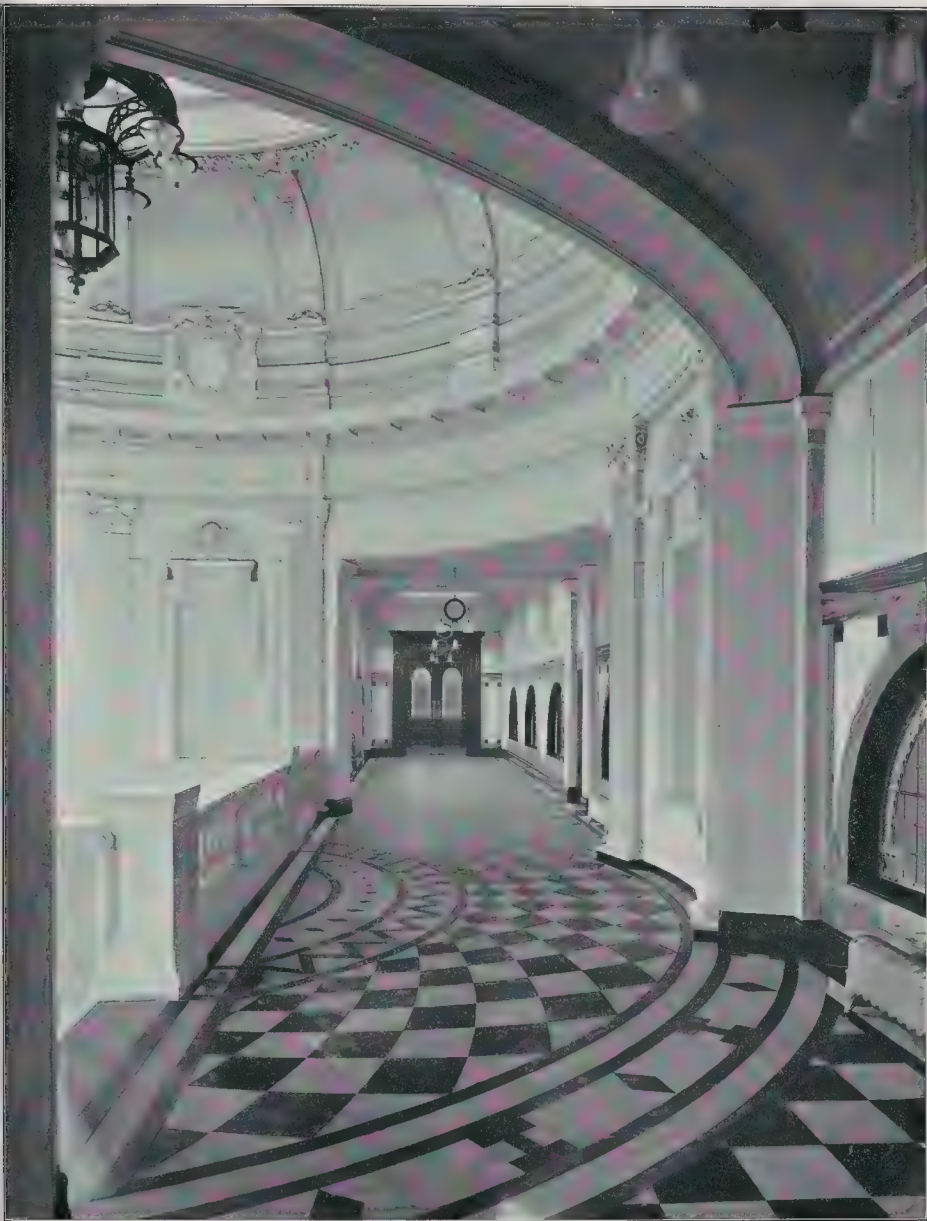




Sprague & Co., Ltd., Printers, 4 & 5 Bait Harding St. E.C.

THE MITCHELL LIBRARY, GLASGOW: THE PRINCIPAL STAIRCASE

MR. WM. B. WHITIE, F.R.I.B.A., ARCHITECT.



Sprague & Co., Ltd., Printers, 48 & 5 East Harding St. E.C.

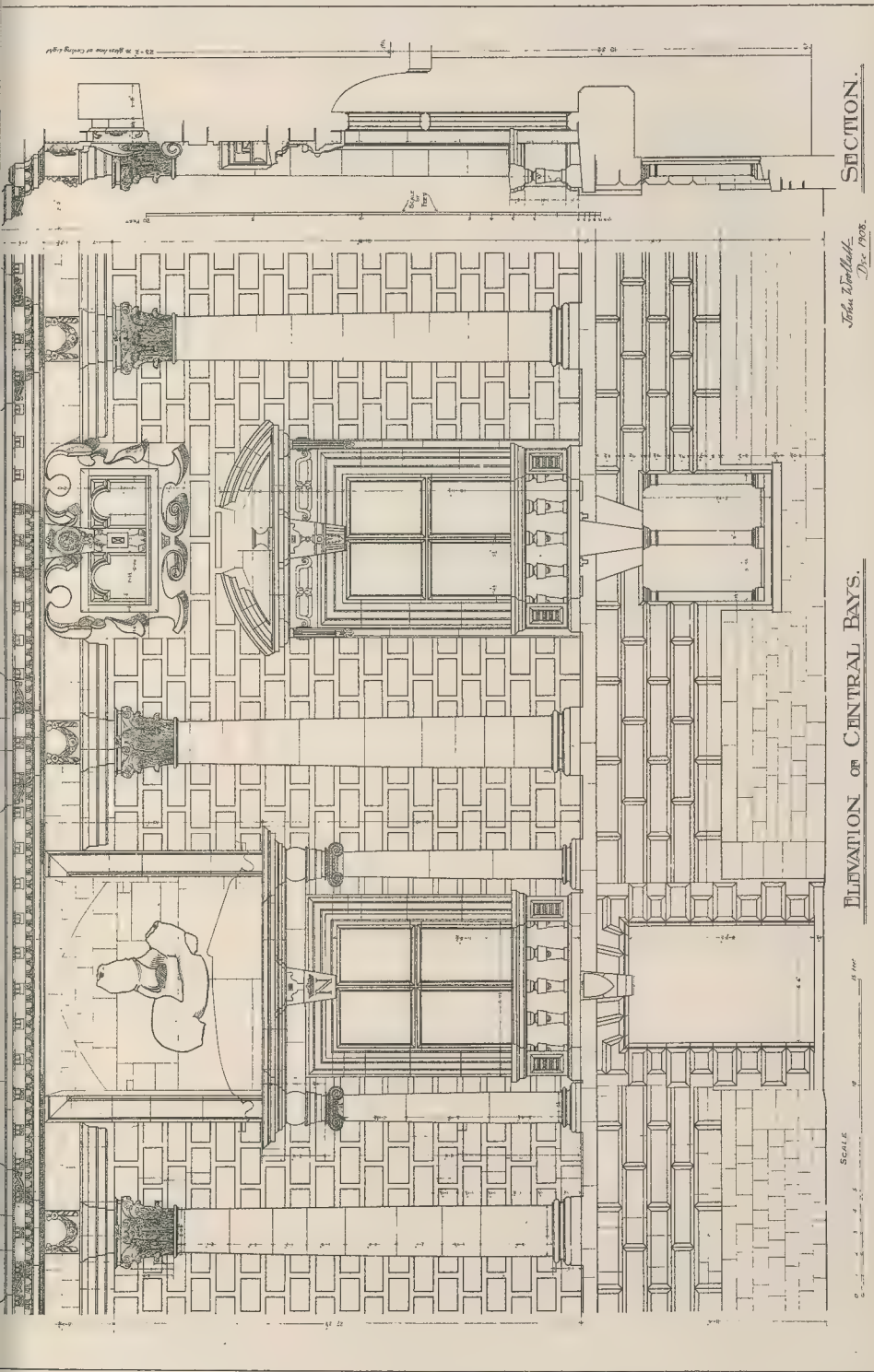
THE MITCHELL LIBRARY, GLASGOW: THE FIRST FLOOR CORRIDOR.

MR. WM. B. WHITIE, F.R.I.B.A., ARCHITECT.



Stanger & Co., Ltd., Printers, 145 & 147, Strand, London, W.C.

THE MITCHELL LIBRARY, GLASGOW: THE READING HALL.—MR. Wm. B. WHITE, F.R.I.B.A., ARCHITECT.



SECTION.

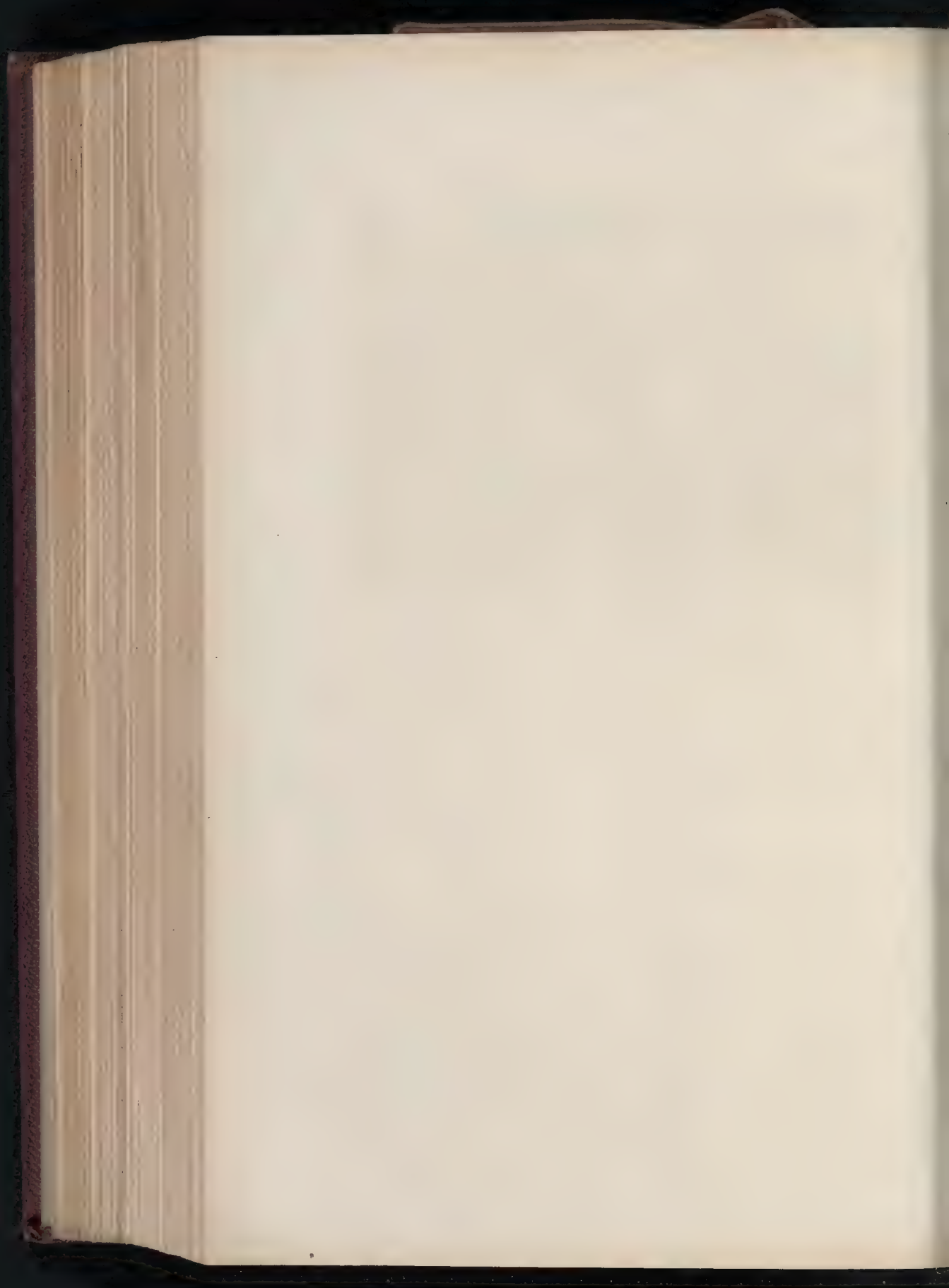
John Woodlatt.
Dec 1898.

PHOTOGRAPHED BY MR. J. H. B. 455 EAST AND NO STREET, ST. LOUIS, MO.

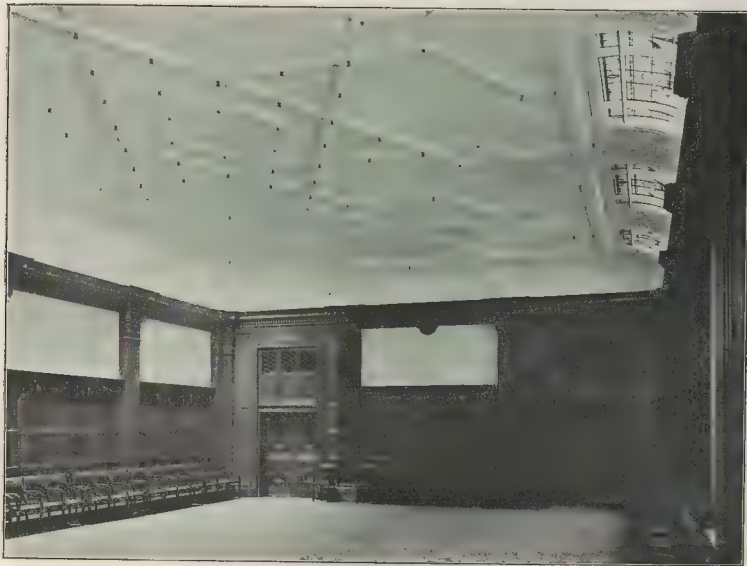
ELEVATION OF CENTRAL BAYS.

MEASURED DRAWING BY MR. JOHN WOOLLATT, A.R.I.B.A.

SCALE
0 1 2 3 4 5 6 7 8 9 10
1" = 10'



MONTHLY REVIEW *of* ENGINEERING.



The Fyvie Hall in the Polytechnic.

THE REGENT-STREET POLYTECHNIC.

Introduction.

On the west side of Upper Regent-street is a building familiar to middle-aged people in their youthful days as that known as the Royal Polytechnic. Founded in 1838 for the exhibition of studies in the Arts and Practical Science, especially in connexion with agriculture, manufactures, and industry, the institution was so much appreciated as to call for enlargement of the building in 1848.

The accommodation then provided for an exhibition of mechanical and other models was divided into several rooms, and there were a hall devoted to manufacturing processes, a lecture hall, and the great hall. The latter, lighted from the roof, contained models and designs, for many years the floor was mainly occupied by two canals with the water area of 100 sq. ft. The canals afforded appropriate facilities for the exhibition of models representing a dockyard, locks, water-wheels, and boats, while at the west end was a tank, 14 ft. deep, over which hung a large diving bell. This appliance was one of the chief attractions of the Polytechnic at the time to which we refer, but the institution is probably best remembered as the home of Pepper's Ghost.

It is not quite fair that the Royal Polytechnic should be chiefly associated with its popular attractions, because a great deal of useful work was done, including courses of lectures and tuition in various subjects.

After the fire of 1881 the building was sold to Mr. Quintin Hogg, by whom the Polytechnic was founded on the lines still retained.

Successive developments have involved additions to the building from time to time, and at last, owing to the continued extension of the departments for technical instruction, it became necessary to remodel the structure.

The cost of reconstruction has amounted to £100,000, including contributions as a memorial to King Edward VII. to the extent

of 50,000£, among the latter being the special gift of 30,000£, by Lord Leith of Fyvie. The idea of making the building a memorial to King Edward has received the sanction of the King, and the fact is suitably recorded by a handsome marble tablet in the main entrance hall.

The whole of the work, with the exception of the Regent-street facade, which was placed in the hands of the land estate architect, Mr. F. T. Verity, was executed to the

designs and under the superintendence of Mr. George A. Mitchell, A.R.I.B.A., the Director of the Day Department of the Polytechnic. The contractors were Messrs. Holloway Bros. (London), Ltd., of Belvedere-road, S.E.

General Description of Building.

The visitor inspecting the new house of the Polytechnic will probably find it difficult to distinguish between the old and new

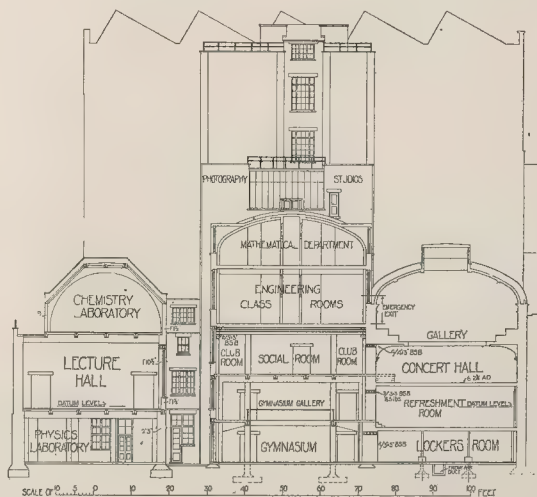


Fig. 1. Section Parallel to Regent-street.

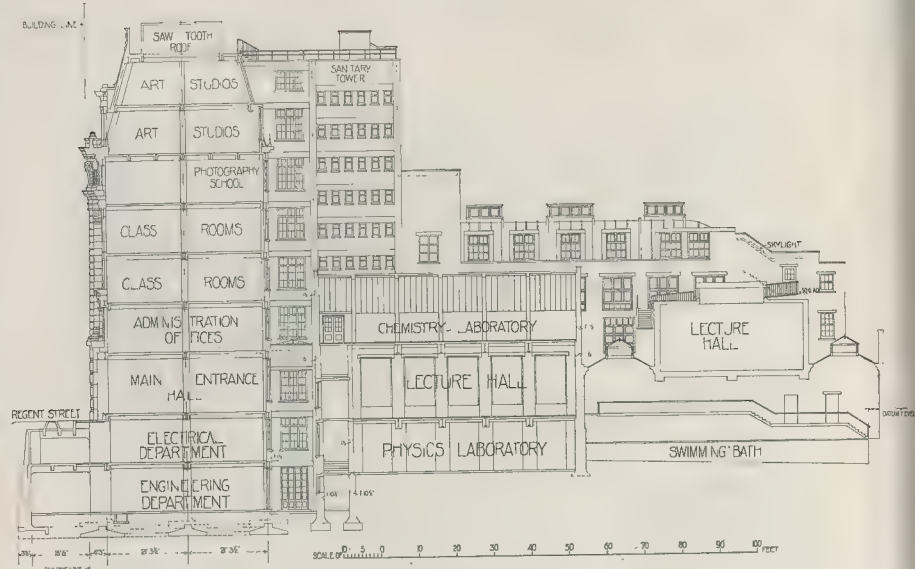


Fig. 2. Longitudinal Section.

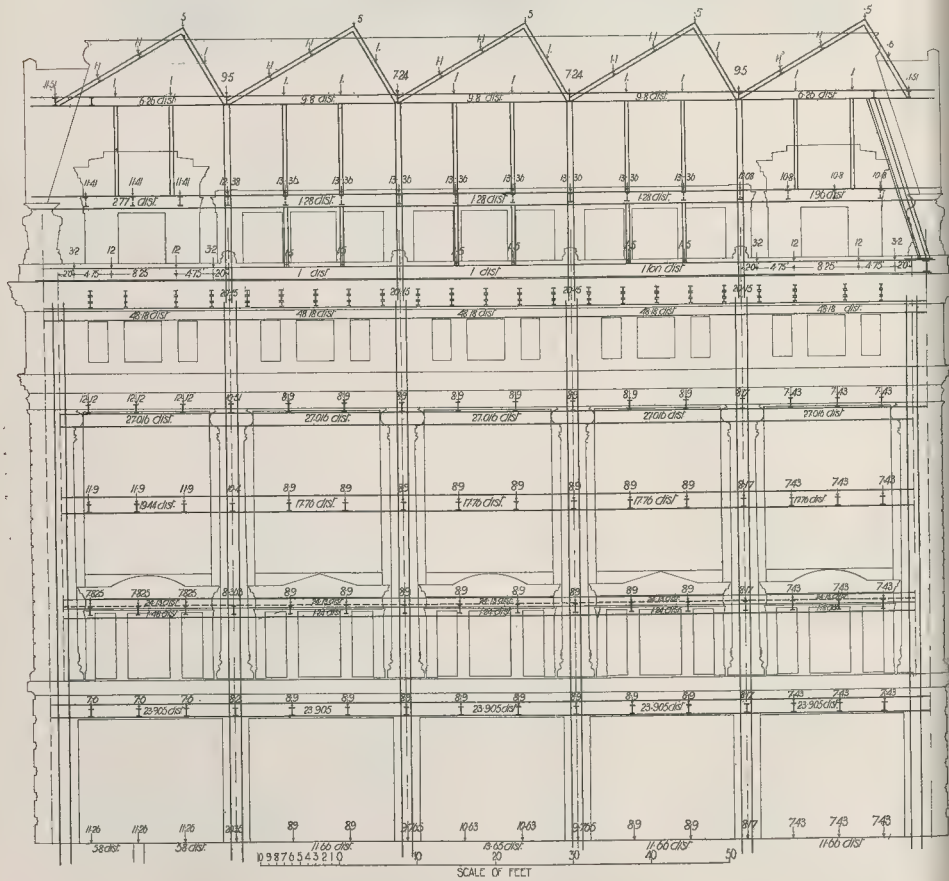


Fig. 3. Steelwork to Regent-street Front.

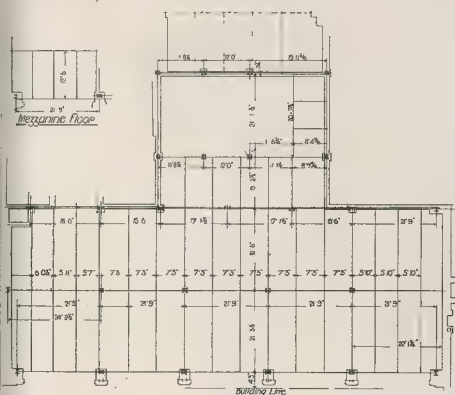


Fig. 4. Basement Plan showing Steelwork in Ground Floor.

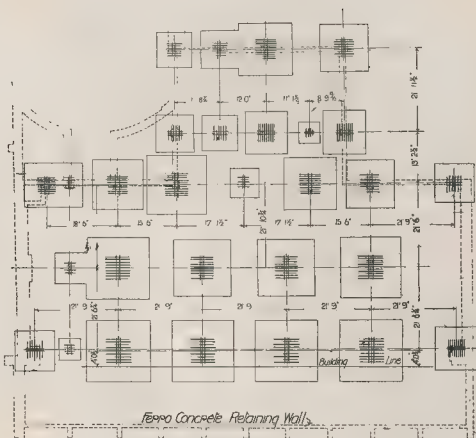


Fig. 5. Plan of Grillage in Front Portion of Building.

ions of the building, although here and there some apartments are clearly to be traced as the work of bygone architects. As a whole, however, the general impression to be gathered is that of a new building, the greater part of the work being new, and what is old has been skillfully remodelled and blended with the recent construction.

The front portion of the building has a depth of 118 ft. long on Regent-street and extends back for a distance of 82 ft., the basement and sub-basement stories extending 19 ft. beyond the building line below street pavement. Ample light is provided by means of pavement lights supplied by the British Luxfer Prism Syndicate, Ltd., Finsbury. This part includes nine stories in all as follows:—

Description.	Height.	Height Below or Above Ordnance Datum.
	Ft. In.	Ft. In.
Basement	13 0	24 6 B.D.
Sub-basement	13 0	11 6 B.D.
Ground floor	16 0	1 6 A.D.
First floor	13 0	30 6 A.D.
Second floor	13 0	43 6 A.D.
Third floor	13 0	56 6 A.D.
Fourth floor	13 0	69 6 A.D.
Fifth floor	13 0	82 6 A.D.
Sixth floor	13 0	95 0 A.D.

Above the main roof a range of five saw-tooth roofs give north light to the art studios on the sixth story. The foundation level is 6 ft. 6 in. below the sub-basement

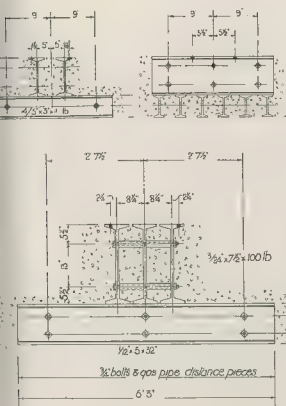


Fig. 6. Foundation Grillage.

floor, and the total height of the building is 137 ft., measured from foundations to the top of the saw-tooth roofs. All this part of the building is new throughout.

The back portion of the building is 136 ft. wide over all and extends back for a distance of 126 ft. Here are situated various large halls for concerts, lectures, and other purposes, and affording accommodation for the swimming-bath and gymnasium. Some of the halls are lighted from the top, and therefore limit the height of the building in certain parts. The back portion may be roughly stated as being equal to four stories high, or about 80 ft. maximum height above foundation level.

The total area covered is approximately 30,000 sq. ft., and the contents of the building about 2,000,000 cubic ft.

Figs. 1 and 2 are respectively transverse and longitudinal sections, the former being on a line through the front and back portions of the premises, and the latter on a line parallel to and looking towards Regent-street.

These two drawings will enable the reader to gather an impression, although by no means a complete one, of the accommodation provided for the valuable work conducted at the Polytechnic.

Referring to Fig. 1, and commencing at the left-hand bottom corner, we find in the front portion:—

- Sub-basement—Engineering department.
- Basement—Electrical department.
- Ground floor—Main entrance hall.
- First floor—Administration offices.
- Second floor—Classrooms.
- Third floor—Classrooms.
- Fourth floor—Photography school.
- Fifth floor—Art studios.
- Sixth floor—Art studios.

Behind these departments is the main staircase and lift well, and behind them a sanitary tower, with ample lavatory accommodation of every kind on each floor.

The back portion of the building on the

same line comprises:—Physics laboratory and swimming-bath, approximately at basement level, two lecture halls at ground-floor level, and chemistry laboratory at first-floor level.

Turning now to Fig. 2, we have, at the left-hand cross-sections of the physics laboratory, lecture hall and chemistry laboratory; in the middle, sections of the gymnasium, social-room, with a range of clubrooms on either side, engineering classrooms, the mathematical department, and photography studios; and at the right hand, the locker and refreshment rooms, with the

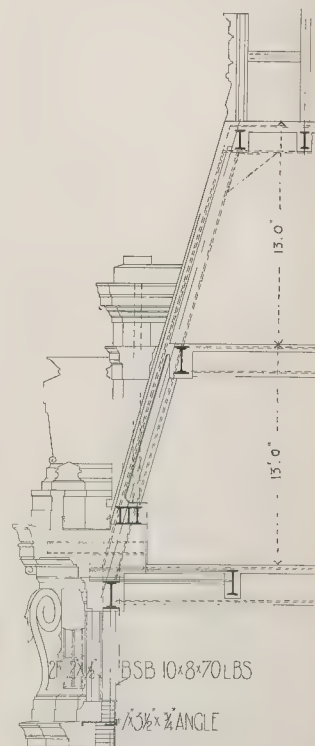


Fig. 7. Section showing Steelwork in Main Cornice, Mansard Roof, and Parapet.

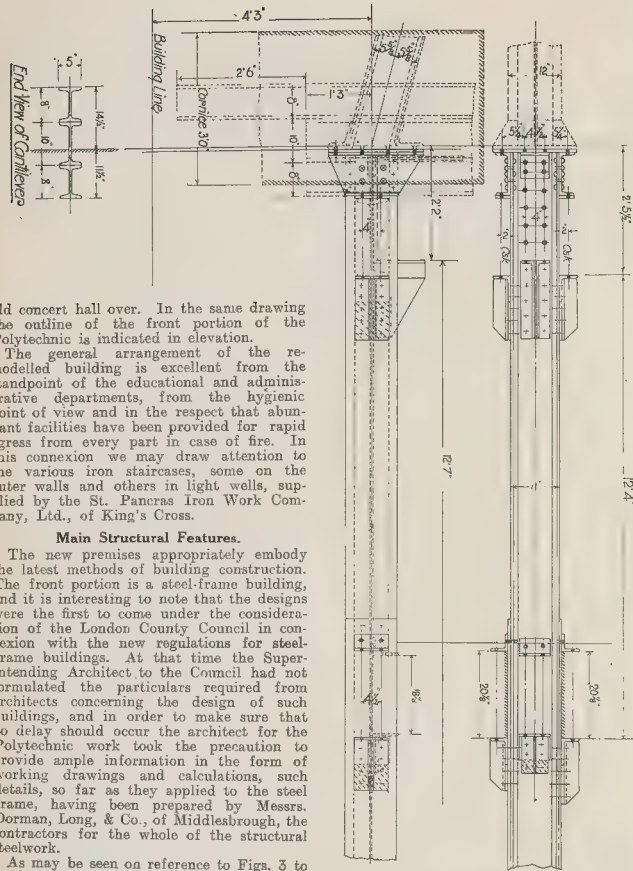


Fig. 8. Stanchions and Cantilever Support for Main Cornice.

old concert hall over. In the same drawing the outline of the front portion of the Polytechnic is indicated in elevation.

The general arrangement of the remodelled building is excellent from the standpoint of the educational and administrative departments, from the hygienic point of view and in the respect that abundant facilities have been provided for rapid egress from every part in case of fire. In this connexion we may draw attention to the various iron staircases, some on the outer walls and others in light wells, supplied by the St. Pancras Iron Work Company, Ltd., of King's Cross.

Main Structural Features.

The new premises appropriately embody the latest methods of building construction. The front portion is a steel-frame building, and it is interesting to note that the designs were the first to come under the consideration of the London County Council in connexion with the new regulations for steel-frame buildings. At that time the Superintending Architect to the Council had not formulated the particulars required from architects concerning the design of such buildings, and in order to make sure that no delay should occur the architect for the Polytechnic work took the precaution to provide ample information in the form of working drawings and calculations, such details, so far as they applied to the steel frame, having been prepared by Messrs. Dorman, Long, & Co., of Middlesbrough, the contractors for the whole of the structural steelwork.

As may be seen on reference to Figs. 3 to 8, the skeleton is a complete and well-connected structure in itself. The floors and roofs are completed by ferro-concrete (Hambro) panels, and the enclosing walls are of brick or stone, reduced in thickness as permitted by the new regulations, and as dictated by architectural requirements.

In consequence of rebuilding operations it was necessary to underpin the party walls on each side and to underpin the back and other walls on the site of the institution itself.

Steel Construction.

Fig. 3 is a diagram of the steel framing in the front walls and is typical of the framework throughout the front portion of the building. The same drawing gives the load in tons on each member of the steel frame, and indicates in thin lines the steel lines of the stone front.

Fig. 4 serves the purpose of illustrating the arrangement of the stanchions, girders, and joists incorporated in the skeleton. This drawing is a plan showing the beams in the ground floor, and may be taken as typical of all the floors above as far as the disposition of the members is concerned.

In the main portion of the building the stanchions are in three rows parallel to the street, spaced about 21 ft. 3½ in. and 21 ft. 6 in., the spacing of the columns in each row ranging from 15 ft. 6 in. up to 24 ft. 2½ in., according to requirements.

The floor bays are divided up into panels from 5 ft. 7 in. to 7 ft. 3 in. wide by 21 ft. 3½ in. and 21 ft. 6 in. long, as governed by the stanchion spacing.

The projecting portion of the new building is occupied by stair and lift wells and the sanitary tower previously mentioned.

Fig. 5 is a general plan of the steel grill-

ages for the stanchions, this plan corresponding with that in Fig. 4. In most cases it will be observed that each stanchion has a separate grillage foundation constructed upon a concrete foundation block and embedded in concrete for rust protection. There are, however, a few grillages where the concrete blocks unite owing to the relatively close spacing of the stanchions. Fig. 5 also indicates the outlines of the ferro-concrete retaining wall described under another head.

Fig. 6 contains details of typical grillages, one of the smallest and one of the largest, the latter designed for the load of 500 tons. The small grillage comprises four 5-in. by 3-in. by 2-ft. 3-in. I-bars in the lower tier, and two 8-in. by 4-in. by 2-ft. 3-in. I-bars in the upper tier, upon which the stanchion bases are seated.

The large grillage illustrated comprises eleven 12-in. by 5-in. by 6-ft. 3-in. I-bars in the lower tier, and three 24-in. by 7½-in. by 6-ft. 6-in. I-bars in the upper tier. All the bars are connected by screwed ties with distance pieces.

The concrete foundation blocks range from 5 ft. 6 in. to 16 ft. 9 in. square.

Fig. 7, reproduced from one of the architect's drawings, shows some particularly interesting features of the steel construction. The heavy stone cornice of the Regent-street front is supported by cantilevers with the projection of 4 ft. 3 in. beyond the centre line of the stanchions, which also carry brackets for heavy girders and from their cap rise the sloping struts of the Mansard roof. This is surmounted by a range of saw-

tooth roofs and a steel-framed parapet as shown.

Fig. 8 represents part of a front stanchion from fourth to fifth floor levels, and includes full details of the connexions, bracket for girder, cantilever support for cornice, and Mansard roof inclined strut. As shown in the detail, each cantilever is formed of the I-bars, two 8 in. deep and one 10 in. deep.

In succeeding articles we propose to give further structural notes and particulars relative to the engineering equipment of the Polytechnic building.

FIREPROOFING IN AMERICA.

The following is an abstract of a paper by Mr. Richard L. Humphrey, of Philadelphia, President of the National Association of Cement Users, read at the nineteenth ordinary general meeting of the Concrete Institute, held at Denison House, Westminster, S.W., on October 26:—

"America has, as you all know, the proud distinction, if you wish to put it in that way, of having the greatest fire losses in the world. The losses in America are enormous—nearly ten times the average of Europe. It would seem, therefore, that it was rather incongruous for America to come and talk to a country that is particularly low in fire losses on the subject of fireproofing.

But I think if you bear with me a minute you will see that perhaps the very fact that we have such enormous losses in America has led us to study this subject of fireproofing and fire prevention, and it has been a necessity to find out ways and means to prevent this enormous annual destruction of building materials by fire.

I find that in America we build, under our rather poor building laws, buildings of a low fire resistance, and equip our fire departments with magnificent fire-fighting appliances, high pressure water systems, so that the country is subjected to a great annual tax for the maintenance of this expensive fire-fighting system.

The annual losses are not by any means represented by the annual destruction of property. In addition to the destruction of property and building materials, there is the annual tax that is necessary for the upkeep of the fire-protection service, and then the additional tax that comes from the very high rates of insurance; so that, year by year, the total annual losses from fire, which I believe are entirely preventable, are represented by a great deal more than the two or three dollars per capita which is merely the value of the property destroyed.

We feel in America that where the question of the concentration of the resources is receiving so much careful attention it is of the utmost importance that we should study the conservation of our building materials; so that I think now generally throughout America there is a tendency to revise the building laws for the purpose of ensuring the erection of better structures. But, of course, it is impossible to make those laws in a large measure retroactive, and there must necessarily exist for many years to come buildings which at best can only be described as tinder-boxes.

Of course, in America great conflagrations have occurred. The one in Chicago was perhaps only second to that in San Francisco, but in Boston in 1872 and Baltimore in 1904 conflagrations of great size, which destroyed property worth millions of dollars, occurred, but were only small in comparison with the large areas of Chicago and San Francisco. In Baltimore the fire-fighting service from Philadelphia, New York, and Washington were practically powerless because in the extreme cold weather which prevailed at that time the water service was of little value. It is interesting to note that in the San Francisco fire it is estimated that the profits of twenty years were destroyed in a fire of three days' duration.

It frequently happens that the walls of structure are standing after a fire, and people point to those walls as an evidence of the fact that the building has satisfactorily passed the conflagration. It often happens that the walls are of concrete, and after the fire are in good shape, and only require a removal of the floor doors, and windows, and roof, to make a habitable dwelling. The floors and columns are fireproof, but the front walls are cast-iron, which are destroyed, or the walls of brick fall down. One of the best examples in America of the behaviour of reinforced concrete in

us conflagration was the building of the Antors Trust Company, of Baltimore, and tests were made on those floors after the way the building department, and they were found to be amply safe under the ordinary fire laws. In the destruction of the lining building opportunity was afforded for construction of a modern building, and it was necessary to tear down the rebuilt structure because it did not fit in with the new store, although it was in very good condition.

Stone is very largely used, not only in this country and in America, but all over the world, as an ornamental material, and it is evident, from the study of buildings where there have been fires of intense heat that the stone is almost entirely destroyed. It is almost impossible to replace the ornamental character with-rebuilding the structure entirely, and the use of granite and hard sandstone in which splinter and split, is ample evidence of the subject of natural building stones should be studied with a view to determining their resistance to fire. The United States Government have undertaken some studies of this kind, and they have found that it makes a material difference as to how the stone is treated in its fire resistance. They found that granite can be quarried so as to offer almost 100 per cent. greater resistance to fire in one direction than it does in the other direction; so in the matter of ornamental buildings there is much to be learned in the manner in which the stone is quarried from the point of view of its fire resistance. Of course, in some cases the destruction cannot be estimated. The mere fact that the skeleton remains is not much consolation, and when ornamental parts are also structural parts carrying the weight, then, of course, the construction seriously endangers the safety of the structure.

It is a striking fact that architects and people generally in America regard burnt clay as an admirable fireproofing material; and I think in large measure this opinion has been based on the fact that small pieces of burnt clay when used in a fire and got hot and thrown into a fire are not disintegrated. But the clay is used in that way. It is used in the shape of bricks. In the process of manufacture it often happens that these tiles are cracked in the corners, and when a column thus fireproofed is subjected to the action of heat, the unequal expansion of the outer face of the tile as compared with the inner face against the steel, an expansion which the thin web at the corner is unable to resist, cracks the tile and the web. As a result the tile is broken away from the column, and the column is left to the action of heat and collapses.

It often happens that in the construction of columns an attempt has been made to fireproof them by binding around the column a metal

fabric and then plastering it. In the Fairmont Hotel about 100 columns fell as a result of this kind of fireproofing. It frequently happened that the floor settled as much as a foot. Now you must bear in mind that there was no great fire in that building. The hotel had not been completed, and the only material there was the lumber that was used in the construction of the building, which was not a great amount, but the burning of this lumber was sufficient to develop enough heat to buckle the flimsily-constructed columns, and in the destruction of such buildings one frequently sees the folly of those flimsy evasions of the law.

It is quite general in a fire to find that where terra-cotta tiles have been used the lower face by reason of its expansion has flaked off. Perhaps as much as 35 per cent. failed so as to come off, while a larger per cent. perhaps are cracked so badly as to be able to be pulled off with the fingers. Now in a case of that kind nothing can be done in the way of restoration except by entire reconstruction of the floor.

The suspended ceiling was found in the San Francisco and Baltimore fires to have acted as an excellent shield, and greatly increased the fire resistance of the floor. Unfortunately in carrying out this idea it frequently happens that ordinary gypsum or plaster is used, and with a very flimsy anchor the gypsum loses its life at a very low temperature, the anchor is destroyed, and the ceiling falls.

It generally happens that the roof trusses of a building are never protected. The upper ceiling is rendered reasonably fireproof, but the steel trusses of the roof are not protected, and as a result, it frequently happens that the roof becomes the entry for a fire from the outside. It is just as necessary to protect the steel work of the roof as it is any other part of a structure.

It is not only necessary that the floors and columns of a building shall be properly protected against fire; it is also necessary that not only the interior but the outside shall be protected. It frequently happens that the windows are perhaps metal frames protected with terra-cotta or some similar fireproofing, and the destruction of these windows leads to an easy access for the flames to spread from floor to floor and lead to the entire destruction of the building.

In some cases where metal doors and windows were used and plain glass used in the windows the glass simply softened and fell down, and so, of course, the barrier was of little value. On the other hand, when the window is constructed with metal frames and wire-glass windows of approved type the glass often softens, but still stays in place and prevents the fire from gaining access to the building.

I believe personally that concrete is going to play a very important rôle in the question of fireproof construction of the future, and it was for this reason that I took for my subject

to-night the subject of fireproofing because I believe that the Concrete Institute of England and the concrete organisations of America have a very important responsibility and a very important task before them."

A discussion followed in which Messrs. E. O. Sachs, E. Fiander Etchells, William G. Kirkaldy, E. P. Wells, and Sir Henry Tanner took part.

THE SITTER VIADUCT, SWITZERLAND.—I.

AMONG the various works involved in the construction of the Bodensee-Toggenburg Railway in Switzerland the steel and masonry viaduct crossing the Sitter River, near Saint-Gall, and close to the station of Bruggen, is a remarkable structure, in the erection of which some interesting timber falseworks were employed.

This viaduct, 380 metres long, comprises at one end four masonry arches of 25 metres span, and at the other end two masonry arches of 25 metres span and five smaller arches of 12 metres span. Between the two series of masonry arches there is a steel lattice girder of 120 metres span, crossing the lowest part of the valley at 98 metres above the river.

Fig. 1 is a general view of the completed bridge, where part of the timber construction tower, built for erecting the steel girder, is still in position.

Masonry Piers and Arches.

The masonry part of the viaduct is chiefly remarkable for the height of the piers, particularly of those acting as supports for the middle span. One of these piers is 85 metres high from the foundation block to the seating of the steel girder, and the other is 59 metres high between the same levels.

The higher of the two piers measures 13.45 metres by 11.60 metres at the base and 7.25 metres by 7 metres at the top, the maximum pressure on the foundations being limited to 10.5 kilogrammes per square centimetre. The batter on the side facing the valley is one in twenty, and the batter on the upstream and downstream sides ranges from one in twenty to one in fifty by successive degrees from foundations to summit.

The two masonry arches next to the steel girder are of the three-hinged type. The spandrels are constructed with expansion joints above the three articulations, in order that the movements of the piers at the top and the variations of pressure on the structure shall not be liable to cause dislocation of the masonry.

The arches were built on trussed centring, supported by the piers, and steel gangways were fixed at springing level so as to afford

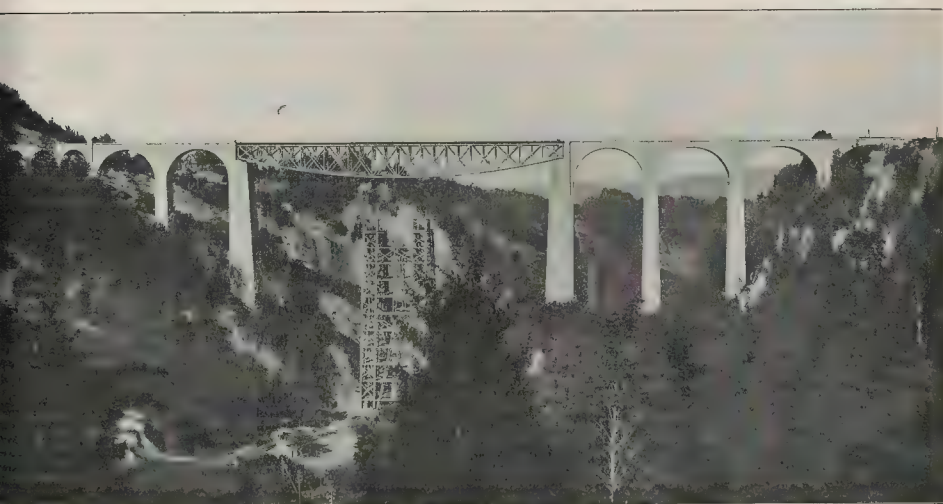
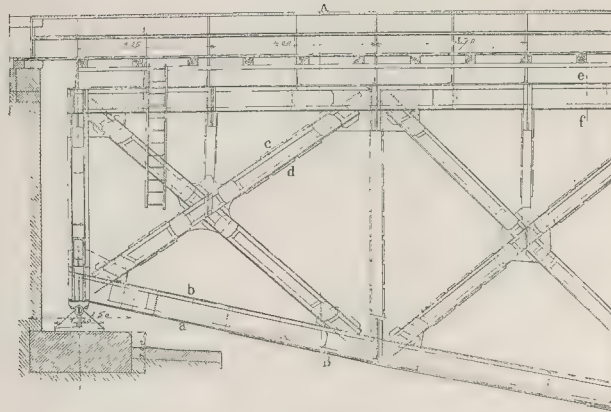


Fig. 1. The Sitter Viaduct, Switzerland.



Elevation at End of Girder Span.

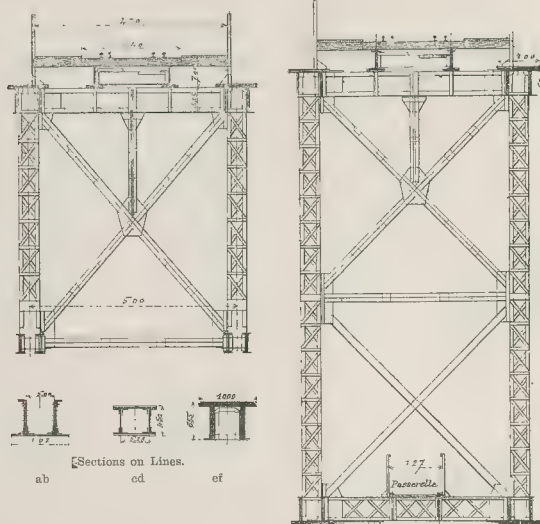


Fig. 2. Sitter Viaduct: Details of Steel Girder Span. (From Genie Civil.)

ready means of communication between the entire series of piers at each end of the bridge.

The foundation block of each pier consists of mass concrete, the proportions of which were varied in accordance with the load to be carried, the unit loads ranging from 5½ to 10.5 kilogrammes per square centimetre. The pier shafts are built of dressed stones in mortar of cement or hydraulic lime according to circumstances, and at every 10 metres of height the masonry includes bed courses of hard gritstone. The pier caps and the arch spandrels are in granite. The masonry part of the viaduct comprises some 27,200 cubic metres in all.

Before construction of the foundations, 10,400 cubic metres of earth and rock had to be excavated, 2,200 cubic metres of this being for the highest pier, and deposited at the approaches to the viaduct.

Aerial Cableways.

The masonry work was executed with the aid of two aerial cableways bringing materials from the Saint-Gall side, because at the time of construction the railway tunnel on the other side of the valley was not completed. Sand and gravel for mortar and concrete were obtained from the river bed, but stone, cement, steel, and all other materials were delivered on the site by rail

and transported by the aerial cableways. One cableway was placed 2 metres to the right and the other 7 metres to the left of the axis of the viaduct. On each cable ran a carrier with endless haulage cable, and tackle for lowering and hoisting skips, the installation commanding the works from one end to the other.

In order to prevent the swaying of the smaller cables and consequent injury to workmen, these cables were held by stirrups at a fixed distance from the main cable, and picked up by the travelling carriage during operation of the cableway.

Mortar and concrete, prepared on the bank of the river, were hoisted in skips from the base of the highest pier and distributed to all parts of the works, which were placed in communication with the control station of the cableways by means of electric bells.

The actual capacity of the two cableways was not more than 35 cubic metres per day of ten hours, owing to the unavoidable delays attending the loading and discharging of the skips.

For some of the smaller piers auxiliary transporters were employed, conveying materials directly from the railway line.

Mortar was mixed throughout in the following proportions: Hydraulic lime mortar, 360 kilogrammes of lime per cubic

metre of sand; cement mortar, 1 part cement to 3 parts of sand.

Steel Girder Span.

The construction of the timber tower and the execution of other works necessary for assembling and erecting the girder span 120 metres occupied more than two months.

This girder, which is the greatest so far in Switzerland, was designed, constructed and erected in place by Messrs. Theodor Bell & Co., of Kriens-Lucerne. From centre to centre of the main girders it is 5.15 metres wide, the reason for this small width being the desire of the railway company to keep down the dimensions of the masonry piers. To ensure the transverse rigidity of the span, the depth of the girders was kept down to one-tenth of the span, instead of one-seventh or one-eighth as customary for work of the kind. The members of these girders, as well as those of the horizontal wind bracing, have been strengthened to allow for the reduced depth.

As the dead weight of the bridge is more than double the permissible rolling load, the transverse stability under the effect of traffic is better assured than if the spans were smaller, the proportion of depth to width remaining the same.

The main girders, of parabolic profile and are 5.15 metres deep at the ends and 12.30 metres deep at the middle. Fig. 2 gives details of the construction and renders unnecessary further description and dimensions. The longitudinal girders on which the sleepers are laid have been fitted as to provide for expansion and contraction and at the same time so as to be unaffected by movements caused by the expansion and contraction of the main girders.

Along the axis of the span a footbridge connects the two ends (see Fig. 2, section at middle of span). This bridge can be reached by ladders from the decking and makes inspection of the structure possible at all times.

ELECTROLYSIS IN REINFORCED CONCRETE.

TWO INDEPENDENT investigations of electrolytic corrosion of steel embedded in concrete are discussed in papers read before the Western Society of Engineers and the American Institute of Electrical Engineers. One paper by Professor Charles F. Burgess deals with the object of obtaining quantitative data on the corrosion of reinforcement under various conditions, and the other by Messrs. C. Edvard Magnusson and G. H. Smith gives the results of research into the nature and causes of the corrosive process and methods of preventing it. Professor Burgess's test specimens were made so as to ensure the corrosive efficiency of the current maintained at the pressure of 8 volts and from the results obtained it appears that when the blocks were placed in ordinary air a corrosion of from 0.32 oz. to 1.23 oz. of iron per year is possible per square foot of iron exposed, and that a 3 per cent. solution of common salt increases the rate of corrosion about one hundred times. The data obtained at pressures lower than 8 volts can be approximately deduced by the application of Ohm's law. The interest of the investigation to Messrs. Magnusson and Smith centres mainly upon suggested means of preventing electrolytic corrosion. Their results show that concrete is a good insulator when dry, but that its conductivity of these materials, varying with porosity and the nature of the solution in the pores. It is scarcely practicable to fill all the pores in concrete and mortar and to eliminate moisture so completely as to insure its conductivity. Therefore some other treatment is necessary. The authors find that corrosion can be entirely prevented if the embedded steel is treated so that the current leaves it through some other metal capable of preventing oxygen ions from coming in contact with iron. Experiments with aluminium paint were successful, although the protective coating broke down after a time, and the authors believe that aluminium plated bars would be perfectly immune from electrolytic corrosion.

THE BUILDING TRADE.

THE CLERK OF WORKS.

Of all names associated with building that of "Clerk of Works" is one of the most ancient, although it is doubtful whether this title applied to an individual performing the same functions as in use. In the account of the castle executed at Porchester Castle by the Earl of Arundel in 1321 and 1322, we read that the work was done under the supervision of the "Clerk of Works," Peter de Pulford. However, probable that this gentleman held a higher position than that generally ascribed to his modern namesake, and would be more on his own initiative rather than as representative of an architect. Withstanding the fact that the modern clerk of works may not hold such an important position as his ancient brother, he is still an important factor in the present-day building operations. His position calls for a very wide knowledge of building operations, unimpeachable honesty, and an unlimited amount of tact. He should be fairly educated, very methodical, have a manner that commands respect. We have heard it suggested that "C. of W." as a signature stands for "Cock of the Walk." This is a libel in most instances, although there are cases where this interpretation might apply, but, while in effect this should be his position, the discreet clerk of works is not to emphasise the fact. The most useful clerk of works is the individual who has had practical experience by being at some prominent trade—varying as the general character of the work he has to attend varies, e.g., for good-class church a mason is often the best man, and so on; while it is advisable that he should have had practical training in one trade, his general experience should extend over all, as he will be called upon to exercise judgment upon greatly varying matters as regards quality of both workmanship and materials. The most reprehensible practice obtained in the offices of sending out a pupil to act as clerk of works, which was all very well for the architect, and not so bad for the pupil, as he had experience in practical working which would serve him in good stead in conjunction with the office training, but what of the employer and in many cases the builder? If the builder was unprincipled he took advantage of the so-called clerk of works' inexperience. On the other hand, it sometimes happened that the tendency of youth and inexperience to lack a little brief authority, caused a good deal of unnecessary trouble, by finding fault with little cause, at the same time passing over matters of much greater importance. We think it can be safely said that this state of things is no longer prevalent as was once the case. The point to be considered is how far should a clerk of works' duties extend. In the first place, how far should the practice go of making drawings? Doubtless the clerk of works who makes drawings is a very useful man for the architect, but beyond a few explanatory details of the work should be done in the architect's office, and unless employed on the job as an assistant pure and simple—in which case he would cease to be a clerk of works—his proper work should be confined to superintendence of the works, giving general directions, booking day time and materials, and sending a note of all buried work which may be met to measurement, if it is not possible to measure such work at the time of its execution. He should not act as architect's assistant at the instance of the employer. Like the foreman, he is useful on the works than in the office, and in works of any magnitude he will find his hands fairly well occupied without attempting to do much in the way of office work. Another question that often arises is how far the clerk of works is empowered to issue orders involving extra cost. Doubtless cases arise where some such power should be exercised, but it should be to a very limited extent, and he would be well advised to hesitate before giving such orders, much trouble having to be owing to the builder having received instructions to do work in a certain way involving extra cost which certainly was not in the clerk of works' mind at the time of giving the order. In this case it is the duty of the builder to point out the fact and make a

definite statement in writing to that effect. This would save a great deal of future strife and misunderstanding, as the matter would be referred to the architect as the one empowered to order extra work. Most of us at some time or other have found ourselves somewhat embarrassed by unexpected claims at the close of the works which could be more easily settled during their progress, if not avoided altogether.

Many contractors considered the signature of the clerk of works on a day-sheet as equivalent to an order, or at least an acknowledgment of an extra, but this should never be the case unless there is a clear understanding to this effect at the outset. It should not even be considered an acknowledgment of the fact of the work being a day-work item. It should represent a check as to the correctness of time and materials charged, and nothing beyond this. The question as to whether the work is extra or whether it should

be charged day work in lieu of being measured, should be left to the proper person to deal with these questions—the surveyor engaged to deal with the accounts. The clerk of the works, from his intimate knowledge of the work during its progress, can often give invaluable information which may lead the surveyor to a better judgment as to how these particular items may be dealt with.

A well-kept diary noting the state of the weather, the arrival of drawings, the advent of special tradesmen, any special instructions given, and many other small details—small in themselves at the time, but often of large importance at a later date—will be found of the utmost value in case of any dispute as to delay and other matters that will arise even on the best-regulated building work. A weekly report should be made to the architect somewhat in the form here given:—

No. 28.

Clerk of Works' Report of Work in Progress at BLANKLEY INSTITUTE.

For Week ending Friday, July 21, 1911.

To JOHN SMITH, Architect, LONDON.

WORKMEN EMPLOYED.		STATE OF THE WEATHER.		DRAWINGS RECEIVED
No.	Hours on Day Work.			N.B.—The Numbers of the Drawings only to be stated.
1	Foreman.			
	Excavators.	Sat.	Fine.	125
6	Labourers	5	Mon. —	126
4	Bricklayers.		Tues. —	127
2	Masons.		Wed. Wet, half day.	128
12	Carpenters and Joiners	7	Thurs. Fine.	
	Slaters.		Fri. —	
2	Plasterers.			
	Plumbers.			
	Glaziers.			
	Painters.			
	Smiths.			
	Fitters.			
1	Scaffolders.			
	Engine Drivers.			
	Machinists.			
11	SUB-CONTRACTS			
Total.				
	Engineers.			
	Electricians.			
	Sculptors and Carvers.			

DRAWINGS AND PARTICULARS REQUIRED.

Details of Joinery to Committee-room and Retiring-rooms.
Selection of Flushing Tank and Sanitary Fittings.

DAY WORK.—The clerk of works is to obtain immediate notification of the employment of any men on day work, to check daily and enter the total in his report. He is also to obtain a weekly account of same from the contractor for all work done and material used in day work, which account must be signed by the foreman and clerk of works, and sent to the architect without delay.

NOTES ON PROGRESS OF WORKS, ETC.

Taking down the centering from ceiling of Small Hall, etc.; hacking to ceilings, etc.

Preparing roof over Small Hall, etc.

Fixing stone coping and pointing to brickwork of east and west walls.

Very steady progress is being made.

EDWARD BROWN, Clerk of Works.

Amongst other qualifications we have mentioned, after unimpeachable honesty (which for obvious reasons we place first) comes that of tact. Some clerks of works, more particularly those of somewhat limited experience, show a deplorable lack of this qualification, and seem rather disappointed than otherwise if they have "nothing whatever to grumble at," and appear to think that unless they can go to the architect with a long list of complaints and statements as to how "I had that out" or "this down" that the architect will think they are not doing their duty. We have in our mind now two clerks of works working for the same architect, and at the time acting on two different works, but the same contractors. In the one case there was nothing but trouble from beginning to end, largely arising from this lack of tact, and also, we are afraid we must say, from an arrogant nature. There was a strong suspicion that the time of complaint was often delayed till the rectifying of the offending portion meant removing a large amount of work which might have been avoided had the defect been pointed out or mentioned at the time. The result was trouble all round. The architect was often placed in a very awkward position in steering between weakening the power of the clerk of works and justice to the contractor—a position not rendered any easier by the fact that the clerk of works was the nominee of the employer. The builders looked with suspicion upon every complaint made, and altogether it was a relief to everyone concerned when the work was finished. In the other case it was altogether different, although if there was any cause for complaint the clerk of works made it perfectly clear in no uncertain voice that "that will not do." He was a man fully up to his work, and commanded the respect of the builders by his knowledge, and they knew that what he said he meant. He never had to ask twice to have anything removed, and the architect was not troubled with any complaints. We are in a position to say, with a full acquaintance with all the parties and the works themselves, that the second job was equal in all respects to the first, and as both were of the same class, one was able to make a fair comparison and a later acquaintance with the work bears this out.

We will close these rambling notes with an instance of where great tact was required, but where we are afraid the circumstances placed too great a strain upon human nature. The architect of a provincial job losing his clerk of works took a strong fancy to the foreman, and with a strange lack of the idea of the fitness of things, offered the foreman the post of clerk of works on the same job. The contractor was to put it quite mildly, "keen." The new clerk of the works coming on to his duties with a pretty full knowledge of the "tricks of the trade," in which he had had a good training under his late employer, was virtue itself. The sequel can well be imagined. He was up to every move, and, not having all the discretion which his unique position demanded, he made his successor's life a perfect misery. We, however, think the blame attached more to the architect who placed him in such a position than the clerk of the works himself. As we have said, it was too great a strain upon human nature, and the opportunity of "getting his own back" from his late employer was a temptation not to be resisted by any ordinary human being.

It may be said that the points we mentioned are obvious to all, but it is often the obvious that is missed, therefore if we have said nothing new, but have only driven home some of the qualifications and characteristics which make the clerk of works as he should be, something more than a mere policeman, we shall feel we are justified in putting these few rambling notes together.

TWO DECEASED BUILDERS' ESTATES.

The estate of the late Mr. James Smart, of Newcastle, builder and contractor, who died on September 29, aged sixty-eight years, is of gross value of 102,328*l.*, with net personality 3,626*l.*; the gross value of the estate of the late Robert Rothwell, of Deepish, Rochdale, builder and contractor, is sworn at 35,038*l.*

BELGIAN CEMENT TRADE DECLINING.

Sir Cecil Herxeld, British Consul at Antwerp, in his annual report to the Foreign Office, just issued, writes:—Cement at one time formed a large and valuable trade, and large quantities were some years ago exported from Belgium to England. This trade has been steadily declining of late years. The exports in 1910 reached 50,354 tons, valued at 49,560*l.*, compared with 57,921 tons, valued at 55,600*l.*, in 1909.

THE APPROVAL OF PLANS.

At the meeting of the Farnham Urban Council on Tuesday of last week complaint was made against the practice of architects and builders proceeding with the erection of buildings before the plans have been approved by the Council. The Committee pointed out in their report that they thought it should be more generally known that it is an offence against the Council's by-laws for any person to commence the erection of a building without having previously given notice and submitted plans, etc., as required by by-law No. 94.

Mr. A. G. Mardon, partner of a local firm of builders, called attention to the difficulty of getting plans settled. He thought it would be rather hard to enforce the by-law. Most people submitted plans to the officials of the Council, who said whether they were or were not in accordance with the by-law, and proceeded with the work at their own risk.

Mr. E. Kempson said if a person deposited plans he had given the necessary notice, and could proceed with the building.

Mr. R. Preston asked how they could expect the Surveyor to know whether the by-laws had been complied with when the whole of the foundations had been covered up. Anything might have been put in the foundations.

The Chairman: In nearly all cases that fact is the case.

Mr. Preston: Then what is the use of a Plans Committee at all?

The Chairman said it would be a great advantage to architects if when plans were returned disapproved the reasons might be stated.

The recommendation was adopted.

LONDON MASTER BUILDERS' ASSOCIATION.

A CONVENT meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on Thursday, the 9th inst. The President (Mr. G. Bird Godson) presided.

The Council received the report of the Bricklayers' Trade Committee re overtime payments, and gave instructions with regard to it.

Many matters of trade interest were considered, and the necessary instructions were given in connexion with the various questions under consideration.

The following were elected members of the Association:—

1. Ordinary member—Mr. A. E. Symes, Stratford, E.

2. Associate members—Messrs. John Russell & Co., Ltd., 145, Queen Victoria-street, E.C.

The Patent Rapid Scaffold Tie Company, Ltd., 124, Victoria-street, Westminster, S.W., were nominated as Associate members of the Association.

ACCURACY IN BUILDING.

At the annual meeting of the National Association of Apprenticeship, held on the afternoon of Wednesday, November 1, at Fishmongers' Hall, London, the Mayor of Hampstead (Mr. W. Woodward), in moving the re-election of the retiring members of the Council, said that, from the point of view of an architect, sincere congratulations were due to those who initiated and supported such a magnificent institution. From an artistic point of view, and from that of the craftsman, the exhibits of the apprentices showed diligence, skill, aptitude, and, in many instances, decided artistic feeling. He did not care what the calling, the art, or the profession was, it was impossible to be master of it unless the young man underwent the training which, for the moment, he would call an apprenticeship. He counselled the apprentices to cultivate as far as possible accuracy of hand and of eye—two features of their future calling which they should find of the utmost importance. Speaking again as an architect, he very much regretted to say that he found on buildings being erected under his own supervision a decided want of accuracy of eye and of hand, which led to enormous trouble and expense to everyone concerned. His advice to apprentices was: Don't think you can attain to eminence in your business by any slapdash imitations of what has gone before. Study well the great masters, look to the precedent in all your work, study these, and try to emulate them. Then try to import into these as much originality as you possibly can.

GENERAL BUILDING NEWS.

KING EDWARD MEMORIAL, FLYMOUTH.

A new pavilion for consumptives is to be erected at Diaworthy as a memorial to the late King. The estimated cost is 500*l.*, and the plans have been prepared by Mr. C. Bartlett, architect. The builder is Mr. F. Bartlett, NEW INSTITUTE, SLOUGH.

The St. Mary's Church Institute has been erected at a cost of about 1,000*l.*, from the designs of Mr. E. W. Wimperley. The building includes a hall which will provide seating accommodation for 400. The contractors were Messrs. Burfoot & Butler.

TRADE NEWS.

The London Drawing and Tracing Office, which has been carried on for over a quarter of a century by Mr. John B. Thorp, has opened a new City branch at 48, London Wall, opposite Salisbury House, where architects, engineers, surveyors, etc., whose business is in the City will find it more convenient to send their work than the Head Office, 98, Gray's Inn-road.

Our attention has been called to a new insect-destroying appliance which can be obtained from Messrs. R. Sumner & Co., Ltd., 50A, Lord-street, Liverpool. The instrument takes the form of a compressed-air hand sprayer. The liquid is placed in a copper receptacle, and a few strokes of a little piston compresses the air. The spray can then be turned on and sent in any direction. If insects are known to be behind paneling, or in cracks from which they cannot be dislodged, the instrument can easily be pressed into service. The liquid does no harm to woodwork or cabin upholstery.

The new Workhouse Infirmary, Christchurch, is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues by Messrs. E. H. Shorland Brothers, Ltd., of Failsforth, Manchester. The Nelson Hospital, Wimbledon, is being supplied with the firm's patent Manchester stoves with descending smoke flues.

Under the direction of Mr. S. Dobell, architect, Exeter, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "pump" ventilators and air inlets, has been applied to the Sailors' Home, Teignmouth.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At Tuesday's meeting of the London Council, the following applications under London Building Acts were dealt with, names of the applicants being given in parentheses:—

Lines of Frontage and Projections.
Holborn.—Erection at a new theatre abutting upon Shaftesbury-avenue, Broad-street, Grape-street, Holborn, of a projecting feast next to Shaftesbury-avenue, and project balconies and ladders next to Grape-street (B. Crewe).—Consent.

Holborn.—Projecting illuminated sign front of the Kingsway Theatre, Great Queen-street, Holborn (Mr. A. Penley).—Consent.

Islington, North.—Erection of an iron glass hood over the entrance to "Eymers" No. 45, Anson-road, Tufnell Park (Messrs. O'Brien, Thomas, & Co., for Mr. V. Sutherland).—Consent.

Islington, North.—Projecting one-story sign in front of No. 59, Highgate-hill, Isling (Mr. G. Carter).—Consent.

Kennington.—Three one-story shops on southern side of Lansdowne-road, Kenning (Messrs. Hulbert & Haysman for Mr. Roskilly).—Refused.

Kennington, South.—Erection of a projecting iron balcony at No. 18, Crosswell-place, Kenning (Mr. W. Withers for Mr. J. M. W. W.).—Consent.

St. George, Hanover-square.—Erection of porch at No. 21, Grosvenor-square, abutting upon the eastern side of North Audley-street (Mr. R. G. Hammond for the Right Hon. I. Furness).—Consent.

St. Pancras, South.—Iron and glass addition in front of No. 27, Charlotte-street, St. Pancras (Mr. J. Vernon for Mr. Bruschweiler).—Refused.

Width of Way.

Islington, South.—Erection of a building the western side of Napier-terrace, Islington (Messrs. Lovegrove & Papworth for the British Syphon Manufacturing Company).—Refused.

Kennington, South.—Erection of a steel storage tank and tower with a boundary fence at less than the prescribed distance from the centre of the roadway of Holland-way, Kennington (Mr. R. D. Batchelor for the Right Hon. the Earl of Ilchester).—Consent.

Width of Way and Lines of Frontage.
Hammer-smith.—Erection of a building the northern side of King-street, Hammer-smith, to abut also upon the western side

u-road (Temperance Billiard Halls, Ltd.) sent

th of Way, Lines of Frontage, and Construction.

Paneras, West.—Three wood and iron erected on the roof of Nos. 386 and 388, n-road, St. Pancras (Messrs. Dunk & eld for Messrs. G. Wailes & Sons).—nt.

ines of Frontage and Construction.

ington, East.—Retention of a wooden sign-front of No. 106, Elmore-street, Isling- (Mr. E. Bent).—Consent.

ham.—Erection of a temporary wood on motor cycle-shed in front of No. 10, elier-road, Peckham (Messrs. W. R. Hill for Mr. L. Alexander).—Consent.

Space at Rear.

ington, North.—Addition at the rear of 6, Ladbroke-grove, Kensington (Mr. S 6).—Consent.

ington, South.—Additions upon the space ar of Nos. 114, 114A, and 116, West- grove, Paddington (Mr. G. A. Sexton r. G. Gauthurst).—Consent.

ildings for the Supply of Electricity.

Paneras, East.—Iron boiler-house of the city generating-station, Pratt-street, on Town (Mr. S. W. Baynes for the aneras Metropolitan Borough Council).—nt.

Paneras, East.—Iron chimney shaft at the city generating-station, Pratt-street, on Town (Mr. S. W. Baynes for the aneras Metropolitan Borough Council).—nt.

Cubical Extent.

enwich.—Building exceeding 250,000 cubic extent upon a site approached out of the side of Woolwich-road, Woolwich A. Roberts for Messrs. G. A. Harvey & Consent.

Uniting of Buildings.

of London.—Uniting of Nos. 10 and 11, te, with No. 4, Jewry-street, City, by of an opening at the ground-floor level, at requiring the removal of the bond in the walls of Nos. 10-11, Aldgate, or wood and iron buildings on the roof I, Chateaufort Clarke for Messrs. Wiggins, & Co.).—Consent.

of London.—Uniting of Nos. 9 and 99, court, Old Broad-street, City (Messrs. R. Harrison, & Son, for the City Offices ay, Ltd.).—Consent.

of London.—Formation of an opening in rty wall at the first-floor level between 1 and 6, Princes-street, City (Mr. A. eld for the Grocers' Company).—Consent.

of London.—Window openings in the wall at the first and second-floor levels n the staircase of the Saracen's Head Snow-hill, and Nos. 1, 2, and 3, King- where such windows light into the en- passageway at the first and second-floor of Nos. 1, 2, and 3, King-street (Mr. Le Fanu for the Governors of Queen ounty).—Consent.

of London.—Openings in the party wall basement and first-floor levels between 1 and 33, Snow-hill, and to the widening existing openings in the party wall at ound and first-floor levels between Nos. 32, Snow-hill, Holborn Viaduct (Mr. Clifton for the Holborn Viaduct Land y).—Consent.

on.—Opening at the basement level n Nos. 107-108, Hatton-garden, and Nos. 108-109, Hatton-garden, for Messrs. Gamage, Ltd.).—Consent.

on.—Doors of special construction in iron doors to openings in the division at the premises of Messrs. Brown s, Ltd., Great Eastern-street, Hoxton oot Doors, Ltd.).—Consent.

George, Hanover-square.—Uniting of 9 and 20, Grafton-street, St. George, r square (Mr. W. A. Lewis for Mr. D. ald).—Consent.

George, Hanover-square.—Uniting of Nos. 46, Grosvenor-road, Westminster, by of (i) a fire-existing staircase from the nt of No. 46 to the ground floor of and (ii) a party wall opening at the or level (Messrs. Blow & Billerey).—

id.—Additional opening in the party wall the White Horse Theatre, Aldwych, and joining office block at the first-floor r. W. G. R. Sprague for Mr. F. C. y).—Consent.

6.—Openings at the second and third evels in the party wall between Nos. 12, Savile-row (Messrs. Miller, Vardon, r for Messrs. I. Walker, P. J. Vardon, B. Miller).—Consent.

recommendation marked + is con- the views of the Metropolitan Borough concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERYSTWYTH.—Workmen's dwellings; Mr. R. Jones, Engineer, Aberystwyth Urban District Council.

Aston (Birmingham).—Brewery premises; Mr. J. Meredith, architect, Frederick-street, Aston.

Avonmouth (Bristol).—Sugar refinery for the Bristol Sugar Company, Ltd.

Barnsley.—Day school, (4,000l.); Vicar, St. Mary's Church, Barnsley.

Barry.—Day school, between James and Rupert streets; Vicar, St. John's Church, Barry.

Barton-on-Humber.—School; Mr. S. M. Grant, Secretary, Education Committee, Lindsey County Council, Lincoln.

Bath.—Proposed parish hall; Vicar, St. Stephen's Church, Bath.

Birmingham.—Factory, Freeth-street; Mr. E. Harper, architect, Corporation-street, Birmingham. Mr. F. Whittall, builder, Lister-street, Birmingham. Telegraph stores, Messrs. R. Fenwick, Ltd., builders, William Edward-street, Birmingham. Factory, Barr-street; Mr. M. Type, architect, Edmund-street, Birmingham. Messrs. B. Whitehouse & Son, builders, Parkhouse Works, Monument-road, Birmingham.

Bishop's Stortford.—Picture theatre, South-street; Messrs. Houston & Houston, architects, 81, High Holborn, W.C.

Blackrock.—Thirty-five houses (1,000l.); Surveyor, Cork Rural District Council.

Bootham (Stoke).—School; Mr. B. Ashworth, Town Hall, Hanley.

Bournemouth.—Thirty-six bungalows; Mr. F. W. Lacey, Surveyor, Bournemouth Town Council.

Canterbury.—Alterations to all church schools, except one (8,500l.); Architect, care of the Committee of Joint Managers of Voluntary Church of England Schools.

Cardiff.—Rebuilding, Theatre Royal; Mr. Bertie Cwce, architect, 75, Shaftesbury-avenue, W.C.

Chelmsford.—Additions to fire-station; Mr. C. Brown, Surveyor, Chelmsford Town Council.

Chertsey.—Children's home (1,250l.); Mr. H. E. Paine, Clerk, Board of Guardians, Chertsey.

Cheshunt.—School (120 places); Mr. U. A. Smith, Surveyor, Herts County Council, Hertford.

Creek.—School; Mr. J. G. Burrell, architect, Market-place-chambers, Durham.

Dawley Parva.—Sunday-school; Vicar, St. Luke's Church, Dawley Parva.

Denbigh.—Offices; Messrs. Porter & Elcock, architects, Colwyn Bay.

Doncaster.—Church (7,000l.); Messrs. Mullins & Richardson, builders, 5, Shotton-street, Doncaster.

Edinburgh.—Adaptation of buildings, Chalmers-street, into Model Nursing Home; Mr. T. D. Rhind, architect, 23, Rutland-street, Edinburgh.

Fazakerley.—School, Barlow-lane (650 places); Mr. J. Legge, Secretary, Education Committee, Liverpool Town Council.

Finedon.—Extensions to works for Messrs York Brothers.

Forsbrook.—Proposed enlargement of St. Peter's Church (1,500l.); Vicar, St. Peter's Church, Forsbrook.

Glasgow.—Buildings, Stanley-street, for Messrs A. & J. McLeellan, carting contractors.

Grangemouth.—Stables and depot buildings; Mr. A. Donald, Engineer, Grangemouth Town Council.

Grimby.—Proposed paint factory, Corporation-road, for Messrs. Bonshor & Scretion, 11, Cleethorpe-road, Grimsby. Proposed soap factory for Mr. E. Goschalk, Hull.

Halifax.—Improvements at central stores (15,000l.) for the Industrial Co-operative Society.

Histon.—School (5,000l.); Mr. Austin Keen, Secretary, Education Committee, Cambridgeshire County Council, Cambridge.

Hoole.—Extensions and improvements to All Saints' Church (2,000l.); the Vicar.

Honiton.—Alterations at workhouse (560l.); Architect, care of Mr. E. W. Hellier, Clerk, Board of Guardians, Honiton.

Hull.—Hospital; Mr. T. B. Atkinson, architect, 11, Trinity House-lane, Hull.

Keighley.—School (8,000l.); Mr. J. Stuart, Wakefield.

King's Heath (Birmingham).—Theatre; Mr. A. Fielder, architect, 43, Woodville-road, King's Heath.

Kinsley.—Enlargement of school; Mr. J. Stuart, Wakefield.

Kirkham.—Three houses, Wellington-street, for the Fylde Co-operative Society.

* See also our list of Competitions, Contracts, etc., on another page.

Leek.—Proposed alterations to baths; Mr. W. E. Beadham, Surveyor, Leek Town Council, School (5,000l.); Mr. T. Godwin, builder, Victoria-road, Hanley.

Liverpool.—Factory, Glasgow-street; Mr. J. McGovern, 26, North John-street, Liverpool.

Llandudno.—Drill-hall; Mr. Lloyd Jones, architect, Bridge-street, Carnarvon.

Llandilo.—Workhouse infirmary, Pontladies-hill; Mr. R. S. Lewis, Clerk, Board of Guardians, Llandilo.

Llanystumdwy.—Institute; Mr. F. Taliesin Roes, May Buildings, 51, North John-street, Liverpool.

Lytham.—Offices, etc., for the Ribbles Steam Laundry.

Madryn.—School; Mr. R. L. Jones, Market-street, Carnarvon.

Mansfield (Notts).—United Methodist Church; Messrs. Wills & Son, architects, St. Peter's churchyard, Derby. School, Moor-lane; Mr. T. P. Collinge, Secretary, Education Committee, Mansfield Town Council.

Marsden.—House, Fern Lea, for Messrs Whitehead & Bradbury, Ltd.

Middlewich.—Building for the Middlewich Public Hall Company, Ltd.

Moulton.—Houses; Mr. G. A. Thiselton, Surveyor, Spalding Rural District Council.

Newbury (Berks).—Houses; Mr. W. Church, Surveyor, Newbury Rural District Council.

Newcastle-on-Tyne.—Proposed parish hall; Vicar, St. Paul's Church, Newcastle.

Newport.—Theatre, Clarence-place (8,000l.), for the Lion Circuit of Playhouses; Messrs. E. C. Jordan & Son, builders, Harrow-road, Newport.

Newton-le-Willows.—Church; Churchwardens, Parish Church, Newton-le-Willows.

Northampton.—The following plans have been passed:—Additions to premises, 48, Giles-street, for the Northants Union Bank; extensions to factory, Wellingsborough-road, for Messrs. Manfield & Sons; three houses, Lutterworth-road, for Mr. J. Panting; extensions to factory, St. George's-street, for Messrs. J. Marlow & Sons, Ltd.; ten houses, Raymond-road, for Mr. J. W. Gosage; additions to factory, Artisan-road, for Messrs. Crockett & Jones; additions to factory, St. James's-road, for Messrs. Padmore & Barnes.

Northfield.—School; Messrs. J. Dallow & Son, builders, Blackheath, Birmingham.

Oxford.—School; Mr. W. H. Castle, Estate Surveyor, Oxford Town Council.

Pentrelynnymer.—School; Mr. W. D. Wiles, architect, Market-place, Wrexham.

Plymouth.—A plan has been lodged for four houses, rear of Walmer House, for Mr. A. E. Tibby.

Portishead (Bristol).—House for Dockmaster; Mr. W. W. Squire, Docks Engineer, Bristol Town Council.

Pwllglas.—Sixty houses; Mr. J. H. Lewis, Surveyor, Bedwelly Urban District Council.

Rainworth.—School; Mr. J. H. White, Secretary, Education Committee, Mansfield Town Council.

Saddleworth.—Workmen's dwellings; Mr. J. H. Reynolds, Surveyor, Saddleworth Urban District Council.

Shrewsbury.—School; Messrs. T. Lowe & Sons, builders, Burton-on-Trent.

Skegness.—Hospital; Mr. F. J. Parkinson, architect, Richmond-terrace, Blackburn.

Southampton.—Extensions to car depot, Portsmouth (3,145l.); Messrs. Playfair & Toole, builders, Northam-road, Southampton. The following plans have been passed:—Two houses, shops, and dairy, etc., Portsmouth-road, for Messrs. Weston & Burnett; four houses, Newton-road, for Mr. F. Lowe. A plan has been lodged for two houses and shops, Shirley High-street, for Messrs. Pearce & Keble.

Stafford.—Hospital; Mr. F. G. Price, architect, Doxey.

Stoke-on-Trent.—Fire station, Welch-street; Mr. A. Burton, Surveyor, Stoke-on-Trent Town Council.

Stourport.—Factory; Messrs. Pritchard & Pritchard, architects, Kidderminster; Messrs. Vale & Sons, builders, Stourport.

Tonbridge.—Improvements and additions to hospital (1,900l.); Mr. W. L. Bradley, Surveyor, Tonbridge Urban District Council.

Upper Penn.—School, Woodfield-avenue; Mr. C. Balfour, Secretary, Education Committee, Staffs County Council, Stafford.

Wallsall.—The following plans have been passed:—Stores, etc., Old Birchills, for Messrs Barton & Sons, Ltd.; factory, Midland-road, for Messrs. Norton & Proffitt.

Winchester.—Club-house; Secretary, Royal Winchester Golf Club. Picture and variety theatre, Middle Brook-street; Messrs. Houston & Houston, architects, 81, High Holborn, W.C.

Wolverhampton.—Memorial wing at general hospital (6,185l.); Messrs. H. Wilcock & Co., builders, 53, Darlington-street, Liverpool.

THE SURVEYORS' INSTITUTION: PRESIDENTIAL ADDRESS.

THE opening address of the new session of the Surveyors' Institution was delivered by Mr. W. Edgar Horne, M.P. (President), at the ordinary general meeting of the Institution on Monday. In the course of his remarks the President said:—

"Touching first upon domestic matters, I must congratulate members on this our initial meeting in this enlarged Lecture Hall. The Council would perhaps not have entered upon an extension of the Institution buildings at the present moment had it not been for the rearrangements of the Government, County, and other buildings around Princes-mews. The opening out, however, of the extension at the back of the Institution for the extension of the County of Middlesex Guildhall practically necessitated their extension up to the frontage of the new street. Advantage has been taken of this to enlarge the Lecture Hall and Council Chamber, and to rearrange more conveniently the offices of the Secretary and the clerical staff, all the rooms at the front of the building now being made available for arbitrations and for the use of members.

Another subject which calls for some comment is the Conference with the Surveyors-General of the Colonies, which took place here in June last. One of my first duties as President was to welcome our fellow-surveyors from overseas and to take part in their discussions; and I am glad of this opportunity of bearing witness to the tolerance and readiness to listen to the other side which were exhibited by those taking part in the Conference. It is to the cordial relations which existed between the delegates that we must attribute the unanimous report which they made to the Secretary of State on a subject upon which a number of conflicting opinions undoubtedly existed.

Land Tax Valuation.

Turning now to more general matters, we cannot, as surveyors, overlook the criticisms which have arisen during the past year in the debates in the House of Commons on the subject of the administration of the land taxes and the valuations in connexion with them. Cases have been quoted which, although the speakers have usually disclaimed any intention of casting aspersions upon the conduct or integrity of the valuation staff, have indirectly had that effect by holding up for public condemnation the methods employed by them.

Those of us who have had experience in valuations know the difficulty and care needed in collecting all the data necessary in order to come to a sound conclusion, and the indefinable period of assimilation of those data before we can state the result with any confidence; and even then allowance must be made for errors of judgment. When, therefore, we take into consideration the youthfulness of the Government staff, their enthusiasm and anxiety to make progress in the formidable task that lies before them, we may ascribe such cases as have been the subject of complaint, and as should not more correctly be attributed to the hard-and-fast methods of valuation laid down by the Act, to haste and to that ignorance of material factors affecting value which is almost inseparable from haste.

I would beg those who have control of this body of young surveyors to urge their staff to be deliberate and cautious in forming their opinions, but beyond this when errors have been made, as made they must be, to give them an opportunity of adjusting them without delay, and thus avoid the risk of exposing these young professional men to public censure.

While on this subject I may perhaps be allowed to address one word of warning to my professional brothers against even an appearance of taking up too conservative an attitude with regard to proposals of change. We are all willing to admit that, in the main, the propagandist of advanced theories is actuated by a desire for the good of the community, and we shall therefore be acting most in the national interest by attempting to direct into practical channels such parts of his doctrine as contain the germ of public advantage.

The Small Landholder.

A measure which is now being pressed through the House of Commons has not, I think,

attracted the attention which its importance would seem to warrant. I refer to the Small Landholders (Scotland) Bill, under which it is proposed to extend the provisions of the Crofters Act (at present limited in their application to certain defined parishes in the Highlands and Islands of Scotland) to holdings in any part of Scotland of an annual value of not more than 50*l.*, or if exceeding that sum not greater than 50 acres in extent; to set up a Land Court to fix rents and carry out the duties which previously fell upon the Crofters Commission; and to establish a separate Board of Agriculture for Scotland.

The Crofters Acts, I need not remind you, were originally passed to meet the case of the crofters in the Western Highlands and islands who occupied holdings inconsiderable in area, small in annual value, and usually rescued, by the personal labour of the occupier, from the surrounding heather and rocks. Such holdings approached the conditions prevailing in Ireland more closely than those which are more commonly found in other parts of agricultural Scotland and England, and it was, therefore, perhaps not surprising that an attempt was made by the Act of 1886 to place the crofter in a somewhat similar position with regard to rent and security of tenure to that held by his fellow on the other side of the Channel. It is true that he was not empowered to assign his tenancy, but few would be prepared to deny that the elements of a dual ownership were contained in this Act.

It is now proposed to extend these provisions to holdings in all parts of Scotland, and the conditions in England or Scotland outside the crofting districts being practically the same, these proposals, if adopted by the Legislature in respect of Scotland, could not logically be rejected in respect of England and Wales. This can only mean that within a few years of the national credit being pledged to the extent of many millions in the attempt once for all to do away with that system of dual ownership which has been the curse of Ireland, a definite move is being made which threatens its introduction into Great Britain.

Compulsory Purchase.

Another subject which has pressed itself upon my notice is the position which has gradually grown up in connexion with the compulsory purchase of land by means of powers obtained under Private Acts of Parliament.

Much has happened since the railway boom in the first half of last century necessitated the passing of the Lands Clauses Consolidation Act—a measure which still stands as a memorial to the thoroughness and care expended by our forefathers upon legislation of this class—and I should be one of the last to suggest that by these changes some amendment in the pro-

cedure there laid down had not become both inevitable and desirable. We all recognise that property which is needed for public purpose should be acquired readily and on terms fair both to the community and the owner, and the provision of small holdings, the planning of our future centres of population, and the laying out of thorough routes of transit, the Legislature has decided that the national need has justified the adoption of special powers. But the acquisition of land by Private Bill comes under a different category. It is not uncommon to find in some innocent-looking Omnibus Bill promoted by a local authority a clause inserted which by a seeming mere verbal alteration would give powers considerably in advance of those previously granted. Within the last three or four years attempts have been made in Private Bills by Corporations to alter the provisions of the Lands Clauses Consolidation Acts in three important particulars, viz:—

- (1) In enacting that any enhanced value accruing from public works executed within five years from the date of the notice to treat should be excluded from any question of compensation.
- (2) In enacting that, where the particulars of claim are insufficient and not delivered within sufficient time, the claimant should pay half the costs of the proceedings; and that, where the award of a verdict was for a sum less than or the same as the offer, all the costs of the proceedings should be paid by him.
- (3) In enacting that a single arbitrator should in certain cases determine compensation.

These attempts, with one slight exception have not as yet proved successful.

The Growth of London.

Leaving these more general questions, it has occurred to me, as a surveyor whose business has been mainly a London one, and as having been connected with one of the largest rating authorities in the kingdom for many years, that it might be both interesting and instructive if placed before you tables containing figures which might enable us to appreciate the growth of London during the last forty years; for the growth of the various parts of London and the percentage of increase from quinquennium to quinquennium provide material for thought. The fact that the Quinquennial Valuation came into operation this year, when the last census was also taken this year, enables me to bring the figures up to a recent date.

TABLE GIVING THE INCREASE AND DECREASE OF POPULATION IN THE SEVERAL METROPOLITAN BOROUGHES AS SHOWN BY THE 1901 AND 1911 CENSUSES.

Metropolitan Boroughs.	Population.		Increase or Decrease of Population in Inter-censal Period.	
	1901.	1911.	Increase.	Decrease.
Battersea	168,967	167,793	—	1,114
Barnet	130,760	125,960	—	4,800
Bethnal Green	135,680	126,262	—	1,398
Camden	259,339	261,357	2,018	—
Chelsea	73,842	66,404	—	7,438
Deptford	110,398	105,496	—	4,902
Finsbury	101,462	97,570	—	13,487
Fulham	137,284	133,825	16,036	—
Greenwich	95,770	95,877	207	—
Hackney	219,110	222,857	3,477	—
Hammersmith	112,239	121,603	9,364	—
Hamstead	81,942	85,510	3,568	—
Holborn	59,405	49,336	—	10,069
Islington	334,961	327,423	—	7,538
Kensington	176,628	172,462	—	4,220
Lambeth	301,893	298,126	—	3,767
Leicester	127,495	160,843	33,348	—
Paddington	145,576	142,576	—	1,400
Poplar	168,822	162,449	—	6,373
St. Marylebone	133,301	118,221	—	15,080
St. Pancras	285,717	218,453	—	16,864
Shoreditch	118,837	111,463	—	7,174
Southwark	346,180	191,351	—	14,229
St. Pancras	285,717	218,453	—	18,576
Stoke Newington	51,217	50,683	—	534
Wandsworth	231,622	211,402	79,480	—
Westminster, City of	183,011	180,277	—	2,734
Woolwich	117,178	121,403	4,225	—
City of London	26,421	19,657	—	7,390
			151,721	16,059

ANALYSIS OF RATEABLE VALUES OF CITY OF LONDON AND METROPOLITAN BOROUGH OF LONDON IN QUINCENTENNIAL INTERVALS—1871 to 1911 (from Statistical Abstract for 1911).

CITY OF LONDON.			
Year.	Rateable Value to nearest Thousand.	Percentage of Increase during Quinquennium.	Percentage of Increase during Quinquennium.
1871	182,000	—	—
1876	232,000	27.5	—
1881	356,000	53.4	—
1886	482,000	35.4	—
1891	538,000	11.6	—
1896	588,000	9.3	—
1901	696,000	18.3	—
1906	797,000	14.5	—
1911	878,000	10.2	—
HAMPSHIRE.			
1871	264,000	—	—
1876	336,000	27.3	—
1881	417,000	24.1	—
1886	561,000	34.5	—
1891	670,000	19.4	—
1896	787,000	17.5	—
1901	939,000	19.3	—
1906	1,067,000	13.6	—
1911	1,095,000	2.6	—
HOLDEN.			
1871	534,000	—	—
1876	549,000	2.8	—
1881	642,000	15.7	—
1886	708,000	10.3	—
1891	786,000	11.0	—
1896	808,000	2.8	—
1901	912,000	12.6	—
1906	1,034,000	13.4	—
1911	1,105,000	6.8	—
ISLINGTON.			
1871	984,000	—	—
1876	1,158,000	17.7	—
1881	1,448,000	24.5	—
1886	1,907,000	31.7	—
1891	2,050,000	7.5	—
1896	2,171,000	5.9	—
1901	2,404,000	10.7	—
1906	2,590,000	7.8	—
1911	2,813,000	8.5	—
KENSINGTON.			
1871	936,000	—	—
1876	1,272,000	35.9	—
1881	1,648,000	29.6	—
1886	1,834,000	11.3	—
1891	2,050,000	11.8	—
1896	2,070,000	1.0	—
1901	2,216,000	7.0	—
1906	2,359,000	6.5	—
1911	2,390,000	1.3	—
LAMBETH.			
1871	919,000	—	—
1876	1,037,000	12.8	—
1881	1,286,000	24.0	—
1886	1,464,000	13.8	—
1891	1,550,000	6.2	—
1896	1,671,000	7.8	—
1901	1,858,000	11.2	—
1906	1,946,000	4.7	—
1911	1,907,000	-2.0	—
LEWISHAM.			
1871	267,000	—	—
1876	324,000	21.3	—
1881	370,000	14.2	—
1886	411,000	11.1	—
1891	457,000	11.2	—
1896	539,000	18.1	—
1901	841,000	58.0	—
1906	1,082,000	28.7	—
1911	1,095,000	0.9	—
PADDINGTON.			
1871	585,000	—	—
1876	1,092,000	87.0	—
1881	1,215,000	11.2	—
1886	1,275,000	5.0	—
1891	1,328,000	4.1	—
1896	1,329,000	0.0	—
1901	1,453,000	9.3	—
1906	1,544,000	6.2	—
1911	1,532,000	-0.8	—
POPULAR.			
1871	448,000	—	—
1876	566,000	26.3	—
1881	671,000	18.6	—
1886	713,000	6.1	—
1891	851,000	19.5	—
1896	733,000	-16.3	—
1901	837,000	13.9	—
1906	837,000	0.0	—
1911	810,000	-3.3	—
ST. MARYLEBONE.			
1871	1,158,000	—	—
1876	1,305,000	12.6	—
1881	1,387,000	6.3	—
1886	1,454,000	4.8	—
1891	1,510,000	3.8	—
1896	1,602,000	6.1	—
1901	1,679,000	4.8	—
1906	1,904,000	13.4	—
1911	2,078,000	9.1	—
ST. PANCRAS.			
1871	1,150,000	—	—
1876	1,300,000	13.0	—
1881	1,472,000	13.2	—
1886	1,509,000	2.5	—
1891	1,590,000	5.4	—
1896	1,618,000	1.8	—
1901	1,738,000	7.4	—
1906	1,791,000	3.0	—
1911	1,782,000	-0.5	—

SHOREDITCH.			
Year.	Rateable Value to nearest Thousand.	Percentage of Increase during Quinquennium.	Percentage of Increase during Quinquennium.
1871	441,000	—	—
1876	491,000	11.3	—
1881	580,000	18.1	—
1886	651,000	12.3	—
1891	679,000	4.3	—
1896	691,000	1.8	—
1901	737,000	6.6	—
1906	801,000	8.5	—
1911	763,000	-4.9	—
SOUTHWARK.			
1871	725,000	—	—
1876	838,000	15.6	—
1881	940,000	12.2	—
1886	1,037,000	10.5	—
1891	1,076,000	3.8	—
1896	1,126,000	4.6	—
1901	1,234,000	9.6	—
1906	1,390,000	12.6	—
1911	1,268,000	-9.0	—
STREATHAM.			
1871	998,000	—	—
1876	1,090,000	9.2	—
1881	1,193,000	9.4	—
1886	1,299,000	8.9	—
1891	1,242,000	-4.4	—
1896	1,327,000	6.8	—
1901	1,381,000	4.1	—
1906	1,496,000	8.0	—
1911	1,508,000	0.8	—
STROKE NEWINGTON.			
1871	72,000	—	—
1876	83,000	15.3	—
1881	144,000	71.1	—
1886	174,000	20.8	—
1891	192,000	10.3	—
1896	202,000	5.2	—
1901	341,000	68.3	—
1906	339,000	-0.6	—
1911	383,000	12.7	—
WANDSWORTH.			
1871	438,000	—	—
1876	543,000	24.2	—
1881	697,000	28.1	—
1886	880,000	25.6	—
1891	1,054,000	19.9	—
1896	1,240,000	17.6	—
1901	1,550,000	25.0	—
1906	1,934,000	24.7	—
1911	2,120,000	9.3	—
CITY OF WESTMINSTER.			
1871	3,037,000	—	—
1876	3,318,000	9.3	—
1881	3,813,000	15.1	—
1886	4,112,000	7.9	—
1891	4,396,000	6.8	—
1896	4,853,000	10.4	—
1901	5,393,000	11.1	—
1906	5,963,000	10.6	—
1911	6,423,000	7.7	—
WOOLWICH.			
1871	182,000	—	—
1876	231,000	26.9	—
1881	315,000	36.4	—
1886	360,000	14.3	—
1891	437,000	21.4	—
1896	516,000	18.1	—
1901	623,000	20.7	—
1906	736,000	18.0	—
1911	784,000	6.5	—
TOTAL.			
1871	10,983,000	—	—
1876	12,240,000	11.5	—
1881	13,813,000	12.9	—
1886	15,717,000	13.8	—
1891	17,005,000	8.2	—
1896	18,794,000	10.5	—
1901	20,644,000	9.8	—
1906	22,324,000	8.2	—
1911	24,677,000	10.5	—

People are apt to consider that increases in the assessable value of London must be due either to the improved value of the land or to the new buildings erected upon it. Both these factors may, and indeed generally do, contribute to it, but the rates also benefit very largely by the assessment of hereditaments, which owe little to either land or buildings, and whose value is determined by their profit-earning capacity; and the growth of these, as I shall presently show, has been the means of materially swelling the gross values for rating purposes.

Examining, then, the three classes of property which contribute to the rates, I would offer for your consideration various problems which I think are worthy of examination.

1. *The Land*.—The increase in the value of land, when the whole of London is being considered, is probably inappreciable, and certainly not at the rate imagined by many. The various imperial and local taxes to which it is exposed, and which each year we see becoming more onerous, must be held responsible for this. Of course, there are appreciations in value in some parts, but they are accompanied by depreciations in other localities, and if we adopt the simile of the waves of a nearly tideless sea we shall not inaptly describe the phenomenon of the varying values as recorded from year to year.

2. *Buildings*.—The additional rating values which new buildings afford are counterbalanced

* Including the rateable value of the Queen's Park Ward, transferred from Chelsea to Paddington, by the operation of the London Government Act.

Kensal Town transferred to Paddington and

to a very large extent by the depreciation due to wear and tear of existing buildings, and the varying requirements of fashion and trade which are continually operating to render these structures obsolete. This is particularly noticeable in the case of private residences.

3. The peculiarity of the third class of rateable hereditaments is the naked and unblushing way in which their value as profit-earning concerns form the basis of their contributions; and the fact that the rates are becoming in London a species of income tax chargeable on the profits of trade is one which I think merits your serious attention. Of course, shops and other trading businesses suffer in the same way to some extent, but the figures in their case are masked by other considerations.

The growth in rateable value of this third class of property is so remarkable that I have thought it worth while to place before you the following table showing the progress of the more important divisions during the past forty years:—

RATEABLE VALUE OF MONOPOLY SERVICES, 1871 TO 1911.

Class of Special Property	Rateable Value.				
	1871.	1891.	1896.	1906.	1911.
	£	£	£	£	£
Railways	688,192	1,879,834	2,074,120	2,307,864	2,314,803
Tramways	...	...	...	140,575	348,583
Gas	241,280	737,062	925,142	923,924	976,412
Electricity	...	...	...	202,728	379,186
Water	202,434	476,690	537,680	634,206	699,691
Hydraulic	...	...	...	30,018	38,738
Docks	268,609	327,516	288,942	226,770	238,808
Canals	30,963	...	...	19,192	14,398
Telephones and Telegraphs	3,041	16,985	21,000	31,602	101,923
Government Telegraphs	...	...	...	854	845
	£1,369,499	£3,337,467	£3,866,984	£4,517,734	£5,074,096

To this class we may, I think, well add licensed premises, which generally owe much more of their value to the possession of a licence than to their structure or to the land on which they are built; the figures in their case are interesting, and in the following table I would draw your attention to the great increase in 1901 owing to the boom, and to the depreciation, due to other well-known causes, in the rateable values exhibited in 1906 and 1911, amounting to a total of 468,733£:—

RATEABLE VALUE OF PUBLIC-HOUSES, ETC., IN FORCE ON APRIL 6, 1895, 1896, 1901, 1906, AND 1911.

	1891.	1896.	1901.	1906.	1911.
	£	£	£	£	£
Public-houses	922,972	1,082,068	1,459,324	1,357,635	979,448
Beer-houses	102,111	113,253	130,589	135,228	107,002
Hôtels	224,016	238,565	371,267	344,676	369,578
Restaurants	180,771	185,942	140,313	153,848	152,732
	1,369,870	1,560,827	2,071,493	1,991,407	1,602,760
	—	+190,957	+510,666	-80,086	-388,647

It is worthy of note that the rateable value of the monopoly services, given in the foregoing table, has increased by 270 per cent. since 1871, while the percentage of increase of the remainder of the metropolis apart from these has only been 113.

The foregoing facts and figures lead me to offer several points for your consideration, which it seems to me may justifiably be put forward in view of the facts brought to light by the last quinquennial valuation and the decennial census.

To begin with, it would appear that not only has the population of London ceased to grow, but also that the character of the ratepayer is changing from year to year. I would suggest that the ratepayer must be placed in one or other of three classes. First, that of the person who lives in London for the purpose of enjoyment and expends his money there; second, that of the person in London for the purpose of making money; and third, that of the great joint-stock concerns and companies, yearly becoming more numerous, which have no direct voice in the expenditure of the rates or the election of those who are responsible for their expenditure. The second and third classes, those who use London for the purpose of making

money, are yearly becoming an increasing percentage of the whole, and it is to their enterprise and speculation that we owe most of the increased rateable value for which we take credit.

If we adopt the suggestion that London is becoming entirely a trade centre, and that rates which are levied represent a proportion of the gross profits created by these trade concerns, it is arguable that so long as these rates produce

Greater London.

Before abandoning the fascinating pursuit of delving among figures, and attempting to deduce correctly the lessons to be learnt from them, may perhaps be allowed to lay before you two more short tables, the first showing the increase in the population of that Greater London which is comprised within the City of London and the Metropolitan Police Districts, and the second giving the figures for the Home Counties:—

GREATER LONDON.

	1871.	1881.	1891.	1901.	1911.
Administrative County of London	3,261,395	3,830,397	4,227,954	4,536,267	4,523,931
Outer Ring	624,245	833,364	1,405,852	2,045,135	2,730,002
Greater London	3,885,641	4,766,661	5,633,806	6,581,402	7,253,933

HOME COUNTIES.

	1891.	1901.	1911.
Middlesex	543,223	792,476	1,126,694
Essex	788,374	1,082,908	1,331,103
Kent	830,390	961,139	1,045,601
Surrey	521,844	533,661	845,544
Sussex	547,931	602,255	693,416
	3,226,462	4,069,529	5,032,417

These figures would seem to corroborate the views I have endeavoured to place before you. The vast increases shown can only be attributed to proximity to London and its importance as centre of trade, finance, and amusement.

I should like here to express my obligation to Mr. J. Calvert Spensley, the statistical officer of the London County Council, and to the representatives of the municipal authorities and business concerns for the assistance they have so freely and courteously given in supplying and checking the data on which I have relied in writing this paper.

Methods of Assessment.

From the discussion of rateable values and the different classes of persons who pay rates it is but a short step to consider methods of assessment, and no apology therefore seems necessary for allotting a few paragraphs of my address to that subject.

At any time during the past generation suggestions in favour of an alteration in our method of assessment have not been infrequent. A Royal Commission has sat upon the subject, a Landed Majority and minority reports have been published, and apparently have proved mutually destructive. At any rate, no Government since their issue ten years ago has made an effective attempt to deal with this important but intricate subject.

When this matter is taken in hand I think it would also be desirable to substitute a different tribunal of appeal to that which now exists. The affliction of paying rates is only mitigated if the sufferer is able to assure himself that he is bearing a fair share with his neighbours, according to the true rental value of the premises which he occupies, and that he has not been saddled with charges which they ought to bear. In some cases it is not easy to arrive at the right amount; only by weighing the views and opinions of trained surveyors, who have knowledge of the matters in dispute, can a just conclusion be arrived at. To appreciate the importance of their arguments, and to understand their methods of calculation, a court needed which is both trained and experienced in the work.

In this connexion I should like to add my opinion that small and poor properties are usually rated more nearly up to their full rental value than larger and more valuable ones. There are many reasons for this. First of all the poor being poor are unable to appeal against their assessments; secondly, these properties being so much more numerous their true rental values are more accurately estimated; and thirdly, rich owners are able to have their case put eloquently forward, and thus to secure sympathetic hearing from their judges, who indeed are probably anxious to retain in London as long as possible, the first class of ratepayer to which I have previously alluded.

an increasing prosperity and induce to a larger and more profitable trade, the arguments against their expansion fall to the ground. It is true that the comfort and enjoyment of any community must depend upon the lowness of the rates, if the ratepayers are confined to those who only spend their money in the locality and acquire it somewhere else. But in business concerns, expenditure on advertisement for attracting custom, and in the attempt to meet efficiently the growing demands and tastes of

clients, is both expedient and justifiable if conducted on business lines.

This argument clearly must not be held to justify the ever-increasing amounts which are exacted from the ratepayers towards the cost of services more national than local in their character.

London Improvements.

I cannot help feeling that London is now suffering from a want of the activity formerly shown in providing new thoroughfares and improving old ones to cope with the necessities of traffic and commerce. The corn and coal dues in former days provided the means of carrying out these enormous and much-needed improvements, but these were given up, as I think foolishly, and were it not for the resources of the Bridge House Estates I doubt whether London would have any chance of being provided with the new bridge, which we have been promised and which is so much needed.

The spirit of parsimony, which is not true economy, puts off from year to year the work which is so necessary if London is to keep pace with the requirements of the people, and the interminable wranglings between the boroughs and the County Council as to what are local and what county improvements never come to an end.

There is, all are aware, a large body of people who think that capital value rather than rental value should form the basis. There are others who think that land only should be taxed, and again others who would collect rates in respect of empty premises. In New York, I see, furniture and works of art are laid for contribution, and in Berlin, so far as I have been able to follow the rather obscure system, the municipal authorities issue a land note which is to all intents and purposes a replica of that sent in for income tax by the rental authorities.

Reviewing these in detail, so far as my own experience goes, I think the immediate rental value is a more satisfactory basis for assessment than a problematical capital value. I am unable to concede the claims of those who would rate the land only. It opens the door to a large number of imaginary values which may have no basis of fact, and suggests that the present users have no regard to economic value. I agree, however, that ratepayers have a grievance in some cases where the land is put to some altogether worthless use (using the word "worthless" in its commercial sense), and I do not think it would be unfair if the law were so altered that the authorities should be allowed as an alternative to assess the land only, disregarding the structure upon it.

In conclusion, may I address a few words to younger members more particularly? We have seen the continued growth of our Institution, and have noted with satisfaction the proved status and prosperity of its members. These results must not be attributed to our efforts having been devoted primarily to the institution or to our own well-being. They are the inevitable consequence rather of a single-minded devotion to the interests of the clients whom we have the honour to serve, and I believe that if we keep this object as clearly before us in the future as in the past we may see the Institution and its members in the sure belief that their prosperity will not wane."

WESTMINSTER CITY COUNCIL.

At the fortnightly sitting of the Westminster Council on November 9 the following business were dealt with:

Reconstruction of Millbank.—A plan was received from the London County Council of the proposed reconstruction of Millbank from Wood-street to Horseferry-road. The new street will be 70 ft. wide, with foot-ways 10 ft. wide on the west side and 10 ft. on the east side.

Widening of Horseferry-road.—The same Committee reported on the widening of Horseferry-road between Carpenter-street and Tufnell-street to 50 ft., and a widening of the street between Horseferry-road and Tufnell-street to about 33 ft. It was decided that the Council should contribute one-fourth of the cost of the improvement.

Piccadilly Widening.—The same Committee reported on the delay which has occurred in the rebuilding of Nos. 19 and 20, Piccadilly. It was stated, was due to negotiations with the Crown, the Piccadilly Hotel Company, and Messrs. Denman as to whether the frontage is to be erected in accordance with the elevation of the Piccadilly Hotel. The Committee now understood that it is intended to adopt the Piccadilly Hotel elevation.

LEGAL COLUMN.

Water Supplied to Trade Premises.

The House of Lords have affirmed the decision of the Court of Appeal in the case of Metropolitan Water Board v. Colley's Patents, (noted *The Builder*, March 10, 1911). This case is of very great importance to all who are in trade in the area supplied by the Board, as the decision amounts to this—namely, in addition to the charge for water by the Board used for trade purposes, where consumers are supplied to the workpeople employed on the premises for washing lavatories, the Board can also levy a charge based on the rental value of the premises, as the Board is supplied for those purposes has been supplied for "domestic purposes." It is subject to a rebate in certain cases under sect. 9

This case has illustrated the difficulties of interpreting this private Act of Parliament relating to a prime necessity of life. The County Court decided that the Board were not entitled to charge as for a supply for domestic purposes; the Divisional Court were divided in opinion, so the decision remained undisturbed. The Court of Appeal were divided, but the majority reversed the decision, and the House of Lords unanimously affirmed the decision of the majority in the Court of Appeal. Their judgment is only at present very shortly reported, but the Lord Chancellor is reported as saying that the material definition contained in the Act was "couched in barbarous or certainly slovenly language."

It is not necessary for us at present to analyse the various sections of the Act, as this decision is conclusive, and we have already touched upon them (see *The Builder*, December 31 last). The interpretation placed upon the Act by the House of Lords is that adopted by a Judge of the Chancery Division in *South Suburban Gas Company v. Metropolitan Water Board* (the *Builder*, October 23, 1909); but it may be noted that under the decided cases water supplied to a railway company for the public is treated as standing on a different footing, as this was held to be supplied for "railway purposes" (see *Metropolitan Water Board v. London, Brighton, and South Coast Railway Company*, the *Builder*, March 25, 1910). The present decision has disposed of the view adopted by the Courts in some of the decided cases, that some degree of restriction is necessary for the water to be deemed to be supplied for domestic purposes, as it now appears that the purposes for which the water is used are alone regarded; but, as we have already pointed out in former articles, its effects may be most serious. In undertakings where there is no statutory obligation to supply workpeople with washing and other conveniences on the premises, these facilities may be withheld in order to avoid incurring the extra rate, and at a time when cleanliness and sanitary conditions are being encouraged and fostered it is to be regretted that a reading should be placed upon an Act which may deter employers from providing extra conveniences on business premises. The finances of the Metropolitan Water Board are hardly in such a condition that there would be ground for hope that legislation can be obtained to relieve consumers of any portion of the charges now imposed upon them.

Liabilities of Road Authorities.

The case of *McClelland v. Lord Mayor of Manchester*, which has recently been argued at length, raises questions of considerable interest to the public. The Corporation, acting under their statutory powers, had made up and lighted a thoroughfare which they had taken over. At the end of the street was a natural ravine some 125 ft. deep. The plaintiff, passing down this thoroughfare, had suffered an accident, his motor car falling into the ravine, and he brought the action against the Corporation for negligence, alleging that they had neglected properly to fence the street, had allowed one of the gas lamps to remain broken, so that it gave insufficient light, and also that, owing to the way this street was lighted, the two streets appeared to be a continuous thoroughfare, and thus formed a trap.

The jury found (1) the road as made was dangerous to persons lawfully using it; (2) the unfenced ravine was a hidden trap; (3) the defendants, in opening the road to the public after making it up and in maintaining it, did not take proper care to warn the public of the danger, and that the plaintiff had not been guilty of contributory negligence. A fourth answer, as to invitation to use the road, was held immaterial.

The defence practically amounted to denial of any negligence, a plea under the Public Authorities Protection Act, and a plea that if there was any omission on the part of the Corporation it was one of non-feasance and not misfeasance, and the Corporation were not liable.

As regards the point as to mere non-feasance, the Court held that this doctrine had no application here, as it was not a case where the highway had merely been allowed to get out of repair (as to such a case see *Maguire v. Corporation of Liverpool*, the *Builder*, February 25, 1905). Here the authority had done something to the road and had omitted some precaution, and thus it was misfeasance.

Another point of greater difficulty arose out of the defendants' contention that as the road was dedicated in the condition it now was, and the ravine was a natural existing condition, the defendants could not be liable for leaving it in the same condition, especially as they had statutory authority merely to pave, etc., any part of it.

The learned Judge held that as the defendants had undertaken a duty with regard to the road they were bound to exercise due care, and as their statutory powers were not imperative but merely permissive (i.e., as it was not imperative that the road should be made up to the very brink of the ravine), by creating, as the jury found, a trap, the defendants had exercised their powers negligently.

As regards the lighting, the finding of the jury was held to mean that the system of lighting was insufficient, and not merely that a lamp was giving insufficient light owing to a defect, and on this point the defendants were again held liable for having negligently performed a duty which they had undertaken.

From the decision as at present reported it would appear that even had the lamp alone been defective there would have been misfeasance, for which the defendants would have been liable, but this is not absolutely clear. The defence under the Public Authorities Protection Act also failed, the "act and neglect" being held not to have been concluded when the street was made up in 1904, but to continue to operate at the time of the accident. The above is only necessarily an incomplete summary of a decision which involves points of much complexity and importance.

Nuisance from Noise.

Dwellers in towns have some difficulty in maintaining actions for nuisance from noise; therefore we may note the recent case of *Becker v. Earl's Court, Ltd.*, in which an artist claimed an injunction against the defendant company in respect of the noise created by three forms of entertainment provided at Earl's Court—The Dragon's Gorge, the "Cake Walk," and the "Merry-go-Round." The nuisance complained of was the thud of the engines in the Cake Walk, the passage of the cars through the Dragon's Gorge, with the raucous voices of the attendants, and the shrill shrieks of the passengers, and the blare of the organ on the Merry-go-Round. One important point in such cases was found in the plaintiff's favour, as the neighbourhood was held normally to be a quiet one, and the plaintiff's house was in a cul-de-sac. It was also found that the above noises reached the plaintiff's house. The Judge, however, seems to have borne rather hardly on the artistic temperament of the plaintiff. He said he would not consider whether the artistic temperament was more sensitive than others, but on the ground that the plaintiff was "run down," so that the noise got on his nerves and caused a kind of mental paralysis, he held that the plaintiff himself was not entitled to relief. Fortunately for the plaintiff there were, besides himself, in the house persons who were neither artists nor invalids, namely, his wife and child, and both these persons suffered in health from the noise, and their sufferings caused the noise to be pronounced a nuisance, and an injunction was granted and 25s. damages.

No doubt the real finding was that the plaintiff's condition was not directly traceable to the noise, but as the case is at present reported it makes it appear that artists and invalids are placed under severe disabilities if they reside in quiet neighbourhoods in London, and that it is as well to keep an artistic and healthy person residing on the premises as a kind of gauge to register what is a reasonable or excessive amount of noise.

LAW REPORTS.

KING'S BENCH DIVISION.

DIVISIONAL COURT.
(Before Mr. Justice DARLING, Mr. Justice HAMILTON, and Mr. Justice BANKES.)

Minter v. Waldstein.

THE court was informed on Friday by Mr. Clavell Salter, K.C., that an appeal had been entered by the defendant in this case against the decision of the Official Referee, Mr. Muir Mackenzie. The action, the hearing of which occupied thirty-eight days, was by Mr. F. G. Minter, a building contractor, of Putney, who sued Professor Waldstein, a professor of fine arts at Cambridge University, on a contract for enlargements and alterations to Newton Hall, near Harston, Cambridge. The professor counterclaimed, alleging that the work was not carried out according to contract.

In the result, the Referee awarded the plaintiff 3,283s. on his claim, while Professor Waldstein obtained 2,115s. on his counterclaim, so that the set-off in favour of his counterclaim was 1,168s. Mr. Clavell Salter asked the court to relieve the parties of the responsibility and expense of procuring copies of the transcript of the Referee's notes, which filled eight bulky volumes. The transcripts of such notes were usually obtained for the use of the court when

* All these applications are in the state which opposition to the grant of Patents them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. THOSE WITH AN ASTERISK (*) ARE ADVERTISED IN THIS NUMBER: Competitions, iv. vi. viii. x.; Public Appointments, xix.; Auction Sales, xxviii. Certain conditions beyond those given in the following information are imposed in some cases, such as: that the advertisers do not make themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

NOVEMBER 17.—**Nottingham.**—BAPTIST CHURCH PREMISES.—Limited to Nottingham architects. Assessor, Mr. H. W. Willis, A.R.I.B.A., 10, King-street, Nottingham.

NOVEMBER 30.—**Gardiner.**—TECHNICAL INSTITUTE. Architects and surveyors invited to submit plans and estimates for a technical institute. Advertisement in issue of August 18 to carry out particulars. Successful architect to carry out. Premiums of 125*l.*, 75*l.*, and 50*l.* to competitors. Mr. J. S. Gibson, F.R.I.B.A., 10, King-street, Nottingham.

NOVEMBER 30.—**Hastings.**—EAST SUSSEX HOSPITAL.—The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Fund invite designs for new hospital. Advertisement in issue of August 25 for particulars. Premiums of 125*l.*, 75*l.*, and 50*l.* to competitors. Mr. E. T. Hall, F.R.I.B.A., 10, King-street, Hastings. Cost not to exceed 3,000*l.*. Particulars from Messrs. Packer & Co., Greenbank, Hastings.

NOVEMBER 15.—**Sofia.**—NEW MUNICIPAL BUILDING. See Competition News, page 508, October 3.

NOVEMBER 29.—**Glasgow.**—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 50*l.*, and 20*l.* are offered. See advertisement in issue of December 24, 1910, for particulars.

NOVEMBER 30.—**Armadale.**—Public hall and school. Premiums of 15*l.* and 10*l.* to architects who were represented on the committee on October 12.

NOVEMBER 30.—**Welsh Bisteddau.**—1912.—DESIGN FOR WORKMEN'S DWELLINGS.—Prize, 50*l.* to architects from Welsh Housing Association, 9, Fawcett-street, Cardiff.

NOVEMBER 1, 1912.—**Rochdale Infirmary.**—EX-AMINATION.—Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A., 10, King-street, Rochdale. Premiums of 25*l.*, 10*l.*, and 5*l.* to architects twenty-five miles of Bolton. Premiums, and 25*l.* Assessor, Mr. Jonathan Simpson, 10, King-street, Bolton.

NOVEMBER 6, 1912.—**Stafford.**—PUBLIC LIBRARY.—Designs for a public library. Assessor, Mr. Henry T. Hare, F.R.I.B.A., 10, King-street, Stafford. Second and third premiums of 10*l.* and 5*l.* to architects. Particulars from Mr. H. T. Hare, 10, King-street, Stafford.

NOVEMBER 29, 1912.—**Montevideo.**—GOVERNMENT PREMISES.—(Premiums, 2,125*l.* and 850*l.*) and town improvement scheme (premiums, 1,000*l.*, 600*l.*, and 300*l.*). Basinghall-street, E.C.

NOVEMBER 31, 1912.—**Australia.**—DESIGNS FOR A PUBLIC LIBRARY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for particulars. See also page 508, October 3.

NOVEMBER 1912.—**Dusseldorf.**—A plan for the reconstruction of the City of Dusseldorf. Premiums of 100*l.* to 375*l.*. Conditions on application to the architect Burgmaster, Dusseldorf. A translation of the conditions on page 585, September 29.

NOVEMBER 1912.—**Jordanhill, Glasgow.**—PROPOSED COLLEGE. See Competition News, page 508, November 10.

NOVEMBER 1912.—**London.**—NEW OFFICES.—The London Authority invite designs for new offices in Trinity-square, E.C. See advertisement in issue of November 10.

Contracts.

BUILDING.

Date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 17.—**Scarborough.**—SHELTER.—Design for a cabin's shelter in Valley Bridge. Assessor, Mr. H. W. Willis, A.R.I.B.A., 10, King-street, Scarborough. Plans and quantities from Mr. Harry W. A. Inst. C.E., Borough Engineer and Architect, 10, King-street, Scarborough.

NOVEMBER 15.—**Exeter.**—ADDITIONS.—For alterations and additions at 99, South-street, for the Exeter Co-operative and Industrial Society, Ltd. Plans and specifications and quantities from Mr. R. M. Chal-

lice, architect and surveyor, 14, Bedford-circus, Exeter.

NOVEMBER 20.—**Bournemouth.**—LAW COURTS.—Erection of new Law Courts and other works in connexion therewith. Particulars and forms of tender and plans from Mr. F. W. Lacey, F.R.I.B.A., Borough Architect, Municipal Offices, Bournemouth. Deposit of 1*l.* 1*s.* 6*d.*

NOVEMBER 20.—**Langley Park.**—ALTERATIONS.—Alterations to Langley Park Workmen's Club. Drawings, specifications, and conditions of contract seen, and forms of tender from Mr. Geo. Thos. Wilson, Lic. R.I.B.A., architect, 22, Durham-road, Blackhill, Co. Durham.

NOVEMBER 20.—**Southampton.**—STABLES, ETC.—Erection of stables, coach house, coal, and other stores, at the Sanatorium. Plans, specifications, etc., seen, and quantities, on deposit of 1*l.* 1*s.* 6*d.* from Mr. Ernest J. Eiford, Borough Engineer, Southampton-on-Sea.

NOVEMBER 20.—**Stockton-on-Tees.**—ALTERATIONS.—For alterations to the Free Library. Plans and specifications from the Borough Engineer, Town Hall, Stockton-on-Tees.

NOVEMBER 21.—**Bridlington.**—RESIDENCE.—Erection and completion of a detached residence, Marton-road. Drawings and specifications from Mr. J. Earnshaw, architect, Carlton House, Bridlington.

NOVEMBER 21.—**Bryn-mawr, etc.**—REPAIRS, ETC.—For papering, painting, and repainting at the following houses for Messrs. A. Buchanan & Co. The Brewery, Rhymney; Clarence Hotel, Pontypool; Mount Pleasant Hotel and house adjoining, Pontypool; Cwmfrwdwr Inn, Cwmfrwdwr; Commercial Inn, Talywain; Five Bells, Garndiffaith, near Abersychan; Tredegar Arms Hotel, Tredegar; Clarence Hotel, Brynmawr; Royal Arms, Brynmawr; Golden Lion, Brynmawr; Black Lion, Brynmawr. Specifications from Mr. Thomas Roderick, architect, Clifton-street, Abersychan.

NOVEMBER 21.—**Caerphilly.**—PREMISES.—Erection of business premises on the Square. Deposit of 7*l.* 1*s.* 6*d.* from Mr. W. H. Shute, Corn Exchange, Caerphilly.

NOVEMBER 21.—**Leek.**—WORKS.—For sundry works at the Coffee Tavern, Cattle Market. Plans and specifications seen, and quantities from Mr. W. E. Becham, Surveyor, Town Hall, Leek, Staffs.

NOVEMBER 21.—**Whitley.**—WALL, ETC.—Construction of a concrete retaining wall and steps in connexion with the improvement of the sea banks between Brook street and the slope to the shore from the Whitley Bay. Plans and specification seen and quantities and form of tender from Mr. A. J. Russell, A.M. Inst. C.E., the Council's Surveyor, Council Offices, Whitley Bay.

NOVEMBER 22.—**Oldham.**—CORRIDORS, ETC.—For erection of corridors or covered ways between the blocks of the infirmaries of the Workhouse. Specifications and plans from Messrs. Taylor & Simister, architects, 29, Queen-street, Oldham.

NOVEMBER 22.—**Portsmouth.**—ROOFS, ETC.—For two common dressing rooms and a diving stage at the Stamshaw swimming pond. Specification and plan seen and a form of tender from the Borough Engineer, Town Hall, Portsmouth.

NOVEMBER 22.—**Tredegar.**—HOUSES.—Erection and completion of twelve houses, etc., and new road on the Beaufort Estate, for the Glanhowy Building Club, at Sewra, Duketown. Plans and specifications from Messrs. T. Williams & Sons, architects and surveyors, 101, Commercial-road, Tredegar, and 1, Gilfach-street, Bargoed.

NOVEMBER 23.—**Sowerby Bridge.**—SHED.—Erection of a shed and warehouse; also, extensions to foundry at Globe Works, Sowerby Bridge, for Messrs. W. P. Eglin, Ltd. Drawings and specifications and quantities from Messrs. Cleaver, Williams & Sons, architects, Post-office-buildings, Commercial-street, Halifax.

NOVEMBER 23.—**Watford.**—ADDITIONS, ETC.—The Herts C.C. Education Committee invite tenders for alterations and additions to existing Grammar School for Boys at Derby-road, Watford. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Hampton Court.**—HOUSES.—Erection of houses for firemen at Hampton Court Palace. Drawings, specification, and conditions and form of contract seen, and quantities and form of tender, on deposit of 1*l.* 1*s.* 6*d.* from the Secretary, H.M. Office of Works, etc., Storey-gate, London, S.W.

NOVEMBER 24.—**Kaverfordwest.**—REBUILDING.—For the rebuilding of premises in Dew-street, Havertfordwest. Drawings and specifications seen, and particulars from Messrs. D. E. Thomas & Son, architects and surveyors, 17, Victoria-place, Havertfordwest.

NOVEMBER 24.—**Rugby.**—COTTAGES.—Erection and completion of nineteen cottages in Aca-

grove. Plans and specifications from Messrs. Franklin & Newman, M.S.A., architects and surveyors, Rugby. Deposit of 2*l.* 2*s.*

NOVEMBER 25.—**Blackpool.**—ALTERATIONS.—For alterations to the Baths at Cooker-street. Specification and quantities with Mr. H. Brodie, Borough Engineer, Town Hall, Blackpool.

NOVEMBER 25.—**Caerphilly.**—HOUSES.—Erection of twenty (or more) houses near the Pontynewydd Hotel, for the Pontynewydd Building Club. Plans and specifications with Mr. H. Gabe Jones, architect and surveyor, Hengoed.

NOVEMBER 25.—**Arrom.**—HOUSE, ETC.—Erection of a nine-roomed dwelling-house and outbuildings. Drawings and specifications at Nile Bros., New-road, Tron.

NOVEMBER 25.—**West Green.**—SCHOOL.—The Tottenham Education Committee invite tenders for a permanent school on Downhills site. See advertisement in this issue for further particulars.

NOVEMBER 26.—**Inverness.**—HOUSES.—Erection of a pair of semi-detached houses in Dochfour Drive. Plans and specifications with Mr. Thomas Munro, architect, 62, Academy street.

NOVEMBER 27.—**Poole.**—BUILDINGS.—Erection of temporary buildings at the Isolation Hospital, Ringwood-road. Particulars from Mr. Samuel J. Newman, F.R.I.B.A., Borough Surveyor, Municipal Offices, Market-street, Poole.

NOVEMBER 28.—**Portsmouth.**—RESIDENCE.—Erection of a house as a residence for the engineer in charge, on the east side of the Eastney Pumping Station. Quantities, on deposit of 1*l.* 1*s.* 6*d.* from Mr. G. H. Elberton, Town Clerk, Town Hall, Portsmouth.

NOVEMBER 28.—**Salford.**—LODGE.—For erection of lodge at entrance of Peel Park. Quantities, on deposit of 1*l.* 1*s.* 6*d.* from Mr. W. H. Matley, architect, 14, Ridefield, Salford.

NOVEMBER 28.—**Willesden.**—RUSTIC BAND-STAND.—The Willesden D.C. invite tenders for supply and fixing of rustic bandstand at Roundwood Park. See advertisement in this issue for further particulars.

NOVEMBER 29.—**Cheltenham.**—REPAIRS.—For the repairs at the Workhouse. Specifications at the Workhouse, Cheltenham. Mr. J. Neek, Clerk, Union Offices, Swindon-road, Cheltenham.

NOVEMBER 30.—**London.**—N. ALTERATIONS.—The St. Mary Islington Guardians invite tenders for alterations, etc., at Receiving Home, Hornsey-rise, N. See advertisement in this issue for further particulars.

NOVEMBER 30.—**London.**—N. PLASTERING, ETC.—The St. Mary Islington Guardians invite tenders for plastering walls, etc., at Infirmary, Highgate-hill, N. See advertisement in this issue for further particulars.

DECEMBER 3.—**Penrith.**—SHOP, ETC.—Erection of new shop and bank premises at Penrith. Plans and quantities and specifications from Mr. John F. Curwen, F.R.I.B.A., F.S.A., architect and sanitary engineer, 28, Highgate, Kendal.

DECEMBER 4.—**Birmingham.**—SUB-STATION.—Alterations and additions to the electric sub-station, Dale End. Quantities, on deposit of 2*l.* 2*s.*, from the Quantity Surveyor, Mr. Anthony Rowe, King's Court, 117, Colmore-row, Birmingham. Architects, Messrs. Even Harper, F.R.I.B.A., and Brother, Rusk-chambers, 101, Corporation-street, Birmingham.

DECEMBER 4.—**Birmingham.**—SUB-STATION.—Erection of an electric sub-station in War-dean, Quarborne. Quantities, on deposit of 2*l.* 2*s.*, from the Quantity Surveyor, Mr. Anthony Rowe, King's Court, 117, Colmore-row, Birmingham. Architects, Messrs. Arthur Harrison & Co., Council Chambers, 109, Colmore-row, Birmingham.

DECEMBER 4.—**Bristol.**—INSULATION.—For construction of cold storage insulation of transit shed No. 2, Avonmouth Dock. Specification, form of tender, and drawings from Mr. W. W. Squire, Engineer, Cumberland-road, Bristol, on deposit of 5*l.*

DECEMBER 4.—**Derby.**—SCHOOL.—For the enlargement of the Peas Tree Council School. Plans seen, and specification, quantities, and conditions of contract from Messrs. Naylor & Sale, Smith's Bank-chambers, Market-place, Derby. Deposit of 1*l.* 1*s.* 6*d.*

DECEMBER 4.—**St. Neots.**—ADDITIONS.—For alterations and additions to St. Neots Council School. Plans and specifications seen, and quantities on deposit of 1*l.* 1*s.* 6*d.* from Mr. H. Leets, County Surveyor, Huntingdon.

DECEMBER 8.—**Berkeleyshire.**—SCHOOLS.—For the building of two new schools—one at Childey and one at Hermitage. Plans, specifications, and form of contract at the Education Secretary's

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

Office, Deposit of 2l. 2s. to the Secretary to the Berkshire Education Committee, The Forbury, Reading.

DECEMBER 9. **Ogmore Vale.**—ADDITIONS.—Alterations and additions to the Ogmore Constitutional Club. Plans and specification, on deposit of 1l. from Mr. L. Vaughan Evans, The Court, Penecod.

DECEMBER 9. **South Ockendon.**—ALTERATIONS AND ADDITIONS.—The Essex Education Committee (Orsett District Sub-committee) invite tenders for alterations and additions to schools. See advertisement in this issue for further particulars.

DECEMBER 13. **Lancaster.**—SCHOOL.—Erection of the Girls' Grammar School, on the High-street Estate. Plans seen, and quantities from the County Architect, Mr. Henry Lillier, 16, Ribblesdale-place, Preston. Deposit of 3l.

DECEMBER 13. **Willesborough.**—SCHOOL, ETC.—The Kent Education Committee invite tenders for new Council school and for alterations to existing school premises. See advertisement in this issue for further particulars.

DECEMBER 14. **Epworth.**—ADDITIONS.—For alterations and additions at the Council school. Quantities and form of tender from Messrs. Scorer & Gamble, architects, Bank-street, chambers, Lincoln. Deposit of 1l. 1s.

NO DATE. **Baby.**—CLASSROOMS.—For new classrooms for the Wesleyan Church. Names to the architects, Messrs. H. Beck & Son, 28, High-street, Doncaster.

NO DATE. **Galsdale.**—INSTITUTE.—For erection of proposed village institute. Quantities from Mr. Harold G. Walker, architect and surveyor, Whitby.

NO DATE. **Kidsgrove.**—CHURCH.—For erection of Primitive Methodist church, Balls Bank. Names to Messrs. E. Jones, M.S.A., & Jackson, architects, Hanley, Stoke-on-Trent.

NO DATE. **London.**—SCHOOL.—For the erection of a permanent school on the Downhills Site, West Green. Quantities from the architect, Mr. G. E. T. Laurence, A.R.B.A., 22, Buckingham-street, Adelphi, W.C. Deposit of 2l. 2s.

NO DATE. **Beckenham.**—SMALL HOUSES.—Tenders are invited for erection of small houses at Beckenham. See advertisement in this issue for further particulars.

NO DATE. **Pinxton.**—PICTURE PALACE.—Erection of a Picture Palace, Pinxton. Deposit of 2l. 2s. to Mr. J. Tomlinson, architect, South Norampton.

NO DATE. **Sandstead.**—HOUSE.—Erection of a dwelling-house. Names to Mr. J. William Cocking, architect, Huddersfield.

NO DATE. **Thackley.**—HALL.—For erection of a Children's Home. Quantities, on deposit of 1l. 1s. from Mr. Fred Holland, architect, 22, Manorow, Bradford.

NO DATE. **Wolstanton.**—SCHOOL.—Erection of new infants' school and cookery, Watlands. Deposit of 2l. 2s. to Mr. W. F. Slater, architect, Burslem.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 20. **Brighton.**—HEATING.—For the installation of the Barker patent system of heating by hot-water radiators in the several rooms of the Royal Pavilion. Specification and form of tender from the Borough Surveyor at the Town Hall, Brighton. Deposit of 1l. 1s.

NOVEMBER 25. **Tottenham.**—HEATING, STOVES, AND RANGES.—The Tottenham Education Committee invite tenders for low-pressure hot-water heating apparatus and supply of stoves and ranges at Down-lane School. See advertisement in this issue for further particulars.

NOVEMBER 27. **Battersea.**—GALVANISED TANK.—The Battersea B.C. invite tenders for supply and delivery of galvanised-iron closed tank. See advertisement in this issue for further particulars.

DECEMBER 4. **London.**—LIGHTING.—For installing electric light at the Gainsborough-road School, Canine Town, E. Mr. W. Jacques, A.R.B.A., architect, 2, Fen-court, Fenchurch-street, E.C. Deposit of 1l. for specification and form of tender.

DECEMBER 4. **London.**—STEAM ROLLER.—The Stepney B.C. invite tenders for supply of a 10-ton steam roller. See advertisement in this issue for further particulars.

FURNITURE, PAINTING, MATERIALS, ETC.

NOVEMBER 18. **Birmingham.**—PIPES.—For supply of cast-iron pipes, special castings, etc. Specification from Mr. E. A. Lees, Secretary, 44, Broad-street, Birmingham.

NOVEMBER 20. **Manor Park.**—FENCING.—Erection of about 293-ft. run of unclimbable wrought-iron railing with blue brick curb, etc. to enclose site at corner of Northumberland-avenue and Ingalestone-road, Wanstead Park Estate, Manor Park, E. Drawings and specification from the architect, Mr. C. Herbert Bressey, 91 and 93, Bishopsgate, E.C.

NOVEMBER 21. **Chorley.**—TUBES.—For the supply of about 1,890 yds. 2-in. internal bore tubes. Specification from Mr. J. W. Allin, Gas Engineer, Chorley.

NOVEMBER 21. **Newcastle.**—PAINTING.—For the internal painting and decoration of the St. Nicholas' National Schools, Hanover-square. Specification from Mr. A. H. Dickinson, 62, Dean-street, Newcastle.

NOVEMBER 22. **Bradford.**—PAINTING.—For the inside painting, colouring, etc., at various schools in the City. Specification and form of tender from the City Architect, Town Hall, Bradford.

NOVEMBER 22. **Burnley.**—PAINTING, ETC.—For painting and decorating interior of Union Offices and caretaker's house. Form of tender from Mr. J. S. Horn, Clerk, Union Offices, Burnley.

NOVEMBER 22. **Newcastle-on-Tyne.**—PAINTING.—For the internal painting, colouring, and whitewashing of the City Hall. Specification from Mr. Nicholson, Headmaster, at the School.

NOVEMBER 22. **Toxteth Park.**—PAINTING.—For painting, etc., at the Workhouse, Smith-down-road. Mr. R. Albert James, Clerk to the Guardians, 15, High Park-street.

NOVEMBER 24. **Nottingham.**—PAINTING.—For painting the museum at Clifton Park. Specification from the Borough Engineer, Town Hall.

NOVEMBER 27. **Andover.**—FENCING.—For repairing guard railing near Cricklade. Specification, on deposit of 1l. 1s. from Mr. R. W. Knapp, Borough Surveyor, Andover.

NOVEMBER 28. **Tottenham.**—ROLLER WINDOW BLINDS.—The Tottenham Education Committee invite tenders for roller window blinds at Down-lane School. See advertisement in this issue for further particulars.

NOVEMBER 27. **London.**—TANK.—For the supply of a galvanised-iron closed tank, 12 ft. by 5 ft. by 4 ft. 8 in. to Public Baths, Leichner-road, Battersea. Plans and specification from Mr. W. Marcus Wilkins, Town Clerk, Town Hall, Levensham, W.

NOVEMBER 27. **Natal.**—PIPES, ETC.—For supply of 300 tons of 8-in. cast-iron pipes and special castings, sluice valves, surface boxes, and pipe outlet. Specifications and quantities from Messrs. Webster Steel & Co., London agents, 5, East India-avenue, Leadenhall-street, London, E.C. on deposit of 2l. 2s.

NOVEMBER 29. **Pool.**—PAINTING.—For painting and decorating works at the Wesleyan Methodist Church. Drawings and specifications from Mr. Sampson Hill, architect, Redruth.

ROADS, SANITARY AND WATER WORKS.

NOVEMBER 17. **Wycombe.**—TANKS, ETC.—Construction of temporary septic tanks and other appurtenant works. Plans and details seen, and specification, quantities, etc., on deposit of 1l. 1s. from Mr. B. L. Reynolds, Clerk to the Council, 19, Castle-street, High Wycombe.

NOVEMBER 18. **Immingham.**—SEWERS.—Construction of stoneware sewers, temporary pump well, and engine-shed. Plans, specification, and conditions seen, and quantities from Mr. A. Hobson, Engineer, 198, Leesby-avenue, Grimsby, on deposit of 1l.

NOVEMBER 20. **Bognor.**—MATERIALS.—For supply of materials. Particulars from the Surveyor, Mr. O. A. Bridges, High-street, Bognor.

NOVEMBER 20. **Glasgow.**—SEWER.—Construction of pipe sewer in Dalreest from Cook-street to West-street. Specifications and forms of tender at the Office of Public Works, 64, Cochran-street.

NOVEMBER 20. **Dunfermline.**—ROAD.—Forming and completing Back Cemetery Schedules from Mr. W. R. Maxwell, C.E., Engineer, City-chambers, Dunfermline.

NOVEMBER 20. **Keynsham.**—SEWER.—For construction of pipe sewer. Specifications and plans with Mr. H. M. Bennett, Surveyor, Old chamber, 98, Corn-street, Bristol.

NOVEMBER 20. **St. Austell.**—SEWER.—Supply of stoneware sewer pipes. Form of tender from Mr. E. D. Groves, Engineer and Surveyor.

NOVEMBER 21. **Scunthorpe.**—SEWAGE.—Construction of brick sewer, granite concrete septic tank, and lighting Milner-road. Plans and specifications with the Engineer, Mr. H. Walby, M.Inst.C.E., King-street, Nottingham. Quantities on deposit of 5l.

NOVEMBER 22. **Kingston-upon-Thames.**—ROAD.—For paving, flagging, channelling, setting, and lighting Milner-road. Plans and specification from the Borough Surveyor, Mr. R. Olueas, Municipal Offices, Kingston.

NOVEMBER 22. **Leith.**—SEWERS.—Construction of pipe sewers. Plans and specification from the Burgh Surveyor, Charlotte-street.

NOVEMBER 22. **Ulverston.**—WORKS.—For laying of the bed of the stream from the outfall of Urswick Tarn to Beckside, Little Crag. Plans and specifications from Surveyor to the Council, Town Hall, Ulverston.

NOVEMBER 23. **Bristol.**—PAVING SETTS.—Rejoining the paving sets at the City Market. Specifications from Mr. Peter Adair, The Exchange, Corn-street, Bristol.

NOVEMBER 23. **Killingworth.**—SEWER.—Laying pipe sewer, with construction of manholes, etc., also reconstructing present sewer. Plans and specifications from Mr. A. S. Dinning, 21, Ellison-place, Newcastle-on-Tyne.

NOVEMBER 23. **Oldham.**—STREETS.—For paving, flagging, channelling, setting, and lighting streets. Plans and specifications seen, quantities and forms of tender at the Borough Surveyor's Office.

NOVEMBER 23. **Tynemouth.**—SEWER.—For providing and laying of about 850 yds. of 12-in. pipe sewer, with construction of manholes, near Killingworth Station. Plans and specifications from Mr. A. S. Dinning, 21, Ellison-place, Newcastle-on-Tyne.

NOVEMBER 24. **Romford.**—STREETS.—Works of street improvement in Biggare-lane, laying surface-water sewer and filling in ditch in Brentwood-road; and piping and filling in ditch in Ardleigh Green-road. Plans seen, specifications, quantities, and forms of tender from Mr. Herbert T. Ridge, Council Office, Market-place, Romford, on deposit of 2l. 2s.

NOVEMBER 25. **Iford.**—GRANITE PAVING.—The Essex C.C. invite tenders for paving grey Royal granite blocks a section of Iford road, Iford. See advertisement in this issue for further particulars.

NOVEMBER 25. **Tottenham.**—WOOD PILING AND TAR PAVING.—The Tottenham Education Committee invite tenders for pitch pine flooring and tar paving at Down-lane School. See advertisement in this issue for further particulars.

NOVEMBER 27. **Burnley.**—STREET.—For paving, flagging, channelling, and kerbing new street through Ship-alley, and erecting retaining and boundary walls. Plans and specifications seen, and form of tender from G. H. Pickles, M.Inst.C.E., Borough Surveyor, Burnley.

NOVEMBER 27. **Filey.**—PIPES.—For the supply of about 1,200 yds. of 6-in., 4-in., and 8-in. S. cast-iron main pipes. Forms of tender from Mr. Henry Tobey, Engineer, Malton, Yorkshire.

NOVEMBER 28. **Neasden.**—SEWERAGE WORKS.—The Willesden D.C. invite tenders for works of sewerage and incidental works at Neasden-lane. See advertisement in this issue for further particulars.

NOVEMBER 29. **Birmingham.**—MATERIALS.—For supply of road material. Mr. J. W. County Surveyor, 6, Waterloo-street, Birmingham.

NOVEMBER 30. **Westbourne.**—FLINTS.—Supply of clean hand-picked field flints. Mr. Norris, Surveyor, West Ashling, Chichester.

DECEMBER 1. **Hendon.**—N.W. NEW ROAD.—Tenders are invited for construction of new road, with surface-water drain, about 1/2 in. length. See advertisement in this issue for further particulars.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be made to.
*VISITING TEACHER OF WOOD CARVING	London C.C.	See advertisement in this issue	Nov.
*ASSISTANT VISITING TEACHER OF SANITARY ENGI.	London C.C.	See advertisement in this issue	Nov.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*NEW AND SECOND-HAND MANTELPIECES, 13, HIGH HOLBORN On the Premises.	Hollingsworths	Nov. 18.
*HEAT AND GARDEN SUBS., HEATON AND SHIPLEY, YORKS.—Mechanics' Inst., Bradford.	Tyler & Co.	Nov. 18.
*DEALS, BATTENS, BOARDS, TIMBER, ETC.—Great Hall, Winchester House, E.C.	Churchill & Sim	Nov. 18.
*FREEHOLD AND LEASEHOLD LAND AND PREMISES, CROYDON At the Mart	F. W. Hobson	Nov. 18.
*FREEHOLD PROPERTY, OXFORD-STREET, W.	Edwin Fox, Bousfield, Burnetts, & Baddeley	Dec. 1.

ES CURRENT OF MATERIALS.

sim in this list is to give, as far as possible, the prices of materials, not necessarily the lowest, and quantity obviously affect prices—a fact to be remembered by those who make use of formation.

BRICKS, &c.		
Per 1000 Alongside, in River.	£ s. d.	
Stocks for Facings	1 13 0	
Per 1000, Delivered at Railway Depot.	£ s. d.	
Best Blue Pressed	£ s. d.	
Staffordshire	3 15 0	
Do. Ballhouse	4 0 0	
Best Staffordshire	4 0 0	
Fire Bricks	4 0 0	

BRICKS, &c.		
White, and Salt	Double Headers	13 17 6
Strich's 11 7 8	One Side and two	
Ballhouse	Ends	17 17 6
In Plate 14 17 6	Two Sides and	
one End		18 17 6
Splays & Squints		17 7 6
ond Quality £1 10s. per 1000 less than best.		

STONE.		
Per Ft. Cube.	£ s. d.	
Delivered on road wagons, a.d.		
ington Depot.	1 64	
delivered on road wagons, Nine Elms	1 84	

STONE.		
nd Stone (30 ft. average)—		
Whitbed, delivered on road wagons,		
ington Depot, Nine Elms Depot, or		
lino Wharf	2 3	
Baselbed, delivered on road wagons		
ington Depot, Nine Elms Depot, or		
lino Wharf	2 44	

STONE.		
er Ft. Cube, delivered at Railway Depot.	£ s. d.	
in blocks. 1 10	Closeburn Red	
in blocks. 1 6	Freestone	2 0
in blocks. 1 10	Red Mansfield	
Dale in 2 4	Freestone	2 4
Ordnance in 2 8	Thores & Gwespyr	
Ordnance in 2 8	Stone	2 8

SLATES.		
Per 1000 of 1200 at Railway Depot.	£ s. d.	
est blue	20x10 best Durka	15 17 6
to	20x12 ditto	17 7 6
quality	18x10 ditto	13 5 0
est blue	16x10 ditto	10 5 0
to	16x12 ditto	11 12 6
to	16x10 ditto	9 12 6
to	16x8 ditto	6 12 6

TILES.		
At Railway Depot.	£ s. d.	
red roof	Best "Hartshill"	£ s. d.
and Valley	brand, plain sand.	
and Valley	faced (per 1000)	50 0
and Valley	Do. pressed (per	47 6
and Valley	1000)	
and Valley	Do. Ornamental (per	50 0
and Valley	Staffordshire	50 0
and Valley	Valley (per doz.)	3 6
and Valley	Staffordshire (Hanley	
and Valley	Reds or Branded	
and Valley	(per 1000)	42 6
and Valley	Hand-made sand.	
and Valley	faced (per 1000)	45 0
and Valley	Hip (per doz.)	4 0
and Valley	Valley (per doz.)	3 6
and Valley	(per doz.)	3 0

WOOD.		
BUILDING WOOD.	At per standard.	
3 in. by 11 in. and 4 in.	£ s. d.	£ s. d.
and 11 in.	14 0 0	15 10 0
3 by 9	13 10 0	14 10 0

WOOD (Continued).

BUILDING WOOD (Continued).		
Battens: best 24 in. by 7 in. and 2 s. a. d.	£ s. d.	
5 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 24 by 6 and 3 by 6.	0 10 0	less than
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	
2 in. by 11 in. and 2 in. by 6 in.	9 10 0	10 10 0
2 in. by 4 in. and 2 in. by 5 in.	9 0 0	10 0 0
Foreign Sawed Boards—		
1 in. and 1 1/2 in. by 7 in.	0 10 0	more than
battens.	1 0 0	
First timber: best middling Danzig	At per load of 50 ft.	
or Marmal (average specification)	5 0 0	5 10 0
Second: first yellow deals	4 10 0	5 0 0
Small timber (6 in. to 8 in.)	3 17 6	4 0 0
Swedish balks	3 5 0	3 10 0
Pitch-pine timber (30 ft. average)	2 12 6	3 0 0
	4 10 0	5 5 0

JOISTERS' WOOD.		
White Sea: first yellow deals.	At per standard.	
3 in. by 11 in.	24 10 0	25 10 0
3 in. by 9 in.	22 10 0	23 10 0
Battens: 24 in. and 3 in. by 7 in.	11 10 0	12 10 0
Second yellow deals, 3 in. by 11 in.	19 0 0	20 0 0
" 3 in. by 9 in.	18 0 0	19 10 0
Battens: 24 in. and 3 in. by 7 in.	14 0 0	15 0 0
Third yellow deals, 3 in. by 11 in.	11 0 0	12 0 0
Do. 3 in. by 9 in.	10 0 0	11 0 0
Battens	14 0 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do. 3 in. by 9 in.	15 0 0	16 0 0
Battens	11 10 0	12 0 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
White Sea and Petersburg		
First white deals, 3 in. by 11 in.	15 0 0	16 0 0
" 3 in. by 9 in.	14 0 0	15 0 0
Battens	11 10 0	12 0 0
Second white deals, 3 in. by 11 in.	14 0 0	15 0 0
" 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
Pitch-pine deals	19 0 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Odiments	33 0 0	
Seconds, regular sizes	33 0 0	
Odiments	28 0 0	
Kral Pine—Planks per ft. cube.	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0	0 3 9
Small	0 5 6	0 6 0
Wainscot Oak Logs	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as	0 0 84	0 0 94
inch	0 0 7	
Dry Mahogany—Hounders, Ta-	0 0 10	0 1 1
basco, per ft. sup. as inch.		
Selected, Figury, per ft. sup.	0 1 6	0 2 6
as inch		
Dry Walnut, American, per ft.	5 0 10	0 1 0
super, as inch	18 0 0	22 0 0
Tank, per load	0 4 0	0 5 0
American Whitewood planks,		
per ft. cube	0 4 0	0 5 0

JOISTS, GIBBERS, &c.		
Per square.		
1 in. by 7 in. yellow, planed and	0 13 6	0 17 0
shot	0 14 0	0 18 0
1 in. by 7 in. yellow, planed and	0 13 6	0 17 0
matched	0 16 0	0 20 0
1 in. by 7 in. white, planed and	0 12 0	0 14 6
shot	0 12 6	0 15 0
1 in. by 7 in. white, planed and	0 15 0	0 16 6
matched	0 11 0	0 13 6
1 in. by 7 in.	0 14 0	0 18 6
1 in. by 7 in. white	0 10 0	0 11 0
1 in. by 7 in.	0 12 9	0 15 0
6 in. at 6 d. to 9 d. per square less than 7 in.		

METALS.		
Per ton, in London.	£ s. d.	£ s. d.
Iron—		
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good	8 15 0	9 5 0
merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basic price	9 5 0	9 10 0
" Galvanised	17 0 0	
(And upwards, according to size and gauge.)		
Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	
" 24 g.	10 15 0	
" 28 g.	11 15 0	
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	15 0 0	
" 24 g.	15 10 0	
" 28 g.	16 10 0	
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	15 0 0	
" 24 g.	15 10 0	
" 28 g.	16 10 0	

METALS (Continued).

IRON (Continued).		
Galvanised Corrugated Sheets—	£ s. d.	Per ton, in London.
Ordinary sizes, 6 ft. to 8 ft. 30 g.	14 10 0	£ s. d.
" 22 g. and 24 g.	14 15 0	
" 26 g.	15 0 0	
Best Soft Steel Sheets, 6 ft. by 24 ft.	12 0 0	
to 3 ft. to 20 g. and thicker	12 0 0	
Best Soft Steel Sheets, 2 g. & 24 g.	13 0 0	
" 26 g.	14 0 0	
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0
(Under 3 in., usual trade extras.)		

LEAD, &c.		
£ s. d.	£ s. d.	
LEAD—Sheet, English, 4 lb. and up	19 10 0	
Pipe in coils	20 0 0	
Soft pipe	23 0 0	
Compo pipe	23 0 0	
Zinc—Sheet	In casks of 10 cwt.	
Ville Montagne	34 0 0	
Silesian	33 15 0	
Zinc, in bundles, 1 s. per cwt. extra.		

COPPER—		
Strong Sheet	per lb.	0 1 0
Thin	"	0 1 1
Copper nails	"	0 0 10
Copper wire	"	0 0 10

BRASS—		
Strong Sheet	"	0 0 11
Thin	"	0 1 10
Tin—English Ingots	"	0 0 10
Solder—Plumbers'	"	0 0 04
Timmen's	"	0 0 11
Blowpipe	"	0 1 2

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*			
Per Ft., Delivered.			
$\frac{1}{8}$ Hartley's	2d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Bolled Cathedral, white	34d.
$\frac{1}{8}$ "	24d.	Ditto, tinted	5d.
$\frac{1}{4}$ "	24d.		

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*			
Per Ft., Delivered.			
1/2 Hartley's	24d.	Figured Rolled, Ox-	
"	24d.	ford Rolled, Oce-	
"	24d.	anic Arctic, Muffed,	
		and Rolled Cathe-	
		drato, tinted	34d.
* Not less than three crates.			

OILS, &c.		
£ s. d.	£ s. d.	
Raw Linseed Oil in pipes	per gallon	0 3 1
" " in barrels	"	0 3 2
" " in drums	"	0 3 4
Boiled,, " in barrels	"	0 3 4
" " in drums	"	0 3 7
Turpentine in barrels	"	0 6 0
" in drums	"	0 7 2
Genuine Ground English White Lead, per ton	25 0 0	
Lead, Dry	22 10 0	
Best Linseed Oil Faty	per cwt.	0 10 6
Stockholm Tar	per barrel	12 10 0

VARNISHES, &c.		
Per gallon.	£ s. d.	
Fine Pale Oak Varnish	0 8 0	
Fine Copal Oak	0 10 0	
Superfine Pale Elastic Oak	0 12 0	
Fine Extra Hard Church Oak	0 10 0	
Superfine Hard-drying Oak, for seats of	0 14 6	
Churches	0 12 0	
Fine Elastic Carriage	0 12 0	
Superfine Pale Elastic Carriage	0 16 0	
Fine Pale Maple	0 10 0	
Fine Pale Elm	0 10 0	
Extra Pale French Oil	1 1 0	
Eggshell Flating Varnish	0 18 0	
White Pale Enamel	0 18 0	
Extra Pale Paper	0 12 0	
Best Japan Gold Size	0 10 6	
Best Black Japan	0 16 0	
Oak and Mahogany Stain	9 9 0	
Brunswick Black	0 8 0	
Berlin Black	0 16 0	
Knottin	0 10 6	
French and Brush Polish	0 10 6	

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any communication to a contributor to write an article, or to execute or send a drawing for publication, is given subject to the approval of the Editor, who retains the right to reject received, by the Editor, who retains the right to reject if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100, unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

ABERYSTWYTH.—For erection of isolation wards, for the Corporation of Aberystwyth. Mr. Rees Jones, Borough Surveyor, Aberystwyth. Quantities not supplied.—
E. E. Jenkins .. £1,129 0 0
D. R. Williams .. 1,094 0 0
Owens Bros. 1,074 0 0
R. & H. L. Owen .. 968 0 0
E. Evans & Son .. 949 0 0

CHISWICK.—Proposed new school at Strand-on-the-Green, for the Urban District Council. Mr. Edward Wilkin, F.S.I., Architect to the Committee, Town Hall, Chiswick. W. Quantities by Messrs. Northcroft, Neighbour, & Nicholson, 338-331, Birkbeck Bank-chambers, High Holborn.—
Pastorfeldt & English .. £5,844
B. Colley & Sons .. 6,240
T. Millman .. 6,150
J. Chesson & Sons .. 5,967
E. Lawrence & Sons .. 5,833
A. & B. Hanson .. 5,790
G. Bolom .. 5,789

DOUGLAS (I.O.M.).—For erection of a block of dwellings. Mr. F. Cottle, Borough Surveyor, Town Hall, Douglas, I.O.M.—
F. Cottle & Sons, York-road, Douglas, I.O.M. £3,188 14 6

FRASERBURGH.—For alterations to Rathen Public School. Mr. W. E. Gould, architect, Saltoun-chambers, Fraserburgh. Quantities by architect.—
Nason, J. Scott, & Lomay .. 4,130 17
Jenny, G. C. Cassie, Cairnburg .. 4,130 17
Plumbers R. Tindall & Sons, Fraserburgh .. 4,130 17

HULL.—For erection of stables, etc., in Chapman-street-yard. Mr. J. H. Hirst, City Architect, Town Hall, Hull. Quantities by architect.—
H. Johnson .. £3,119 11 3
C. Greenwood .. 3,919 8 6
A. Lison .. 2,896 0 0
J. Simpson & Sons .. 2,800 0 0
G. Jackson & Sons .. 2,783 0 0
T. Gotes & Sons .. 2,770 0 0

LANGHOLM.—For constructing intake works, laying 7 miles of 7 in., 6 in., 5 in., 4 in., and 3 in. cast-iron pipes, construction of 250,000 gallon reservoir, etc., for augmented waterworks. Messrs. Taylor & Wallin, civil engineers, Newcastle-on-Tyne.—
J. Urquhart .. £5,769
Brown & Kincald .. 6,375
G. E. Simpson .. 6,134
D. Gibson .. 6,103
A. Blair .. 6,103
J. Martin .. 6,040
J. A. Macgargart & Co. 6,004
P. Mitchell & Son .. 5,990
J. Hope .. 5,985
E. C. Dreher & Co. .. 5,911
Henderson & Duncan .. 5,888
Jackson & Anderson .. 5,831

LONDON.—For alterations and additions to Pretoria-avenue Girls' School, Walthamstow, N.E. Mr. H. Prosser, Architect to the Education Committee. Quantities by Mr. G. T. G. Wright, 3, Great Winchester-street, E.C.—
Abbot & Charlton .. £1,571
A. E. Symes .. 1,379
Rowley Bros .. 1,250
Lawrence & Sons .. 1,187
A. G. Barton .. 1,181
R. & E. Evans .. 1,178
A. Monk .. 1,175

Brand, Pettit, & Co. .. £1,169
P. J. Costhead .. 1,142
W. J. Maddison .. 1,079
Hammond & Son .. 1,069
J. J. Sands .. 1,060
J. & J. Dean, Walthamstow* .. 900

LLANTWYLL FARDRE.—For construction of stone-ware pipe sewers at Crown Village. Mr. Thomas Saunders, surveyor. Quantities by surveyor.—
W. Thomas & Sons .. £387 4 2
W. Davies .. 759 11 1
A. G. Collins & Co. .. 678 14 0
G. L. Morgan .. 677 14 7
I. E. Owers .. 692 14 11
W. Cox .. 698 12 2
W. H. Hill .. 654 19 9

MORECAMBE.—For erection of a villa residence in Hawarden-avenue, Morecambe, Lancashire, for Mr. A. Christie. Mr. A. Gorton, architect, "Ye Flaxey," 23, Queen-street, Morecambe.—
Edmondson Bros., Green-street .. £323
[For all trades. Other tenders within a few pounds.]

NEWTON ABBOT.—For construction of a cold-chamber at the workhouse, for the Guardians of the Poor of the Newton Abbot Union. Mr. Segar, architect, Union-street, Newton Abbot. Quantities by architect.—
H. Mills .. £475
L. Bearn, Newton Abbot* .. 72

NEWTON ABBOT.—For additions to the nurses' home and laundry at the workhouse. Mr. Samuel Segar, architect, Union-street, Newton Abbot. Quantities by architect.—
H. Mills .. £475
L. Bearn, Newton Abbot* .. 72

ADDITIONS TO NURSES' HOME.
W. H. Taylor .. £270 0 0
Parker Bros. 549 0 0
H. Drew .. 346 0 0
L. Bearn .. 331 8 9
H. Mills .. 489 0 0
Wilkins & Sons .. 450 0 0

ADDITIONS TO LAUNDRY.
L. Bearn .. £293 8 6
W. H. Taylor .. 388 10 0
H. Drew .. 285 0 0
Parker Bros. 274 0 0
H. Mills .. 270 0 0

SALISBURY.—For building a bridge at East Gristead, and making up the levels to the bridge, etc. Messrs. J. Harding & Son, architects, 58, High-street, Salisbury.—
T. Dawkins .. £260 0
E. H. Pragnell .. 252 16
H. Tryhorn .. 217 0

SELBY.—For flooring over swimming-bath at the public baths, for the Urban District Council. Mr. Bruce McG. Gray, F.R.S. Edin., A.M. Inst. C.E., Council Offices, New Street, Selby. Quantities by Engineer.—
Myres & Wood .. £139 0 0
W. Ludlow .. 288 0 0
C. Higgins .. 255 0 0
E. Coull .. 244 12 11
Selly* .. 195 7 10

J. J. ETRIDGE, JR.
SLATE MERCHANTS. LTD.

**EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.**

Telephone 2685 Wall, or write—
**BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.**

UXBRIDGE.—For erection of a public lavatory the Market House, Mr. W. L. Eves, Council Surveyor, 54, High-street, Uxbridge.—
Fassnidge & Son .. £164 0 0
Burford & Son .. 180 0 0
W. J. W. Wilkinson .. 149 17 10
H. E. & G. Pratt, Uxbridge* .. 137 0 0

**Ham Hill Stone.
Doulting Stone.
Portland Stone.**

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams
16, Craven-street, Strand.

Asphalte.—The Sossel and Metallis Ltd.
Asphalte Company (Mr. H. Glenn), Office, Pontyrry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and m. rooms, granaries, tun-rooms, and terraces.
Asphalte Contractors to the Forth Bridge

**SPRAGUE & CO., Ltd.,
LITHOGRAPHERS,
Employ a large and efficient Staff especially
Bills of Quantities, &c.
4 & 5, East Harding-st., Fetter-lane, E.C.**

**BILLS of QUANTITIES
ELECTROGRAPHIC
Quickly, ACCURATELY
Cheaply.**

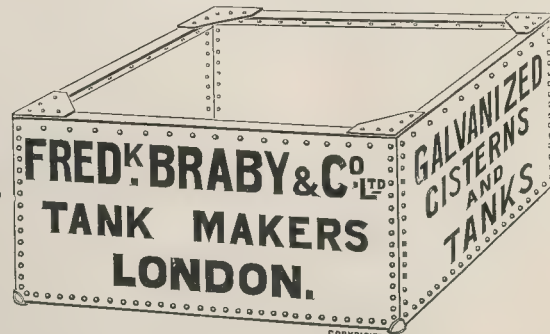
E. G. BUCK, 16, Farnival St., Holborn, LONDON,
Telephone: Holborn 2356.

**JOINERY,
of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.
ESTIMATES
OF APPLICATION.
COLCHESTER
Telephone: 6196. Telegrams: "Orfeur, Colchester."**

**PILKINGTON & CO.
(ESTABLISHED 1839),
DEPTFORD WHARF,
180 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).**

Polonceau Asphalte
PATENT ASPHALTE AND FELT ROOFING
ACID-RESISTING ASPHALTE.
WHITE SILICA PAVEMENT
SEYSSSEL ASPHALTE (Direct from the Mine)

ALSO AT DEPTFORD,
LIVERPOOL, BRISTOL.



Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

GLASGOW, FALKIRK,
BELFAST, & DUBLIN

THE BUILDER

VOL. CL.—No. 3590.

NOVEMBER 24, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
CONTROL	591	MONTHLY REVIEW OF CIVIC DESIGN:—		MAGAZINES AND REVIEWS	615
ON'S STANDING GRIEVANCE	592	THE ART COMMISSION OF NEW YORK (WITH		METROPOLITAN ASYLUMS BOARD.....	615
.....	592	ILLUSTRATIONS)	605	LEGAL COLUMN	616
ROYAL INSTITUTE OF BRITISH ARCHITECTS		VANDALISM AT SHEFFIELD (WITH ILLUSTRATION)	606	LAW REPORT	616
THE ILLUSTRATIONS)	593	NOTES	607	LONDON COUNCILS	617
STRUCTURAL SOCIETIES	597	THE BUILDING TRADE:—		FOREIGN AND COLONIAL	617
ENGINEERING SOCIETIES	598	RECENT WORKMEN'S COMPENSATION CASES	609	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	618
TEMPORARY ARCHITECTS: MR. WALTER CAVE,		LAND TAX VALUATION	610	PATENTS	620
R.I.B.A. (WITH ILLUSTRATIONS)	596	THE BUILDERS' BENEVOLENT INSTITUTION		SOME RECENT SALES	620
NEW ENGLISH ART CLUB	601	(ANNUAL DINNER)	610	PRICES CURRENT	620
LOCAL NEWS	601	GOVERNMENT CONTRACTS	611	TENDERS	621
.....	602	GENERAL BUILDING NEWS.....	611		
RESPONSE	602	APPLICATIONS UNDER LONDON BUILDING ACTS,			
COMMUNICATION COLUMN.....	633	1894 TO 1908	612		
EDITORIAL SUMMARY	604	PROJECTED NEW BUILDINGS IN THE PROVINCES	612		
.....	604	THE BRITISH SCHOOLS OF ROME AND ATHENS	613		
EDITION NEWS	604	THE SOCIETY OF ARCHITECTS	613		
LONDON COUNTY COUNCIL	604	THE INSTITUTE OF SANITARY ENGINEERS (ANNUAL			
IS TO ILLUSTRATIONS	604	DINNER)	614		
Y YEARS AGO	604				

Illustrations.
SOME WORKS BY MR. WALTER CAVE, F.R.I.B.A.
ARCHITECT:—
LITTLE COURT, FARTHINGSTONE, NORTHANTS :
ENTRANCE FRONT AND VIEW FROM SOUTH-EAST.
ROCHE COURT, FAREHAM.
BENGEO HOUSE, HERTFORD: GARDEN FRONT.
THE ÆOLIAN HALL.
ST. AUSTIN'S, LYNNINGTON.



Ewelme Down, Wallingford: The Entrance Court and Part of the Terrace. (See page 598.)
Mr. Walter Cave, F.R.I.B.A., Architect.

DIVIDED CONTROL.

THE necessity for the creation of a central authority having undivided control over the whole of the streets of the Metropolis is again most aptly illustrated by the latest performance of the City Corporation with reference to the proposed widening of New Bridge-street. Taking advantage of a rebuilding at Aldgate-hill Station, and of the fact that the leases of the houses on the one side of the road are now falling in, the London County Council suggested the widening of this side of the street. According to the *Times*, there is, however, a belief among members of the Corporation that the desire of the London County Council to see this widening carried out is bound up with the policy of uniting the Embankment tramways with the North London system, one minus of which is at Farringdon-street station. This is, no doubt, the reason

which has led the Improvements and Finance Committee to recommend the Corporation not to undertake the continuation of the widening of New Bridge-street, and to suggest that the station improvement only be agreed to.

We are told that there is a feeling against a tramway in New Bridge-street, and that this refusal to widen the road is supposed to remove any immediate danger of such a scheme being carried out; but we are not told upon what grounds either this feeling or this action is justified.

However much we may regret this incident, we cannot pretend to be altogether surprised to learn that the Corporation has refused to carry out a beneficial improvement for fear that it may lead to one more beneficial still.

It is just possible that if anyone should see a connexion between this incident

and the difficulties that have arisen over St. Paul's Bridge, no great injustice would be done to the Corporation, although, no doubt, it would be an injustice to attribute this conduct solely to a feeling of resentment at the action of the London County Council in referring back St. Paul's Bridge for further consideration, and so "shamefully breaking faith with the City." It is sufficient to recognise that even the City Corporation may sometimes think it advisable to be consistent. Having put forward St. Paul's Bridge and tunnel as a good enough through traffic route for the trams, the consistency of sticking to their guns is apparent. It is equally obvious that if the trams are linked up by way of New Bridge-street and Farringdon-road there will not be the same need to take them over St. Paul's Bridge. Where, then, would be the necessity for the

viaduct over Queen Victoria-street, and what would become of the arguments in favour of many other details of the scheme as it now exists? It seems perfectly evident that in the interests of St. Paul's Bridge any alternative route must be severely discouraged even at the cost of local improvements.

The only encouraging aspect of this regrettable incident is the evidence it affords that the London County Council is beginning to realise that the Blackfriars route is the inevitable one, and that this feeling is so apparent and is growing so strong as to alarm the City Corporation for the ultimate success of the St. Paul's Bridge negotiations.

There may perhaps be cause for alarm, for if as time goes on the London County Council comes to the definite conclusion, as we firmly believe it will, that the Blackfriars route is from every point of view the best one for the trams, its obvious duty would be to select the best and not waste public money on an inferior one. It certainly would find it rather difficult to justify its action if with the wider outlook which comes of a fuller knowledge of the necessities of the case it deliberately ratified tentative arrangements discussed from what proves to have been a limited point of view which failed to take into account the whole of the possibilities of the situation.

We notice that it is reported in the City that the Corporation will proceed with their scheme, relying on the probability of a change of party at the London County Council in the near future. Be this as it may, we apprehend that the same consideration will apply to the action of either party, and that in the end this question must be settled on its merits. But whether it can ever be properly settled while two different authorities are allowed to wrangle over it, with still another—the Home Office—putting in a word or two when it sees an opportunity, is certainly open to doubt. One authority or the other should be supreme, and that one, judging by their past record, should not be the City Corporation.

LONDON'S STANDING GRIEVANCE.

MR. RICHARD WHITEING, while acknowledging in the columns of the *Daily Chronicle* that London grows better worth looking at as time goes on, complains that no one has a proper chance of "taking it sitting down" owing to the lack of outdoor seats.

Realising that the few now existing are mostly occupied by unclean and unwholesome people, to the prejudice of the clean and wholesome, he proposes a remedy.

"If," he says, "there were more seats, there would soon be not enough tramps to go round for the misuse of them." Then, "If a few corpulent persons of the first social or intellectual importance . . . could be induced to sit on the pavement for a few hours every day, the thing would soon be done."

There may, we admit, be something in this idea. Obviously there must be a definite limit to the number of tramps in

the country, while the supply of seats, unless the political economists have mislead us, is only limited by the demand. We must not, however, forget that although the supply of tramps may be strictly limited, so is the available space in the streets and the financial resources of London.

Perhaps the subject is not so simple as it seems. Without venturing to do more than express a doubt as to the capacity for martyrdom of corpulent persons of importance, we might perhaps be permitted to point out that Mr. Whiteing appears to have overlooked the fact that the final solution of this problem does not depend so much on the number of tramps to go round as on the number of seats that a single tramp, or any ascertained number of tramps, can go round in a given time—misusing them all as he goes.

The tramp, as Mr. Whiteing suggests, may be a professional loiterer, but if there is anything in a name, if practice makes perfect, and inherited aptitudes count, then he should be a past-master in the art of going round. A little tramp goes round a long way and so defiles many a seat.

In the absence of official statistics we hesitate to express an opinion on the precise extent of his capabilities in this direction. We should not, however, be altogether surprised to find that even though every street was lined with seats, our present supply of able-bodied tramps—kept up to the mark and continually moved on by an efficient and intelligent police—might still be enough to go round for the misuse of them all, while corpulent persons of importance might still remain seatless and still be obliged to live, as Mr. Whiteing expresses it, "down to the tastes of our most forlorn."

This, indeed, is what we all have to do, and not only in the matter of seats does our social outcast influence our towns and the arrangement and details of our buildings.

Nothing perhaps in the history of architecture is more interesting to the sociologist than the provisions made for or against the outcast, and the way in which they are gradually relaxed as the general up-lift of society lessens his numbers and his power for evil. But even in this year of grace no one can yet build entirely to his own tastes, but, perforce, must build and live down to those of the most forlorn. Numerous details of arrangement and of structure in all our buildings are dictated solely by this necessity. But although they might not all be obvious to Mr. Whiteing's "harvester of the quiet eye," even he could hardly fail to notice how eloquently this disagreeable necessity is expressed by the row of broken bottles so often to be seen on the garden walls.

From this, as from every other point of view, the tramp is an expensive luxury. Again, in the absence of statistics we should hesitate to say how many miles or hundreds of miles of brick walls and iron railings owe their existence to his presence, or what the capital outlay and annual upkeep of the same might be. More than the tramp is worth, of that we may be sure. But if Mr. Whiteing is not afraid to suggest that our most forlorn are not so objectionable as we are apt to think, we will not shrink

from suggesting that neither are they dangerous or so destructive, and that might well save the cost of the annual upkeep of miles of iron railings in London alone, and devote it instead to remedy what Mr. Whiteing considers is London's standing grievance.

NOTES.

The British School at Rome.

THE generosity of the Municipality of Rome in presenting the site of the British Building at the

year's exhibition, and of Colonel Charles Humphreys in giving the structure, which the façade was designed by J. Lutyens, will enable a good start to be made in extending the activities of the British School at Rome. Up to the present the School has mainly devoted itself to archaeological study, but the future of the arts generally will come within its scope. It can hardly be said that the present building is in every way suitable for a school; the galleries are spacious, but do not afford much protection against extremes of temperature, so that they will demand improvement in this respect as soon as funds are available for the purpose. Perhaps the most interesting feature in the programme is the selection on the Council of representatives of the Royal Academy, the Royal Institute of British Architects, and the Royal Society of British Sculptors, which seems to point to a recognition of the true face of the case in regard to the position of the first-named body. To all intents and purposes the Royal Academy is a painters' society controlled by painters with but an occasional side-glance at the other arts. We all like to picture it as the glorious head of the three arts, nominally represents, even while we know in our hearts that it is nothing of the sort; but such make-beliefs are dangerous, and it is well that at last we see it understood that there are other bodies better qualified to take charge of the arts of architecture and sculpture. Professor Reginald Blomfield in a letter in the *Times* of November 23 makes some cogent remarks on the aims of an Architectural School in Rome, and in view of the importance of a correct appreciation of these, we shall return to this question in a future issue.

Permanent v. Temporary Schools.

THE question of cheap buildings for school purposes seems to resolve itself into whether it is a better policy to build, say, a period of twenty or thirty years at half the cost or to provide a building that may be regarded as structurally permanent. Looking at the question from the economic standpoint and taking into consideration the fact that our views on educational methods are present in a very plastic state, there can be no doubt that the verdict must go in favour of the temporary building. But there is another and more important aspect than this. Is not architecture itself an important factor in what may be termed unconscious education? A temporary building can make no appeal to the æsthetic instinct a valuable aid in the work of the teacher is thrown



The "Monument aux Morts," Père Lachaise Cemetery, Paris.
M. Bartholomé, Sculptor.

ay. We are more and more recog-
ing the necessity of contact with
utiful and interesting surroundings
cultivating the taste of our future
izens, and if the whole work of educa-
n is to be conducted in a group of
fected sheds, but little is to be hoped
from occasional excursions to scenes
"atural beauty and historic
erest." Of course, if our architects
skilful enough to design temporary
ldings that are beautiful in their own
y, and are encouraged to do so,
s objection will be satisfactorily
posed of.

Minter v. Waldstein. The long-drawn-out case
of Minter v. Waldstein
having been taken, we
derstand, to the Court of Appeal, the
erits of the case are not yet subject
comment, but the judgment of the
ocial Referee appears to emphasise
ne points of law to which attention
ght well be drawn. Clause 3 of the
stitute form of agreement provides
at, in the event of the original architect
using to act, the architect for the pur-
oses of the contract shall be such other
erson as shall be nominated for that
urpose by the employer. It is now laid
wn that, although the employer may
harge the architect during the progress
the works, and so terminate his
thority under the contract, this clause
es not permit the employer to termi-
ate the architect's authority to issue
ificates for work already carried out
der his control while he still held
thority under the terms of the contract.
is judgment seems to be in accord
th the general meaning and spirit of
e last sentence of Clause 3, but it is
st as well to have the point definitely
ared up in a court of law.

Variations that prejudice the Building. ALTHOUGH by Clause 12
of the Institute Schedule
of Conditions of Contract
the contractor shall, when
thorised by the architect, or as
rovided by Clause 5, vary by way of

extra or omission from the drawings
or specification, yet this does not
authorise the contractor to depart from
the terms of the contract so as to pre-
judice the strength and stability of the
building. The acquiescence of the archi-
tect as to variations in structure or
quality of materials does not absolve the
contractor from his contract to carry out
the specification on these heads. As
the Institute Conditions of Contract
appear to direct the contractor, not
merely to permit him, to vary the
drawing and specification as the archi-
tect may desire, the position seems to
be an anomalous one, and the con-
tractor appears to have no other course
open to him but to take the risk of
throwing up his contract when directed
to vary it in a way which, in his
opinion, will prejudice the structure.
It is evident that before entering into
any contract he must satisfy himself
that it is possible to carry it out in every
respect.

Designer and Producer. ARCHITECTS are accus-
tomed to the neglect of
the popular Press, and it
does not take them by surprise when
one of their buildings is described, and
perhaps illustrated, to find that the man
who says a few words as he taps the
foundation-stone or turns the ceremonial
key is regarded of more importance than
the designer of the work. We note,
however, that architects are not alone
in this respect. Many of the daily
papers have been giving illustrations of
Royal Christmas cards, and, in the
majority of cases, they have evidently
considered the man who prints and sells
the card as of far more consideration
than the one who is responsible for the
design. That the character of these
works is not better than we find it is
obviously due to the popular disregard
of the personality of the designer and the
exaltation, at his expense, of the firm that
produces, sells, and presumably adver-
tises, the wares that are based on his
imaginative conceptions.



A MEETING of the Royal Institute of
British Architects was held on Monday at
No. 9, Conduit-street, W., under the Chair-
manship of the President, Mr. Leonard
Stokes.

The Chairman called attention to the fact
that the next business of the Institute was
a business one which was supposed to give
opportunities for the ordinary members to
bring forward any questions they wished
ventilated. The agenda paper for the next
meeting on December 4 was empty at present,
and therefore the meeting would afford
members an opportunity to bring forward
any matter.

Deceased Members.
Mr. H. T. Hare, Hon. Secretary, said he
had to announce the decease of Mr.
Edwin Austin Abbey, R.A., Hon. Associate,
elected 1905. Mr. Abbey's work was such as
particularly to appeal to architects, inasmuch
as it was work more or less of a decorative
nature, and the Institute had sustained a
very great loss in his death. They had also
lost Mr. D. G. Driver, Secretary for the last
twenty years of the Architectural Associa-
tion. A great many of their members had
been associated more or less intimately with
the Architectural Association, and they would
realise how serious was the loss sustained,
and how difficult it would be to fill Mr.
Driver's place adequately. The death had
also occurred of Mr. W. Forrest Salmon,
Fellow, elected 1876, who was Past-President
of the Glasgow Institute of Architects and
for some time a member of the Council of
the Institute.

A vote of condolence to the relatives of the
deceased gentlemen was carried.
Mr. Hare further announced the decease
of Mr. W. H. Hill, elected a Fellow in 1888;
Mr. James Pigott Pritchett, elected a
Fellow 1865; Mr. G. Ransome, elected an
Associate 1880 and Fellow in 1906; and
Messrs. J. Davidson and H. E. East,



"Architecture": Statue for the Tomb of the Architect Guérinot.
M. E. L. Burrias, Sculptor.

Licentiate. Obituary notices of these gentlemen had appeared in the *Journal*.

Gift to the Institute.

Mr. Hare further announced that Mrs. Arthur Cates had presented to the Institute a handsome mahogany cabinet, containing a large collection of photographs, particularly of buildings in Italy. He had had the privilege of looking over the photographs, and could assure them that it was a most valuable collection.

A vote of thanks was accorded the donor.

MODERN FRENCH SCULPTURE.

Mr. H. H. Statham then delivered a lecture on this subject, and showed a large number of excellent lantern slides in illustration. In the course of his preliminary remarks he said:—

"When my friend Mr. Spielmann gave us his interesting illustrated paper, three or four years ago, on modern English sculpture, it occurred to me that it might very well be followed, at a convenient season, by an illustrated paper on modern French sculpture. Perhaps this paper would have come more suitably, as it was first intended, at the close of the session, since it is not a strictly architectural subject; but I was asked to read it now to take the place of another, the author of which could not be ready in time; and, after all, sculpture is the art most closely connected with architecture, being, as I heard a sculptor once remark, 'only a higher form of masonry.' But this was said at a meeting of architects.

That some notice and illustration of modern French sculpture is not uncalled for is evident from the fact that, as a general rule, I have found that the only name that any one knows in England is that of Rodin. I went into a well-known art photographer's to ask if they had any photographs of modern French

sculpture, and was told—"Rodin? Oh, yes, we have a number!" And the same was the result at the London branch of a French art photographer's; in each case they had a whole portfolio of Rodin's works, and of all the other eminent sculptors of France only some half dozen stray photographs; and why that was, the usual law of supply and demand of course explains. As to the origin and the reasonableness of what I call "the Rodin craze" I have something to say just now; in the meantime I would merely remark that, if people on this side of the Channel really believe that French sculpture of to-day is summed up in the works of M. Rodin, it is high time they were told differently. I wonder sometimes whether those who profess to be interested in contemporary art, but who never take the trouble to visit the Salon—whether they realise what the annual Sculpture Exhibition at the Salon means. It means that for at least a quarter of a century back, first in the great central court of the old Palais de l'Industrie (originally built for the 1878 Exhibition); then in the vast space covered by the roof of the *Galérie des Machines*; lastly in the great central court of 1900, there has been seen every year a collection of between eight and nine hundred new works in sculpture; some of them no doubt commonplace in conception, some of them perhaps rather *outré* and violent in composition; but all, I think, up to a high standard of technical execution; and a considerable number of them, every year, representing both in conception and execution the highest style of sculptural art. I do not think the whole history of art can show such an extraordinary evidence of artistic energy and

* The Old Salon this year contained 868 works, the New Salon (in which sculpture is less prominent) 354, making a total of 1,222 works produced for one year's exhibition only.

vitality as is displayed in these successive annual exhibitions of French sculpture. I should like to quote a few words that I wrote in closing a review of the Salon of 1890:—

"Taking this as a representation of French sculpture for one year, and comparing it with our little show at the Royal Academy, the contrast is extraordinary enough; and the evidence of mental vigour and power of invention, as well as of execution among French sculptors, is equally extraordinary. We are confronted by new ideas, new treatments, and new force and meaning imparted to old subjects; we are gaining new poetic conceptions of those subjects; and this not only in isolated instances, but in the case of a large proportion of the works exhibited."

If there has been a certain degree of decline in French sculpture the last few years—and I am afraid there has—still, I think the impression here recorded as to its intellectual interest would be true in the main up to the present moment. It must be admitted, however, that 1890 was rather an exceptional year; that 1894 are the two greatest years I remember in Salon sculpture. But I think I shall be able to show you enough illustrations to-night to justify the feeling expressed in my record of 1890.

Now, what do we look for in sculpture? First and pre-eminently, perfectly modelled form, sculpture being the art dealing with form only, without the assistance of colour and perspective; for even relief sculpture is not so much perspective as the superposition of two or more planes of delineation. And hence the nude figure will always be the highest effort and ambition of the sculptor, first, because there alone it is that form has to be refined to the utmost; and, secondly, that the figure, delivered from the conventional bondage of costume, becomes an abstract thing, not tethered to time or place. And though mere beauty in a figure is in itself enough to justify sculpture, this abstract figure may also be made the means of symbolising an abstract idea, so that sculpture may in that sense become, what Matthew Arnold said poetry ought to be—"a criticism of Life." And it is for the frequent recurrence of this effort to symbolise thought that French sculpture of the modern period is, among other qualities, especially remarkable. And to furnish such a material to be prostituted to the carving of tailoring and millinery.

The expression of abstract idea through abstract form is then the highest mission of sculpture. Beyond or below that, what possibilities are there? The actual form and presence of memorable personages, in their habit as they lived, can be commemorated in bronze, though not suitably in marble; or which is far better, the portrait head alone can be represented, in bronze or marble, accompanied by figures symbolical of the character and career of the person commemorated, which is the favourite way with the French; and here we come round again to the abstract ideal. Sculpture may represent, also, significant facts and forms from the life of its own day, especially those which are typical rather than merely incidental; though this is a function of sculpture to be used with caution and reserve, lest it should degenerate into mere realism and playing to the gallery. Of all these various functions of the art of sculpture you will see examples in the illustrations I have to show you."

Mr. Statham proceeded to exhibit above a hundred illustrations of the works of modern French sculptors, the first being the dance scene of Carpeaux on the front of the Paris Opera House, which the lecturer did not altogether admire, but thought it illustrated the intensity which the French threw into such

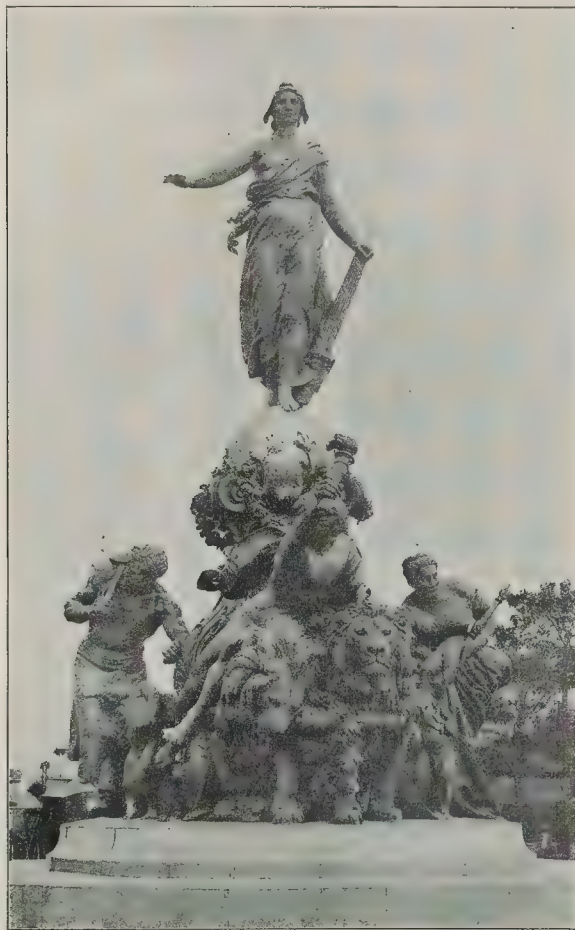


Clairon Monument — Condé-sur-Escaut.
M. Gasquid, Sculptor.

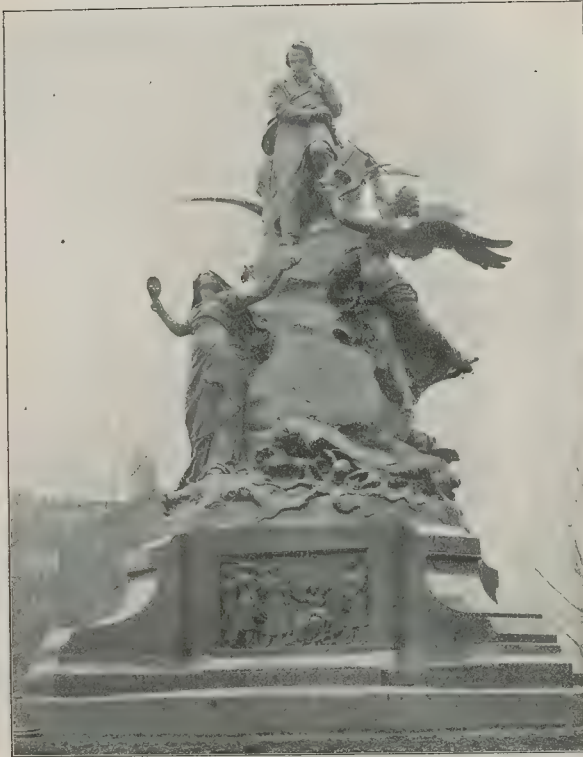
ds of things. Dealing next with some of men who were no longer amongst them, said the greatest was Charpentier, with figures of "Courage" and "Jeanne rc." There was also the monument of Reg- M., in the Ecole des Beaux-Arts, by Henri upu; the monument of Victor Hugo (a le bombastic), the monument to the de- ce of Paris, and the symbolical figure of architect done for the tomb of an archi- t by E. L. Barrias. He liked the last t. From Dalou they had the very spirited ed of Jeanne Darc, "A Peasant Woman rsing Her Infant," "Triumph of the public" (a colossal group standing in the ce de la Renaissance), and the monument Delacroix. He thought Dalou rather over- ed, as he was too boisterous in his sculp- e. Falguère was a much greater man. He produced the "Woman and Peacock," a later in life painted a picture of the man and called it Juno. J. L. Gérôme. o took to painting in his later years, repre- ted a type of genius which was rather uliarly French—the genius of absolutely ect technique without the slightest senti- nt. Everyone was impressed with the nique, but nothing appealed to the feel- s. One of his best works was the figure of ernal Bonaparte. Coming to the men who re still alive, Mr. Statham said he thought y must consider Antonin Mercié as at the ad of French sculpture—he could do every t of thing, and do everything well. The t thing he had produced was "Liberty" this year's Salon. "Souvenir" represented hing he had done largely, viz., figures for eeral monuments. His statue of Louis ilippe and his Queen was not good. His tne of Alfred de Musset stood close to the rement of the Rue de Rivoli, and looked y much out of place. He had lately taken producing subjects of peasant life, of ich the "Old French Dance" was an

illustration; but one of his finest things was the working "Gloria Victis," which was hidden in the courtyard of the Hôtel de Ville. When the Hôtel de Ville was being rebuilt after the war it was difficult to represent victory, and so the sculptor conceived the fine idea of representing victory bringing home a wounded soldier. Gustave Michel was responsible for "Dans la Réve" and "La Pensée." Then he came to two men of the same name. Alfred Boucher and Jean Boucher, who were not relatives. In 1907 Alfred Boucher did "La Pensée" and "A Girl in the Fields." M. Puech was one of the most erratic of sculp- tors and produced a bas-relief of a "Youth carried off by a Siren." Jean Hugues was responsible for "Les Danaïdes" and "Muse de la Source." M. Moreau's "Exiled" was, he considered, a fine expression of modern feeling in sculpture. M. Vital Cornu had been very successful in the treatment of the nude figure, and that of a sleeping girl, in the Salon of 1888, was much admired. Very different sculpture from this was that of M. Frémiet, who was a sculptor of a great deal of power, but, like Gérôme, with no senti- ment whatever. In one of the Salons about fifteen years ago he had a most powerful but horrible thing—"A Gorilla carrying away a Woman." His portrayal of Jeanne Darc was very good. In 1893 he was going through the sculpture court of the New Salon, and came across Bartholomé's work, showing a man and woman looking into a tomb, and he came at once to the conclusion that here was a new

sculptor of genius. In 1894 the work of the "Monument aux Morts" at Père Lachaise was finished, and it was one of the finest productions of modern days. In 1898 the com- mittee for erecting the marble statue to Balzac commissioned Rodin to make a study, and he produced the thing which was on the screen. People joked about it for a few weeks, and then said it was one of the greatest works of the day. Journalists scented copy, and Rodin became the craze, with the result that a committee of gentlemen bought his "John the Baptist" for this country, which was not fair to either the sculptor or the public, as it was not a good specimen of his work. He was glad to say it was kept in a dark corner at South Kensington. A full- sized clay model of it was exhibited in Picca- dilly thirty years ago, but people did not rush then to see it, for there was no Rodin craze. He thought Rodin was a remarkable sculptor long before the Rodin craze, but he com- plained that his ideas were not elevated. In his opinion the finest thing Rodin ever did was his statue of Victor Hugo. The lecturer proceeded to show Hector Lemaire's "Offer- ing at the Altar of Love"; Peyre's "Offering to Venus" and his bas-relief of "Har- monies"; Monod's bas-relief group, "La Revue du Poète"; Gasq's "Hero and Leander"; Felix Charpentier's "Adieu d'une Hirondelle"; Felix Sicard's "Eve," and other imaginative works. M. Hippolyte Lefebvre was the foremost man at modern costume, and gave in 1905 "A Paris Lady,"



"The Triumph of the Republic," Paris.
M. Dalou, Sculptor.



The Victor Hugo Monument, Paris.
M. E. L. Barriss, Sculptor.

which was cleverly done, although sculpture did not lend itself to that kind of thing. This was followed in 1907 by "Winter." His portrait of Cardinal Richelieu showed he could do other work. M. Blondat thought it permissible to be humorous in his work, as was shown in his fountain, where three girls are laughing at three frogs. Other monuments exhibited were Auguste Maillard's statue to Fragonard, Dalou's statue to Le-laire, Mercie's statue of Armand Silvestre the poet; Verlet's statue of Maupassant; and, as examples of architectural sculpture, Theunissen's four figures of the Seine and its tributaries. The lecturer proceeded to deal with a group of works representing extract ideas, including Blondat's "Grief"; Longepied's "Immortality"; Gustave Michel's "Form Disintegrating Itself from Matter" and "Contemplation of the Infinity of Space"; Champell's "Exiled Muse"; Jean Boucher's "Antique and Modern"; M. Seyss's "La Soir de la Vie." In conclusion he asked his hearers to remember that these were but a few of the works of French sculpture during the past twenty years. There were three reasons for this development in France. First, they had got a building where sculpture could really be exhibited; secondly, the French public cared for sculpture; and, thirdly, the Government did all they could to reward and encourage it. If English sculpture was to develop with the freedom and richness of French, one of the first things was that the Government should spend public money on it.

Sir W. Goscombe John, in proposing a vote of thanks to the lecturer, said they had been able to see the tremendous richness and wealth of modern French sculpture, and it was almost bewildering. Everyone who loved French sculpture would probably make a different selection, but Mr. Statham had enabled them to see enough to realise what it meant, for many of the works shown were epoch-making things which sculptors all over

Europe had looked upon as inspirations. He looked on French sculpture as the third great school. There were, of course, first the Greeks, whose mantle fell upon the Italians, and from them it came to the French. All other European schools were more or less echoes of French sculpture with a certain national bias. There never had been a period when France was without great sculptors from the time of the great cathedrals of Chartres, Amiens, and Rheims, and others, down to the present day, and, what was more, they had never been tied by conventions, or, at least, those conventions were paralysed. The mere mention of Rodin's name was a challenge, but all sculptors, whether they admired him or not, would agree that he was an epoch-making sculptor. No one had made sculpture so much talked about as Rodin, who had had a tremendous influence. He agreed with what Mr. Statham said about Rodin's statue of Balzac, but was entirely opposed to what he said about his St. John, for he did not think that he knew anything more remarkable between Donatello's time and not than Rodin's St. John—nothing which had been so dynamic in its force. Looking at French work one was wonderfully impressed with the importance of the nude in sculpture, and it was perfectly true that in dealing with abstract things one was compelled to go to the nude. In things dealt with costume they were at once tied to a certain period. In England they were in a pathetic condition. Many of their sculptors were full of enthusiasm and strongly desirous of making beautiful things, but they were stopped by the committees who commissioned them. In America they found the same thing. One of the greatest of modern sculptors was the late Mr. St. Gaudens, but they rarely saw a nude figure from his hand, because the committees would not have it. Then in France they got State patronage and the patronage of the Paris municipality, and of many of the other municipalities of the country, and that was why they got the Salon filled with a mass of revival work. In this country the State was indifferent, and all the sculptor got from the municipalities was a commission to execute a bust of a mayor or local alderman. The only thing only in England which helped to keep alive ideal sculpture was the Chantry bequest. They knew also what the Sculpture Gallery



La Pensée.
M. Alfred Boucher, Sculptor.

Academy was. It was only possible to small things. If a work beyond a certain was shown it was out of proportion and not to be seen. People could rub their against it, and the British public loved that. Unless a thing was smooth and polished they did not like it.

Colton, endorsing the motion, said that Mr. Statham set down that one of the greatest qualities of sculpture was its perfect form, but to-day hardly seemed to think so much of that. They knew, the Greeks, whenever they did a thing to decorate a building, however far away it was to be fixed, modelled it perfectly, and it was only seen until they came to the British Museum. To-day it was said that this was no necessary, and some people seemed to think that the roughest-hewn blocks had a beauty which beautiful rendered work had not, therefore, the higher they went in inverse they got less money for such work. That one thing which rather discouraged sculpture in England at the present moment. He had the greatest admiration for French sculpture, there was a good deal of fine English sculpture, and he thought at the Franco-British Exhibition the English sculpture not competed, but competed very forcibly with French sculpture. A French sculptor said that the English had the right nature for sculpture, as they had nothing to unlearn.

There was a natural reticence which lent itself to sculpture, and they did not have to think of those limitations which sometimes showed the cloven hoof in French sculpture. Mr. Colton proceeded to give instances of modern French sculpture that bear out his contention, and made some scathing references to Rodin's manner of exhibiting his various works, who apparently found eccentricity pay. After all, in modern times they had done wonderful sculptures; but it seemed to be striving to express too much. The finest sculpture was done by the Greeks at a time when thought was easily crystallised.

The President

remarked that if only the public appreciated sculpture they would soon get a gallery to exhibit it in and the State to buy it, but as the public was so unappreciative the other two things followed. He was rather surprised Mr. Statham had not dragged the architect rather more into sculpture and shown, at any rate, that an architect was essential to some of the work. Mr. Statham had told them of sculptors becoming painters and painters becoming sculptors, but had not told them of any architect becoming a sculptor.

The motion was carried, and

Mr. Statham,

in reply, said he was conscious, as Mr. Colton had said, that each year in the Paris Salon there was vulgar realistic sculpture. That, of

course, was perfectly detestable. His opinion was that the progress of English sculpture in the last twenty-five years had been wonderful, but he was not dealing with English sculpture that night. He would like to add that about two-thirds of the slides were from photographs which the French sculptors had sent him.

ARCHITECTURAL SOCIETIES.

Royal Institute of the Architects of Ireland.

A special meeting of the Council of this Institute was held at No. 31, South Frederick-street, Dublin, on Monday last. The President, Mr. A. E. Murray, R.H.A., F.R.I.B.A., was in the chair. Also present:—Messrs. Frederick Hayes, W. Kaye-Larry, R. Caulfield Orpen, J. H. Webb, H. Allberry, Frederick Batchelor, G. P. Sheridan, and C. A. Owen, Hon. Secretary. Some correspondence having been dealt with, the ballot list for the new Council was passed. It was decided that the Institute certificates should bear no agnomens.

The President reported that an informal Conference had been held between some of the members of Council and the Professors of Architecture and Engineering of the National University. A Sub-Committee was appointed to meet the Professors and to arrange, if possible, for a public meeting.



"Antique et Moderne": Plaster Group.

M. Jean Boucher, Sculptor.

Architectural Association of Ireland.

The Architectural Association of Ireland held their opening meeting of the winter session at their rooms, South Frederick-lane, Dublin, on the 7th inst. The President (Mr. Page L. Dickinson), in the course of his opening address, said they had good reason to be satisfied with the work done by the Association since its birth. When the Association was started it was for all practical purposes the only body offering an architectural education to the student. Since that time the technical schools had improved out of recognition, and construction was better taught in these than was possible in a body such as their own, where the instructions were, of necessity, honorary. The long-talked-of National University, which was now an accomplished fact, had a Chair of Architecture, the first in Ireland, and it was greatly to be congratulated on having recognised architecture as one of the learned professions, and its students as worthy of receiving an academic training. Discussing the internal affairs of the Association, the President went on to say that last year a resolution was passed desiring the incoming Committee to reconsider the question of a proposed amalgamation with the Royal Institute of Architects in Ireland. Directly it came into office this Committee gave its most careful attention to the subject, and decided that the idea of amalgamation should be postponed for the present, feeling strongly that so long as there were any junior members in the Association, and until the entrance examination to the Institute had been given a trial, and the new School of Architecture was in working order, the lectures and design class in that Association should be continued. Whether the future of the Association lay in amalgamation with the Royal Institute of Architects in Ireland or independently the Committee believed that it should continue for the present carrying on its policy of past years in a manner modified to suit the altered educational conditions in Dublin. Proceeding, the President said that the work being carried out by the Georgian Society had aroused a keen and quite unlooked-for interest in the arts and crafts of eighteenth-century Ireland. He found that a great many men outside their profession knew the names of Gaudon and Cassels, and their lesser brothers, and the works which they carried out. They saw this work every day; it was all in a few acres of ground, and not scattered over vast areas, as in London and Paris, and after they had read of this their seeing the buildings made them remember what they had read. This even slight knowledge of the work of the past would, he believed, tend to make the ordinary citizen notice and criticise the work of the present. As architects they had a most important duty to perform towards the general culture of their city. That sketching and measuring form one of the chief parts of architectural education was a platitude that need not be emphasised, but he often heard Irishmen lamenting that there was nothing to be found in Dublin, and wishing that they could more easily get to the Cotswolds, Normandy, or elsewhere. He had often pointed out the wealth of Dublin in this respect, and he ventured to say that there were dozens of houses, and remains of houses, all over the city which were virgin soil to those who wished to measure or draw.

Manchester Society of Architects.

The sessional papers meeting on the 8th inst. was held on somewhat novel and distinctly interesting lines. Mr. J. J. Burnet, F.R.I.B.A., who was the Visitor for the evening, instead of reading a formal paper led what was announced as an informal discussion mainly upon points arising from an exhibition of drawings of his own work which had been on view for a few days. In opening the discussion, Mr. Burnet said that they were there that evening in a spirit of camaraderie. He would say that his works there shown represented genuine pleasure in solving problems placed before him by his clients. It had been his privilege to work for clients themselves highly trained technically—shipbuilders and mechanics, who clearly enunciated the problems set before him. He also spoke of the pleasure which he had always found in travelling in pursuit of knowledge to equip him for his work.

In the course of the conversation which followed Mr. Burnet outlined the inception

of the scheme of extension of the British Museum. The splendid drawings of the work provided fruitful ground for discussion, and the way in which the minutest details had been thought out was in many ways a revelation.

Besides the drawings of the Museum, photographs and details of many other works of Mr. Burnet were exhibited.

ENGINEERING SOCIETIES.

The Junior Institution of Engineers.

A number of members of this Institution, with the permission of the Chairman and Directors, visited the works of the Tottenham and Edmonton Gas Light and Coke Company on the 18th inst. Under the guidance of Mr. A. R. Broadberry, Engineer, assisted by members of the staff, they were shown No. 1 Retort-house, containing eighteen beds of eights, 22 in. by 16 in., through retorts, which are operated by a Fiddes-Aldridge machine, and the coke is removed by a De Brouwer hot-coke conveyor. A setting of verticals is now in order, and when complete the total capacity of the house will be 3,000,000 ft. per diem. No. 2 Retort-house, containing at present twenty-four beds of tens, 22 in. by 16 in., through retorts, with regenerative heating. The charging and discharging is effected by De Brouwer's projectors and pushers. The coke arrangements are similar to No. 1 House. The total capacity of the house is 3,750,000 ft. per day. The water-gas plant, which was first put in operation in 1894, when Beekton was the only other works in England using the system. The two original sets have been scrapped, and one larger set (1½ millions) put in their place. The plant now consists of:—

Two sets,	500,000 ft. each—1,000,000
cubic ft.	
Two sets,	1,000,000 ft. each—2,000,000
cubic ft.	
One set,	1,250,000 ft. each—1,250,000
cubic ft.	

The growth of the output since Mr. Broadberry received chief control in 1899 has been from 575,658,000 to 1,687,811,000 cubic ft. in 1910, and clear indications show that this year's output will be at least 1,770,000,000 ft.

At the conclusion of the visit the members were entertained to tea, and the Chairman, Mr. Walter T. Dunn, expressed their appreciation of all that had been done to render the occasion so interesting and enjoyable, Mr. Broadberry responding.

CONTEMPORARY ARCHITECTS AND THEIR WORK:

MR. WALTER CAVE, F.R.I.B.A.

SPECIALISATION is becoming quite a prominent feature in architecture as in all other branches of human activity, and the delights of an all-round practice are nowadays enjoyed by the comparatively few. Though this development is not remarkable, considering the complexity of modern building, it is none the less regrettable, as an architect specialising in one branch of his art is apt to get into a groove and to find himself differently equipped for dealing with a problem outside his adopted sphere. The old-time recipe for an editor demanded that he should know something about everything and everything about something. In the matter of design the modern architect is often forced to follow along similar lines, and it need hardly be added that the artist who is condemned to an eternal succession of town halls, or libraries, or theatres, or houses, or public baths, or factories, as the case may be, must find his powers of invention heavily taxed.

Mr. Walter Cave, the subject of this note, is one of the fortunate architects whose practice is not restricted to one particular branch of their art, and who find a succession of new and interesting problems to work out. Though much of his work has been of



Mr. Walter Cave, F.R.I.B.A.

[Portrait by Reginald Haines.]

æsthetic character, the list of his principal buildings includes many other types of design. Mr. Cave is the son of Sir Charles Cave, Bart., of Sidbury Manor, Sidmouth, and was born in 1863. He was educated at Eton, spending some six years of his boyhood there. His technical training began as a pupil of the late Sir Arthur Blomfield. In the following year he entered the Royal Academy Schools, pursuing his studies in office and school concurrently. In 1889 he started practice in London. Mr. Cave held the position of Honorary Secretary to the Art Workers' Guild for nine years, and he is also on the Committee of

the Arts and Crafts Society. Specimens of his own craft work have been exhibited at the latter Society's exhibitions, these including metal work, furniture, and a piano case for Messrs. Bechstein. Mr. Cave originated the idea of placing candlesticks at the ends of the keyboard of a piano, and this arrangement has since been extensively copied.

As a member of the Council of the Royal Institute of British Architects, and as President of the Architectural Association in 1907-8, Mr. Cave has had his share of work on architectural bodies. The Architectural Association Athletic Club owes its inception mainly to his efforts and advocacy.

This is not to say that athletics were unknown to the Architectural Association members previously, but it was during Mr. Cave's Presidency that the existing athletic coteries were co-ordinated and fresh sections set going. Mr. Cave's interest in athletics arises naturally from his own considerable achievements in that field, for he played cricket and football for Eton in the years 1880-1882, and was captain of the football team in the last-named year. He also won the 100 yards, the quarter-mile, and long jump in the college sports. In the season of 1883 he played cricket for the Gloucestershire County eleven.

Though Mr. Cave is chiefly known for his



The Æolian Hall: The Staircase.
Mr. Walter Cave, F.R.I.B.A., Architect.



A Shop Front (now demolished) in Dover-street, Piccadilly.

Mr. Walter Cave, F.R.I.B.A., Architect.

excellent domestic work, this having been more frequently illustrated, his practice, as has been stated, is a varied one. Among his general works may be mentioned the Orchestrelle Company's premises in New Bond-street, London, including the Aolian Hall; Messrs. Bechstein's premises in Wigmore-street, London; a cottage hospital at Sidmouth; the extension of Somerville College, Oxford; the Church of the Nativity at Watlington; tanks at Bristol and Clifton for Messrs. Prescott & Co.; the Chappell Galleries, New Bond-street, London; the present entrance hall at the Adelphi Theatre, London; and a large factory at Hayes.

For many years Mr. Cave has filled the office of Surveyor to the Gunter Estate, covering a large portion of South Kensington, and has been responsible for much of the new work thereon, including Coleherne Court (a large block of flats built round a delightful centre garden), a row of houses in West Kensington, and the laying-out and designing of a large estate of some 500 houses, shops, and studios. This estate is worth a visit as showing what may be done by controlling the speculative builder. The houses, which are quite small, are close to the North End-road, Fulham, and Mr. Cave recalls that the various builders were not always amenable to the restriction of the general design. But as the houses have sold and let exceedingly well their views on the matter have probably changed considerably in the meantime.

Of domestic work the list includes, among many others, a house for Lord St. Aldwyn; a house near Northampton; "Ravenshill," East Leach; Cueden Hall, Preston, Lancashire; "Little Court," Farthingstone; alterations and additions to Coombe Bank, Sevenoaks, for Dr. Ludwig Mond. This last contains a very fine Adam gallery, 90 ft. by 25 ft. and 20 ft. in height. Ewelme Down (p. 591), which Mr. Cave considers one of his best houses, is a large house on the brow of a hill near Wallingford. The situation was rather bare, but very great progress has been made with the gardens, to which Mr. Cave has recently added some garden houses. These, built in harmony with the main structure, are placed on the bastion-like ends of the terrace, which is upheld by an immense retaining walls on the side of the hill. Some idea of this wall may be obtained from our view, which illustrates the forecourt and part of the terrace. In addition to the gardens at Ewelme Down,

Mr. Cave has designed gardens at Hatherop Castle, Oxon; Sidbury Manor; and "Kneesworth," Royston.

Coming now to the buildings we illustrate in this issue, the interesting little shop-front in Dover-street, designed for a costumier, is now but a recollection revived by our view; for the whole building has been demolished recently to make way for a more ambitious structure.

Roche Court, Farnham, may be described as half new and half old. Originally the house had an L-shaped plan, and Mr. Cave, in his alterations and additions, added another L-shaped wing, making the house square on plan with a centre courtyard. The house is of brick to the first floor, the upper part being weather-tiled, with bays in half-timber. The casements are of wood, painted white, and the roofs are covered with old tiles.

Lock House, Beaulieu, is a picturesque dwelling on the banks of Beaulieu River, on Lord Montagu's property. All local materials were employed, the roof tiles coming from Lord Montagu's tile-yard. The

walls are of brick, roughcast, and the casements are of wood. A feature of the house is the deep verandah, or stoep, which makes a good-sized room.

Bengeo House, Hertford, is a new house on the site of one destroyed by fire. Our illustration of the exterior shows the garden front, on which are placed, on the ground floor, the drawing-room to the left, the hall in the centre, the dining-room to the right, and the servants' hall to the extreme right. The library and the kitchen are placed in the projecting bays on the front of the house. On the two upper floors are eighteen bedrooms and dressing rooms, three bathrooms, boxes, rooms, and a nursery. The walls are faced with purple, mottled Luton bricks, with red brick dressings, and the woodwork is painted white. Old tiles are used for the roofs. The floors and staircase are of oak, and Gilmour doors have been used. The general contractors were Messrs. H. Martin, Ltd., of Northampton; and Mr. James Gibbons, of Wolverhampton, supplied the door furniture.

St. Austins, Lymington, represents additions and the remodelling of an existing house. The older part is seen in the square block to the right of the view, and this dictated to a large extent the design of the new wing. The house looks solid and comfortable, and is an instance of the successful extension of an old dwelling without much pretensions to style.

The Orchestrelle Company's premises in New Bond-street originally comprised the Grosvenor Club (the old Grosvenor Gallery), and a library, and had to be extensively altered for their new occupants. The whole of the ground floor was made into one large hall panelled in oak, with verde-antique marble columns and pilasters. Four of the columns are monoliths which help to carry the weight of the upper part of the building. The original staircase remains, but has been panelled, and divided according to the requirements of the London County Council. An open arcade has been formed on the right-hand side. This staircase gives access to the Aolian Concert Hall at the back, which seats an audience of just over 400 people. The original skylight over the hall has been masked by an inner panelled ceiling, and windows have been opened on the west side with corresponding niches on the east wall. The panelling is of mahogany, stained dark brown, with inlaid pilasters. The stage and organ case are of oak, stained dark. The doors are covered with leather. A new exit staircase has been built at each end of the hall in conformity with the fire regulations. The rest of the



Lock House, Beaulieu.

Mr. Walter Cave, F.R.I.B.A., Architect.

after death than when he was actually living and working, and he (Lord Plymouth) imagined that the reason for that was very largely the fact that the public were ignorant only and not unappreciative. It was very difficult to see or to realise any work of Stevens, except the Wellington Monument, which in the days he was speaking of was so wrongly placed in St. Paul's Cathedral that it was almost impossible to appreciate its merits. But times, he was glad to think, had changed, and they now were ready to do all in their power to present to the public the work of Alfred Stevens, so that he might be, as far as in them lay, appreciated in this country.

Cambridge University.

In announcing to the Vice-Chancellor his resignation of the Slade Professorship of Fine Art, Dr. Waldstein makes proposals for the organisation within the University of the studies of architecture, art, and archaeology, and the establishment of Professorships of Architecture, Egyptology, Assyriology, Medieval Art, Renaissance and Modern Art, and Aesthetics. In his appeal for subscriptions to those ends he undertakes, with Mrs. Waldstein, to contribute 1,000*l.* and to promote the study of architecture, with a further 500*l.* subscribed by a friend. Mr. Waldstein, Litt.D., Ph.D., Fellow of King's, was Slade Professor, 1895-1901, and when University Reader in Classical Archaeology, which post he had held since its creation in 1880, was re-elected Slade Professor in 1904 and again in 1907, when the Professorship was made a permanent appointment. He carried out excavations on the site of Plataea, is a prominent member of the American Archaeological School at Athens, was joint author, with Mr. Leonard Sponbridge, M.A., of "Herculaneum, Past, Present, and Future," 1808, and was formerly director of the Fitzwilliam Museum. He edited, and contributed to, the two volumes "The Argive Heraeum," 1902-5, upon the excavations (1892-5), on the site of the Heraeum conducted by the American School at Athens. Mr. E. O. Villiamy, M.A., of King's, has been appointed Hon. Keeper of the Pictures, Fitzwilliam Museum, and his appointment as Assistant Director has been extended to December 31, 1912.

Church Building Society.

The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its usual monthly meeting on the 16th inst. at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Caversham, St. Andrew, Oxford, 50*l.* (making in all 150*l.*); Copnor, St. Alban, Portsmouth, 120*l.*; Plymouth, St. Mary the Virgin and St. Mary Magdalene, 160*l.*; and St. Budeaux, St. Boniface, Devon, 100*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Bethnal Green, St. Simon Zelotes, Middlesex, 10*l.*; Chessington, St. Mary the Virgin, Surrey, 15*l.*; Chillington, St. James, Somerset, 10*l.*; Fertiniog, St. Michael, Merioneth, 15*l.*; Grove Park, St. Augustine, Kent, 50*l.*; Penrhyswibr, St. Winifred, Glam., 30*l.*; and Westhorpe, St. Margaret, Suffolk, 15*l.*. Grants were also made from the Special Mission Buildings Fund towards building mission churches at Abersoch, St. John, Carnarvon, 25*l.*; Bispham, St. Stephen, Lancs., 40*l.*; Bridgmay, Elson, Hants, 25*l.*; and Pont-y-Gwyddel, St. John the Baptist, Denbighs, 10*l.* The following grants were also paid for works completed:—Balby, St. John, near Doncaster, 100*l.*; Deptford, St. Nicholas, Kent, 250*l.*; Brotherton, St. Edward, Yorks, 25*l.*; Spitalfields, Christ Church, Middlesex, 40*l.*; Higham Hill, St. Andrew, Essex, 150*l.*; Worcester, St. Martin, 200*l.*; The Bourne, St. Thomas, near Farnham, Surrey, 70*l.*; Norton, St. Peter, near Malton, Yorks, 100*l.*; Newquay, St. Michael, Cornwall, 150*l.*; Haxby, St. Mary, near York, 25*l.*; Walney Island St. Mary, near Barrow-in-Furness, 80*l.*; Bermondsey, Christ Church, Surrey, 40*l.*; Aterberg, Christ Church, Mon., 130*l.*; Bramhall, St. Michael and All Angels', Cheshire, 75*l.*; Bow, North Devon, 20*l.*; New Haw, All Saints' Addlestone, Surrey, 25*l.*; Bearwood, St. Dunstan, Edgbaston, 25*l.*; Plumstead, St. Francis, Kent, 40*l.*; and Burstow, near Horley, Surrey, 20*l.*. In

addition to this the sum of 625*l.* was paid towards the repairs of twenty-five churches from Trust Funds held by the Society.

Southwark Cathedral Improvements.

At a recent meeting of the General Committee of the Southwark Cathedral Maintenance and Endowment Fund, held at Bishop's House, Kennington, among those present were Mr. J. Oldrid Scott and Mr. C. M. Oldrid Scott, the architects superintending the work of restoration and repair at the Cathedral. Mr. C. Oldrid Scott reported that the works in hand were nearing completion, and it was expected that the new approach to the Cathedral from London Bridge would be completed and ready for opening soon after Christmas. It was resolved that upon the completion of the new approach arrangements should be made for a public opening.

St. Mark's Church, St. John's Wood.

It is proposed to build a baptistry at the south-west corner of St. Mark's Church, in Upper Hamilton-terrace, at an estimated outlay of 500*l.*, as a memorial to the late Canon Duckworth, formerly Vicar. The church was built in 1846-7, after the designs, in the Gothic style, of Messrs. Cundy.

Kirkby Stephen Sewerage.

The Local Government Board have sanctioned the first portion of the loan for the construction of a complete system of sewers and sewage disposal works for the little market town of Kirkby Stephen, Westmorland. The engineer for the scheme is Mr. Harry W. Taylor, A.M.Inst.C.E. (Messrs. Taylor & Wallin), of Newcastle-upon-Tyne and Birmingham. The estimated cost of the works is about 4,500*l.*

BOOKS.

The Essentials of a Country House. By R. A. BRIGGS, F.R.I.B.A. Containing 218 pages and 71 illustrations from photographs and drawings. (London: B. T. Batsford, High Holborn. 7s. 6d. net.) This book must not be taken too seriously. It opens with the candid statement that it is not a "manual of practice" for the architect, but neither does it quite justify its title as a treatise on the "essentials" of a country house. Its aim is, as far as we can gather, to interest those who are thinking of building in the various details that make for the amenities and convenience in a home, and to give them a general idea as to what is and what is not possible with the means at their disposal.

No attempt is made to deal with the subject on a comprehensive basis, but we find gathered together numerous useful hints on situation, materials, planning, etc., picked up in the course of an obviously extensive architectural practice in this type of work, and occasionally flavoured with just those little personal prejudices that every artist is entitled to as a mark of his individuality.

The author's division of the houses he designs into two styles—the Manorial (with iron casements); the Georgian (with sashes) is delightful in its simplicity, and may be commended to harassed students in the throes of the R.I.B.A. Examination.

The book is well illustrated with photographs from numerous examples of the author's work, which is, however, rather unequal in quality, at its best exhibiting breadth and refinement in treatment, but sometimes appearing fussy and overloaded.

The Practical Design of Reinforced Concrete Beams and Columns. By W. NOBLE TWELVETREES. With labour-saving diagrams and numerous illustrations. (London: Whitaker & Co., White Hart-street, Paternoster-square, E.C. 4s. net.)

This practical little manual deals clearly and explicitly with the principles of design in reinforced concrete construction as required for buildings of the more usual types, such as factories, warehouses, and offices. It makes no pretensions to cover the whole field of reinforced construction, but within the range adopted by the author the subject is handled fully and comprehensively.

The section on beams starts with the simplest formulae and practical data, and goes on to apply these to beams of various types, including rectangular beams, beams including a proportion of the floor area, and both these

as modified by the addition of top reinforcement. The problem of vertical or web reinforcement against shear is also dealt with. Columns and struts are next treated, a further chapter being devoted to column bases, and another to the designing of and calculation for complete floors. The working stress advised by the R.I.B.A. Committee, the American Joint Committee, and the French Government are compared and criticised, and a brief table gives the author's recommendations based on these reports. The numerous diagrams which are included at the end of the book should save the designer a good deal of time and trouble.

A Manual of Civil Engineering Practice.

By F. NOEL TAYLOR, M.Inst.Mun.E. (London: Charles Griffin & Co., Ltd. 1911. Pp. 399, with 1,179 illustrations. 25s. net.) This manual is in no sense of the word a competitor of the classical treatise by Rankine. It is conceived on a different basis, being free from the essentially mathematical treatment which tends to obscure to some people the teachings of that master, and, besides, it is written and arranged specially for the use of municipal and county engineers, and may be usefully employed as being supplemental to the work of Professor Rankine.

A mere glance through the pages of the present manual is sufficient to demonstrate the wide range of subjects with which the modern municipal engineer is expected to be familiar. In addition to subjects forming the foundations of an engineering education the treatise deals with the design of structures in brick, stone, steel, and reinforced concrete, chimneys, hydraulic and mechanical engineering, roads, tramways, bridges, rivers, work, land drainage, waterworks and water supply, sewage purification and disposal, sanitation, refuse disposal, and many others. I can hardly be expected that one mind will be able to retain every detail of so numerous a collection of subjects, and for this reason such a work as the present should be generally welcomed. The volume has additional scope as a text-book for students preparing for the examinations of the Institution of Municipal Engineers and kindred bodies. Its preparation must have involved an enormous amount of labour, the author and the publishers being worthy of the highest praise for the manner in which their respective tasks have been accomplished.

BOOKS RECEIVED.

REINFORCED CONCRETE CONSTRUCTION. By Henry Adams and Ernest R. Matthews. (London: Longmans, Green, & Co. 10s. 6d. net.)

STRESSES AND THRUSTS. By G. A. T. Middleton. (London: B. T. Batsford, 4s. 6d. net.)

CATHEDRALS OF SPAIN. By John A. Gade. (London: Constable & Co. 15s. net.)

THE HOUSE AND ITS EQUIPMENT. Edited by Lawrence Weaver. (Country Life, 18s. net.)

BOILER DRAUGHT. By H. Keay Pratt. M.I.Mech.E. (London: Constable & Co. 4s. net.)

CORRESPONDENCE.

Official Architecture.

SIR, Your correspondent, "Medius," although claiming to speak from personal experience of the Office of Works, is not correct when he writes, "Most of the competent architectural men have passed to the permanent staff."

Permit me, in the interest of truth, to again trespass on your space.

As previously mentioned, the architecture work was done for many years by men who had proved their ability by years of office work. They were classed as "temporary." A few years back it was decided to make a number of temporary men "permanent," if they passed an examination. The clerical officials, contrary to the advice of the architectural heads, fixed the age limit so low as to admit only comparative juniors, and kept out the seniors, who had been doing the important buildings for many years, who had been instructing the juniors in their work, and in some cases had taught them all the knew.

those senior men are still "temporary," and consequently paid less than the men they are trained, and are treated in many ways inferior to them. Sometimes a man over the usual age is especially recommended for transfer, without examination, by an architectural head, on account of his exceptional ability and the services he has rendered to the Department; these recommendations are usually blocked by clerical officials, who are, apparently, so indifferent as to whether men of added ability, who have devoted many of the best years of their lives to the service of the State, are treated in an honourable manner. An obsolete regulation is brought in to stop what justice, common sense, and efficient administration demand should be. Some officials are sympathetic, but nevertheless. One remarked, with regard to a recommendation, "In a private business use it would be done at once!" Now, not only is a temporary man understood, but the best use is not made of his services, as was formerly the case when the work was given to those best able to do it. This is partly the cause of the great increase in the cost of the work which Mr. Stokes incurred to, and does not lead to

EFFICIENCY.

Balliol College Chapel.

Sir,—Butterfield's work requires a considerable experience of architectural aesthetics to appreciate, and it is natural that the amateur of to-day should not be equipped with sufficient tolerance and knowledge to judge its merits.

Imagine that the authors of the scheme for the destruction of Balliol Chapel acted at the first instance with a full belief that the present building had little to recommend and that a modern successor would be welcomed by everyone. It is a very difficult thing to suggest to really well meaning people cultivation and taste that they are not in a position to judge, or in possession of sufficient experience to enjoy a work of art which the details are patently unattractive. I do not think, however, that such laymen should attempt for a moment to criticise any finer of the fine arts with the readiness which they display in condemning or praising architecture.

If it were proposed to remove Butterfield's chapel and replace it with a building as characteristic of the year 1911 as the former had been of the year 1856, it would be another matter altogether. A masterpiece would fall perhaps to give place to another masterpiece. Though highly speculative, it would be a logical proposal. But men of Butterfield's calibre are no longer to be found in the practice of ecclesiastical design; the arch-building enthusiasm which bred them has waned with the need for it, and we can do no better than reproduce the picturesque, but unscholarly and illogical design of the building which he removed. No architect of position could undertake such an act without feeling that position, and it is safe to say that no competent architect will be preposterous enough to take that risk. We no longer have such men as Butterfield, Street, Rogers, Godwin, White, Brooks, Pearson, and others, Scott, jun., nor do we yet realise the loss.

It is not to be supposed that the would be destroyers, if they realise that the ugly and the clumsy woodwork, the violent patterns and the hard texture of the present building are the accidents and not the essence of the design; if they realise that the essence of the design is the precious quality of genius in its creator, of mass form and outline moulded as only a great man can mould—if they realise this, it cannot for a moment be supposed that they will persist in tearing down the masterpiece and putting in its stead a specimen of fashionable sham antiquity.

The length of this letter calls for apology; the importance of the subject is that apology, and an ample one it surely is.

H. S. GOODHART RENDEL.

Nemesis of Butterfield.

Sir,—It seems that Mr. Butterfield's sins, they say, are coming home to roost. We have always understood that he considered

his work as good as that of any of his medieval predecessors, and that therefore he did not hesitate to pull down such work in order to put good, sound work of his own in its place.

Surely such a man would be among the first to applaud the pulling down that is proposed at Oxford, provided the pullers down have a confidence in what they propose to put up, similar to that which Mr. Butterfield had in his own work. The latter left, as I understand, his impress on the fabric of the church whose bells are ringing opposite to me as I write. At any rate, there was a great "restoration" at an expense of 5,000*l.* in 1867, etc., under him, and at that time, I understand, the south porch and parvise were knocked together and thrown into the body of the church to gain a few sittings, and a miserable little south door put in as a substitute. Also, I understand, that the windows, etc., were thoroughly restored at the same time, the present state of things being that there is not a single foot, I believe, of medieval tracery or moulding to be seen outside the church; or inside either, for that matter, if you confine your attention to the windows.

I write, therefore, in view of the objections that are being raised to the demolition of Mr. Butterfield's Chapel at Balliol College, to protest against what I feel sure Mr. Butterfield would have considered sickly sentiment, and to encourage those good gentlemen at Oxford who have the confidence in their architect (who he is, I know not) that Mr. Butterfield had in himself, to go on and prosper, and to pull down the chapel that Mr. Butterfield built, and to put up something better in its place, as Mr. Butterfield would certainly have done had he been in their position.

W. B. HOPKINS.

The R.I.B.A. Examination.

Sir, Mr. Ernest Dixon, in his letter to you of November 10, has called attention to a point which deserves, and which he may be quite sure will receive, very careful consideration from the Board of Architectural Education. I may, however, at once assure him that the last thing that the Board has had in view was to let in the amateur and the dilettante.

The object has been, as it must be with all architectural educationalists, to provide a course which will have an educational value in itself, and shall contain all that is requisite to qualify a young man to enter on the practise of architecture, and in order to make this as thorough as possible the Board has, on the one hand, contracted the area of examinations to what is essential, throwing the lumber overboard, and, on the other hand, have given greater opportunities for that design which is, after all, the final end of those studies, including, as it does, construction, materials, and applied science as necessary elements of good design.

If Mr. Dixon consults my note in the R.I.B.A. *Journal* again he will see that I said, "It is impossible to tighten up all round," but this does not mean that there is to be a slackening all round. What is intended is that, in consideration of the more liberal provision for students' idiosyncrasies, a higher standard will be insisted on in the subjects that the students do select.

I am entirely in agreement with Mr. Dixon on this point, and am grateful to him for having stated it so clearly in his thoughtful letter. I gather also from his letter that he is in full sympathy with the effort made by the Board to give to the examinations a genuine educational value.

REGINALD BLOMFIELD.

Licentiatehip R.I.B.A.

Sir,—I understand that this class is to be closed on June 30 next, and that no further applications will be considered after May 31.

In view of the serious effect this will have upon many well-qualified men who have not yet attained the qualifying age, or have not been the necessary five years in practice, might one suggest to the "powers that be" at the Institute that it would be well to seriously consider the advisability of further extending the time during which applications may be received?

Personally, I know cases of those who will be within a few days or weeks of the

qualifying period of five years or the age of thirty, and yet apparently the gate will shut, and such cases will be left outside.

Have the Institute any power to accept those who have not quite reached the specified period of age or practice on June 30? In other words, is there or should there not be a reasonable amount of elasticity about the rule in the case of men who are otherwise well qualified?

ENQUIRER.

Cooking Apparatus.

Sir,—A letter by Mr. H. A. Davis, which appeared in your issue of November 3, has just been brought to my notice. There is one sentence in particular in this letter which seems to me to be likely to cause grave misapprehension on the subject of electric cookery to those of your readers who have had no practical experience of it.

The sentence to which I allude is this:—"There is one point particularly worthy of note—it was impossible on the particular oven tested to obtain a temperature of less than 410 deg. Fahr., a temperature somewhat in excess of that required for most cooking operations, and a point which clearly demonstrates the want of control over the heat in electrical ovens."

Unfortunately, Mr. Davis does not mention the name of the oven with which he made his tests, but I think it must have been a very antiquated pattern, or possibly the tests were made some years ago, before electric cooking had been brought to the point of perfection at which it now stands.

I am a practical cook, and I quite agree with Mr. Davis that it would be impossible to do any successful baking with temperature of 410 deg. Fahr., 350 deg. being the highest, ever required. The point of my letter is this, I have been using electric stoves for the last seven months, and have three electric ovens under my charge (including the one alluded to by Mr. Gray), and I have never had the slightest difficulty in controlling the heat of any one of them. It is perfectly easy to keep the temperature as high or as low as required.

AMY CROSS.

First Class Diplôme National Training School of Cookery, Demonstrator to the Westminster Electric Supply Corporation, Ltd.

The Cost of Joinery.

Sir,—Recently, on a flimsy pretext of "want of work," I had to "finish up" in a certain cabinet joinery workshop. Briefly, this is how the shop is run by the foreman:—

Certain young "bull-rushing" cuts of half-and-a-quarter-baked, raw, inexperienced, so-called "joiners," paid at standard rate of 10*d.* per hour, are kept in regular employment because they pay the foreman weekly tips. The booking-up of timesheets of jobs is so "mangled up" and "cooked" that the duffer's expensive job is covered up by other jobs, to which the time is booked wrongfully. Now, the expert, practical, and thoroughly-experienced workman does not pay for his job by bribing the foreman, directly or indirectly.

Consequently, on the least slackness of trade, this man is told that "he must be stopped"; but, of course, the raw, half-baked cuts of workmen at full-wage rate are kept on.

London builders wonder why their joinery-work is so expensive. The reason is only too obvious and clear to F. M.

INTERCOMMUNICATION COLUMN.

Lime Mortar.

Sir,—I beg to ask will any of your numerous expert readers give me a reliable recipe for a lime mortar to be used for external plastering work, such as is seen on the exterior of many old churches and houses in the country?

I want the mortar for use on both brickwork and lathing to the exterior of a country house.

Portland cement will not do, as the class of bricks I have to use will not take it; they are full of salt and have a very greasy surface.

N. W. CAMBS.

EDITORIAL SUMMARY.

"Divided Control" is the title of our leading article, dealing with street improvements and the necessity for a central authority.

"London's Standing Grievance" is the title of an article on p. 592, dealing with the lack of public seats.

"Notes" (p. 592) include comments on: "Designer and Producer"; "The British School at Rome"; "Minter v. Waldstein"; "Permanent v. Temporary Schools"; "Variations that Prejudice the Building."

A meeting of the Royal Institute of British Architects was held on Monday, when a lecture was delivered by Mr. H. E. Statham entitled "Modern French Sculpture," a large collection of interesting photographs of French sculpture work being shown (p. 593).

Architectural Societies (p. 597) contain short reports of: "The Architectural Association of Ireland"; "The Royal Institute of the Architects of Ireland."

An illustrated article on the life and work of Mr. Walter Cave, F.R.I.B.A., is given on p. 598, under the heading of "Contemporary Architects and Their Work." Our inset plates are all devoted to examples of Mr. Cave's work.

A notice of the exhibition of "The New English Art Club" appears on p. 601.

Book notices (p. 602) include: "The Essentials of a Country House"; "The Practical Design of Reinforced Concrete Beams and Columns"; "A Manual of Civil Engineering Practice."

In our Correspondence columns (p. 602) will be found letters on: "The R.I.B.A. Examination"; "Nemesis of Butterfield"; "Licentiate-ship R.I.B.A."; "Balliol College Chapel"; "Official Architecture"; "Cooking Apparatus"; "The Cost of Joinery."

The illustrated Monthly Review of Civic Design (p. 605) contains: "Vandalism at Sheffield"; "Art Commission, New York"; and Notes.

The Building Trade Section (p. 609) contains: "Land Tax Valuation"; "Recent Workmen's Compensation Cases"; "Builders' Benevolent Institution"; "Government Contracts"; "Projected New Buildings in the Provinces"; "Applications under the Building Acts, 1894-1909," etc.

An article on "The British Schools of Rome and Athens" is given on p. 613.

The opening meeting of the new session of the Society of Architects was held on November 16, when the President, Mr. G. E. Bond, J.P., delivered his address, an abstract of which is given on p. 613.

The annual dinner of the Institute of Sanitary Engineers was given on Wednesday last week. A brief report appears on p. 614.

Some notes on the magazines of the month are given on p. 615, under the heading, "Magazines and Reviews."

In Legal Column (p. 616) will be found comments on: "Water for Domestic Purposes"; "Private Street Works."

Law Reports (p. 616) contains a report of: "Wheeler v. Stratton" (builder's claim for compensation).

MEETINGS.

FRIDAY, NOVEMBER 24

Glasgow Technical College Architectural Conference's Society.—Mr. T. G. Gilmour on "Town Planning." 8 p.m.

MONDAY, NOVEMBER 27.

The Architectural Association.—Mr. Arthur T. Bolton on "Thoughts on Jacobean Architecture." 7.30 p.m.
The Surrey Institution.—Discussion on Mr. J. J. Dones' paper on "The Development of Building Laid," adjourned from last session. 8 p.m.
University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "A Comparative Analysis of French and Italian Renaissance." 8 p.m.
Royal Society of Arts (Lecture).—Professor Vivian B. Lewes on "The Carbonisation of Coal"—I. 8 p.m.

TUESDAY, NOVEMBER 23.
University of London (British Museum).—Mr. Banister Fletcher on "The Parthenon." Lantern illustrations. 4.30 p.m.
The Institution of Civil Engineers. Mr. R. T. Smith, B.Sc., on "Electric Lighting of Railway Trains: the Brake-Vehicle Method." 8 p.m.

WEDNESDAY, NOVEMBER 29.
University of London (King's College). Mr. G. McN. Rushforth on "Christian Mosaics." 5 p.m.
Edinburgh Architectural Association. Mr. Ramsay Traquair on "The Appreciation of Art." 8 p.m.

THURSDAY, NOVEMBER 30.
London County Council School of Building (Forcadale-road, Brixton, S.W.).—A special lecture on "Constantinople," by Professor Beresford Pile. Illustrated by lantern slides. 7.30 p.m.
Society of Antiquaries.—8.30 p.m.

FRIDAY, DECEMBER 1.
Institution of Civil Engineers (Students' Meeting). Messrs. J. and W. Legg on "Brake-lining Coefficients of Friction." Dr. W. C. Unwin, F.R.S., President, will occupy the chair. 8 p.m.

COMPETITION NEWS.

Head Offices for the Port of London.
The conditions of this competition offer a particularly interesting problem. It is seldom that a site of some 5½ acres is available to be dealt with in the City of London, and though the proposed offices will not take up more than about a third of this area, the promoters have very wisely left it to competitors to arrange the whole site, and to suggest on which portion the offices shall be placed, and how the remainder shall be laid out in building sites.

The conditions are very clear, and at the same time leave great freedom to competitors in the conception of their schemes. The drawings required are not elaborate, comprising plans, two sections, and three elevations to a scale of 20 ft. to the inch. A perspective view with the building not more than 12 in. wide, and a block plan of the whole site to a scale of 30 ft. to an inch. All drawings to be finished in pencil with flat tints.

The promoters are advised that the cost of the building should not exceed 300,000., which seems a reasonable sum for a building providing (as set out in the conditions) 25,000 sq. ft. in the basement and on the ground floor, and 22,000 sq. ft. on each of the four upper floors.

We note two points on which competitors might make inquiry. The treatment of the perspective drawing is not defined, and as it is stated that ancient lights should be respected it should be made clear whether those on the west wall of Trinity House are to be regarded as such.

Parliament Buildings, Winnipeg.

We understand from the *Daily Mail* that the Manitoba Government Cabinet Council has decided to ask British architects to tender plans for Parliament buildings at Winnipeg, the cost of which is estimated to be 400,000.

Stafford Library Competition.

Some architects have written for particulars of this competition without enclosing a deposit of 11. as required. The Borough Engineer would be glad if this condition were observed. We understand that a large number of applications have been received.

Stained Glass Window, Groningen.

The competition for the commemorative window to be erected in the University at Groningen has been adjudicated as follows:—

1. (750 fr.) Rudolf & Otto Linnemann, Frankfurt.
 2. (500 fr.) D. J. van der Laan, Rotterdam.
 3. (250 fr.) H. Rosse, The Hague.
- Twenty-four designs were received, including three from England.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White (Chairman) presiding.

NEW SCHOOL.—It is proposed to erect a new school to provide accommodation for 300 children on a site adjoining the Kingsgate-road School, Hampton.

CENTRAL SCHOOL OF ARTS AND CRAFTS.—It was also stated that Professor W. R. Lethaby had resigned his position as Principal of the Central School of Arts and Crafts, but is being retained as art adviser to the School. Mr. F. V. Burridge, Principal of

the Liverpool School of Art, has been appointed full-time principal of the Central School of Arts and Crafts at a salary of 1,200l. a year.

PLAYGROUND SHELTER.—The managers of the Burdett Courts and Townshend School, Westminster, propose to erect an iron shelter in the girls' playground at the school.

DRAINAGE AT GOLDEN'S HILL. Various pairs and drainage works have been carried out at the mansion in the park at Golden's hill, at a cost of about 65l.

CINEMATOGRAF HALL.—It is proposed to erect a cinematograph theatre on a site at Bowman's-mews, Holloway-road, N. The architects are Messrs. Lovegrove & Partners.

ARCHITECT'S DEPARTMENT.—Owing to the pressure of work in this department of the Council during the Christmas holidays when various repairs and painting works are carried out at the Council's schools, it has been found necessary to employ nine additional clerks of works, each at a rate of pay not exceeding 3l. 3s. a week.

CHIEF FIRE STATION.—A sum of 140l. is to be spent in providing messroom accommodation and a cycle store in the stable block of the chief fire station.

HOMERTON FIRE STATION.—The floor of the appliance room at this station is to be repaired with ironstone tiles in lieu of the existing wood blocks, at an estimated cost of 143l.

WORKS AT SCHOOLS.—The Craven-park School, Hackney, is to be enlarged at a cost of about 2,400l., and it is proposed to erect a new elementary school in the neighbourhood of Upper Clapton. The floors of the halls in the following schools are to be covered with corticine:—Cator-street, Clapwell; Cubitt-town, Poplar; and Merton-road, Wandsworth. The estimated cost of the work is 120l.

ILLUSTRATIONS.

The Work of Mr. Walter Cave, F.R.I.B.A.
THE whole of our illustration plates this week are devoted to the work of Mr. Walter Cave, F.R.I.B.A., on whose life and work an article, with other illustrations, appears on page 598.

FIFTY YEARS AGO.

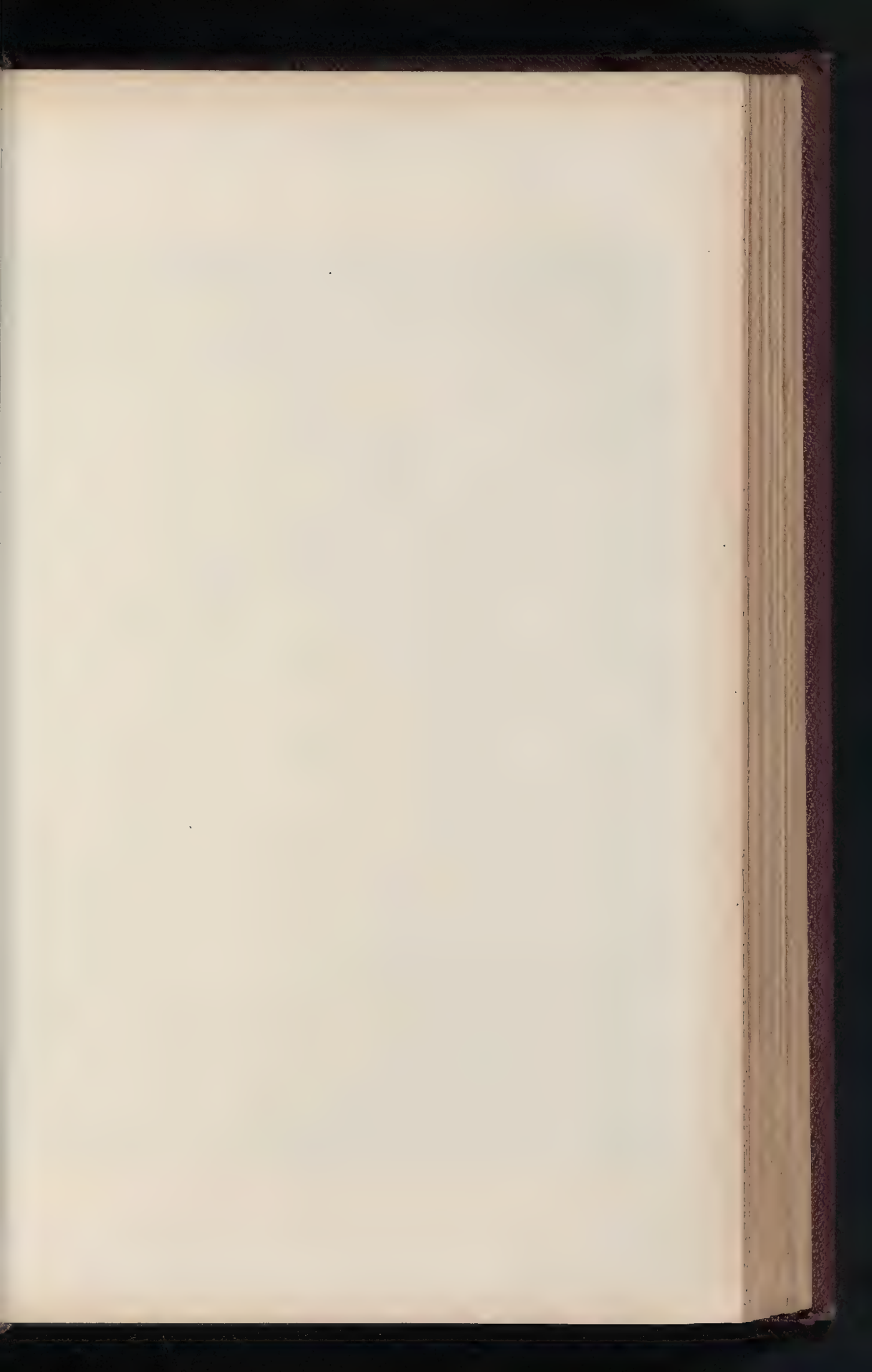
From the *Builder* of November 23, 1861.

The Sewage for the Soil.

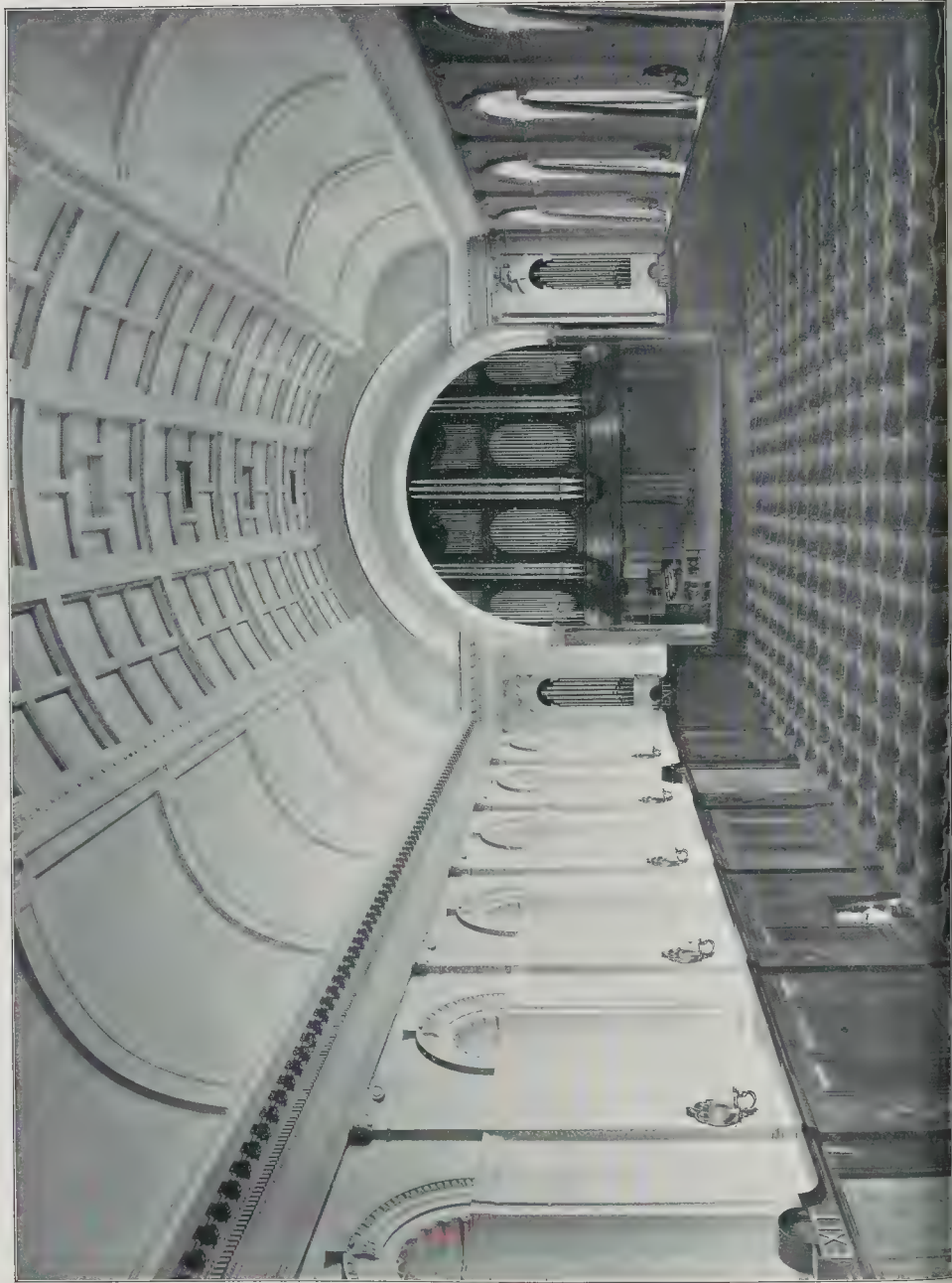
For some years we have occasionally pointed attention to the deodorizing power of earth and clay as a hopeful element in the solving of the great sewage problem; and in a like spirit, have done justice even to the much-abused mud of rivers, such as the Thames itself. Within the last two or three years a "dry closet" has been patented, an account of which, as we saw it at Glasgow, we have also given. It now appears that apart from other sanitary reformers, Rev. Henry Moule, M.A., vicar of Fordington, Dorset, has accidentally rediscovered the deodorizing power of earth (of which, however, every gamekeeper who rubs his hand with earth after defiling them with rotten game must be aware, as are also farmers and gardeners who use night soil as manure) and the same reverend gentleman has also invented and patented a "dry closet," in which earth is mixed with night soil, which it completely deodorizes, even though the same earth be used five or six times over after being dried at each time; thus yielding, as he finds, a most potent manure.

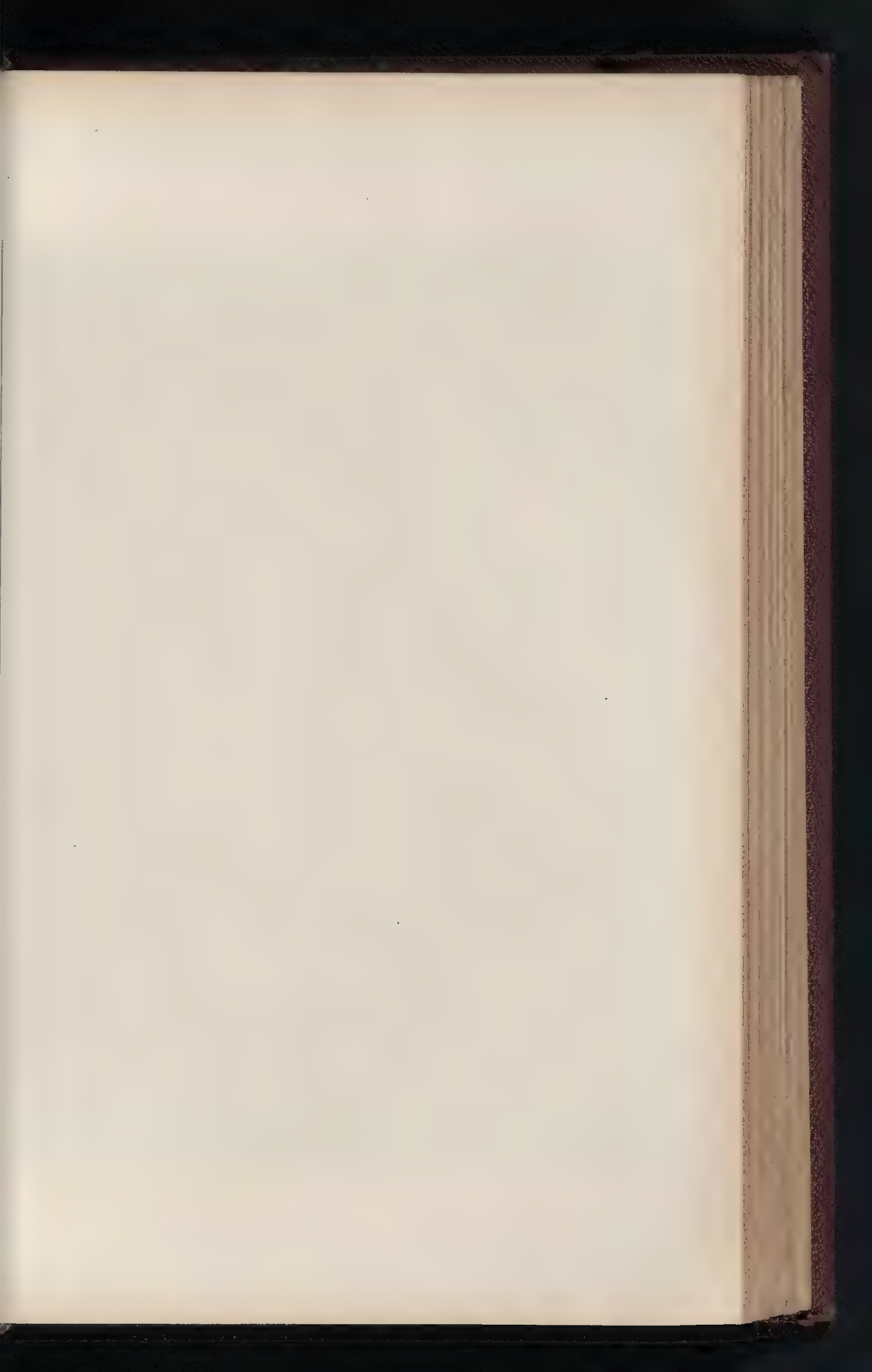
GIDEA PARK.

Gidea Park, Ltd., have also made the following special awards:—Class X.—Fittings special award for merit, The Peerless Heater Company, 70, Bishopsgate-street E.C.; The Richmond Gas Stove Company, Ltd., 132, Queen Victoria-street, E.C.; and the list of awards we published last week the Coalbrookdale Company exhibit, to which the silver medal was awarded, was described as the "B. K." This should have been the "K. B." kitchen range (Gibson's patent).



THE BUILDER, NOVEMBER 24, 1911.



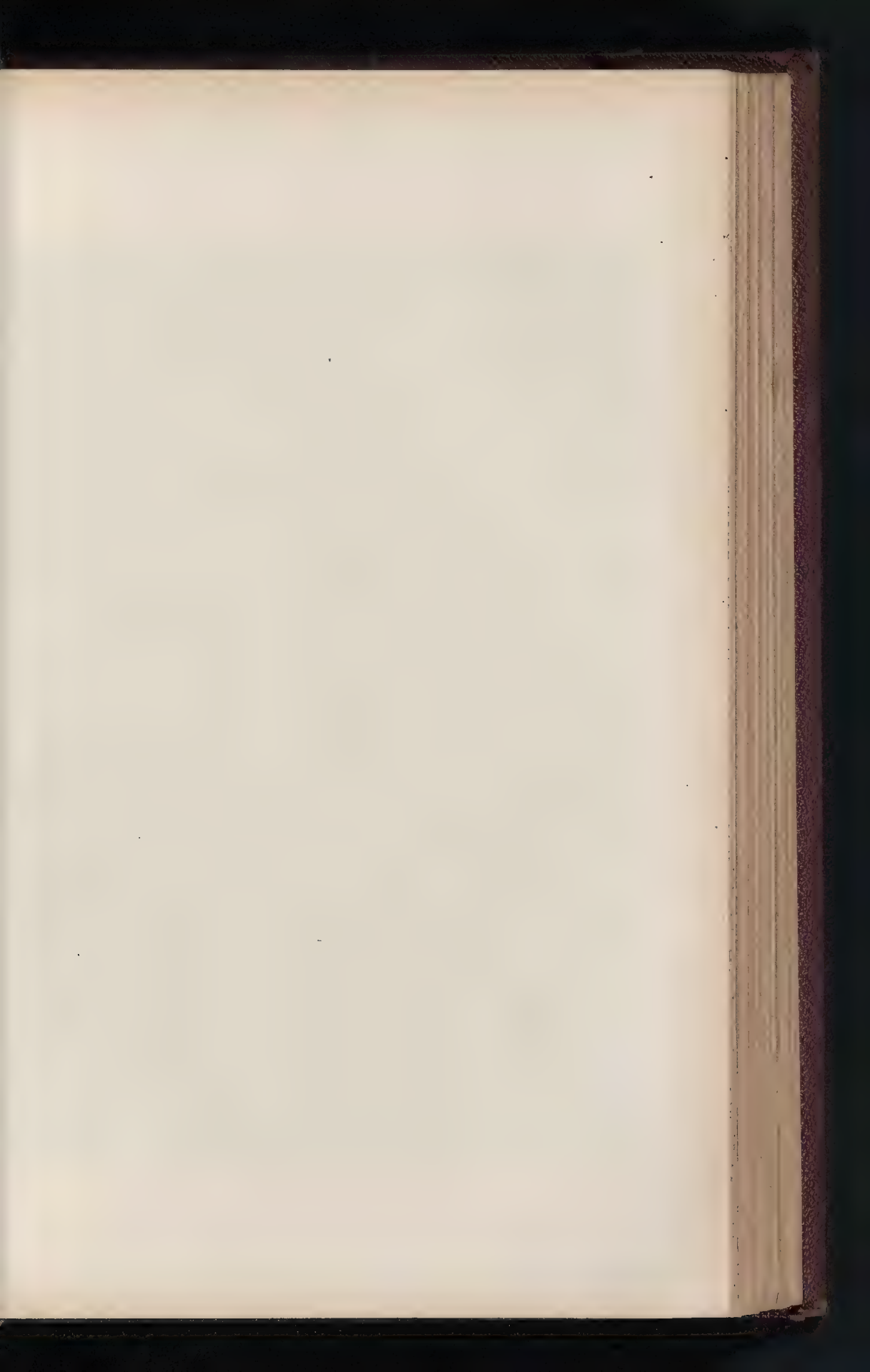


THE BUILDER, NOVEMBER 24, 1911.



ROCHE COURT, FAREHAM.—MR. WALTER CAVE, F.R.I.B.A., ARCHITECT.

Sprague & Co., Ltd., Printers, 4 & 5 Paul Street, E.C.



THE BUILDER, NOVEMBER 24, 1911.



LITTLE COURT, FARTHINGSTONE, NORTHANTS: ENTRANCE FRONT.—MR. WALTER CAVE, F.R.I.B.A., ARCHITECT.
Spence & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.



LITTLE COURT, FARTHINGSTONE, NORTHANTS: VIEW FROM SOUTH-EAST—MR. WALTER CAVE, F.R.I.B.A., ARCHITECT.
Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.



Spencer & Co., Ltd., Photographers, 43 & 45, Strand, London, W.C.

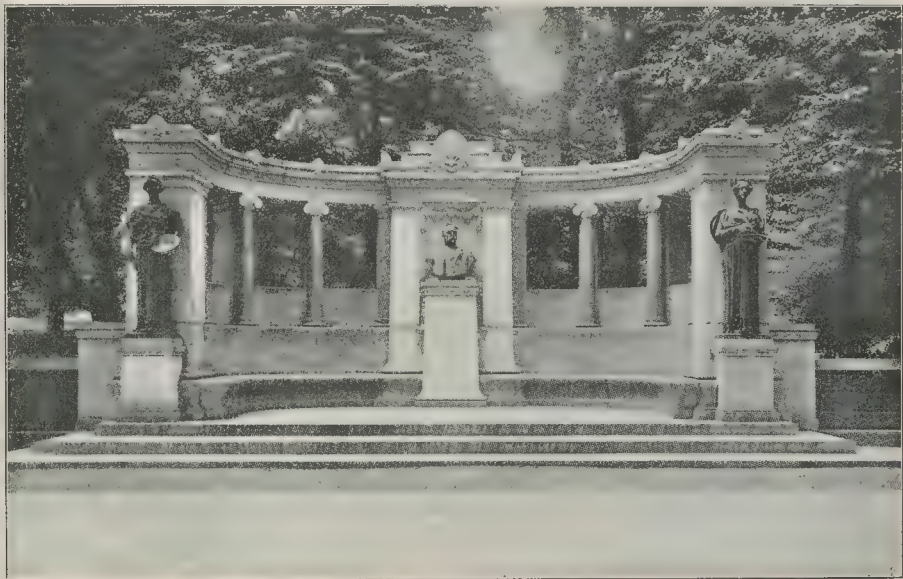
BENGO HOUSE, HERTFORD: GARDEN FRONT.—MR. WALTER CAVE, F.R.I.B.A., ARCHITECT.



Spence & Co., Ltd., Printers, 4 & 5 East Harding St., N.C.

ST. AUSTIN'S, LYNTON.—MR. WALTER CAVE, F.R.I.B.A., ARCHITECT.

MONTHLY REVIEW · of · CIVIC DESIGN.



The Hunt Memorial, New York.

"A well-placed Monument, as it is placed in such a position that it can be seen only from the front and has a suitable background."

THE ART COMMISSION OF NEW YORK.

THE need of proper consideration being given to the placing of statues and other public monumental decorations in streets, gardens, or parks was referred in our issue of September 29, in an on "Sculpture in Civic Art."

But consideration, of a sort, must even be given to this question by the Office of Parks and other authorities concerned. It is presumed from the fact that their decision has to be obtained before a monument can be erected; but if we are to judge by the results as we see them in the parks and gardens of London to-day, common-sense artistic advice is not at their disposal, and, if available, is not usually followed. The Commission has no central authority competent to deal with the position of its monuments and other decorative features on broad public lines.

In this respect New York has taken a considerable step in advance by the creation of the Art Commission of the City of New York. This Commission consisted in 1909 of the Mayor, the President of the City Public Library, one trustee of the Metropolitan Museum of Art, the President of the Brooklyn Institute of Arts and Sciences, an architect, one sculptor, one painter, and three laymen.

Under the terms of its Charter the Commission has jurisdiction over all works of art acquired by the city and over their alteration, removal, or relocation. It appears to have fairly extensive control over all buildings and structures of every kind erected on land belonging to the city, for the erection of which its approval is necessary. In particular it is enacted that no work of art become the property of the city unless the work itself and its location be approved by the Commission.

Proposals to the number of 172 were submitted to the Commission during 1909,

ranging from the tablets to be placed in public schools, or statues and fountains in public squares, to such complete structures as a bridge, a police-station, or a hospital.

As the Commission points out, the location of monuments is one of the most difficult subjects with which it has to deal.

"These difficulties are due chiefly to the fact that in most cases the monument is not

designed for a specific site. When completed it is submitted for a definite spot which, in most instances, is selected not because it suits the character of the monument, but because it is conspicuous; as, for instance, at the junction of two or more important streets or in a prominent place in one of the chief squares or parks.

It is self-evident that the character of the monument should determine the nature of its setting. The all-important question in



Washington Arch, New York.

"A well-placed Monument, forming a fitting Gateway to Fifth Avenue; but its appearance is largely dependent on preserving the old Colonial dwellings on North Washington-square."



Franz Sigel Monument, New York.

"This Statue is well placed. It fits into its surroundings and forms a part of them."

selecting a site is that it shall be of a character suited to the monument; but usually, in order to satisfy the desire for a conspicuous place, other considerations are ignored, and, as a consequence, many monuments stand in unsuitable locations. That so many monuments stand in unfortunate locations is due not to carelessness or lack of deliberation but to failure to recognise the fact that a *well-placed* monument forms an integral part of its surroundings."

The general attitude of the Commission on this question is fairly well summed up in the remark that it is "in full sympathy with every effort to honour those to whom honour is due, but is solicitous not to dishonour them by honouring them in an unsuitable place." Its point of view is further explained as follows:—

"While definite rules cannot be laid down for the location of monuments, any more than rules can with finality be given for the composition of a picture or of a group of sculpture, yet certain fundamental principles are very

evident. A monument should be so placed that it is in proper relation both architecturally and sculpturally to the spot in which it is located, be it street, square, or park; that its commemorative or particular character is in harmony with its surroundings, and that it is and will remain a distinct adornment to the locality in which it stands. The probable permanence of appropriate surroundings should also be considered, for changes in the character and occupancy of adjacent buildings have frequently turned harmony into discord."

We notice that the Commission considers colossal busts on pedestals unsuitable for sites where lawns, shrubberies, and trees are the principal and natural features.

The views we give, with the comments of the Commission on their location, illustrate the application of the Commission's point of view to individual cases.

There is no doubt this Commission is doing valuable work and that the same sort of work is sadly needed in London and our other large cities. True it is that our

authorities have been known to rise to the height of realising that there should be some connexion between the idea or the character of the memorial and the site provided for it. The statue of the Duke of Cambridge, for example, is placed between the Horse Guards and the War Office. The connexion of ideas is obvious and, so far as perhaps correct, but the statue itself has no special relation to these buildings or to other surroundings. It is left stranded in the middle of the road, where it produces little more effect on the spectator than would a broken-down motor-bus.

If we could always be sure that those in authority would rise even to this height it would be something to be thankful for, but one has only to go to Tooting Broadway to see the latest statue of King Edward VII placed at one angle of a triangular space in the middle of the road entirely occupied by an underground convenience. The statue has its back to the convenience and its face to a cab-rank. It is a pity that the Art Commission of New York was not hand to point out to those responsible for selecting this site that it is possible to dishonour those worthy of honour by honouring them in an unsuitable place."

VANDALISM AT SHEFFIELD

THE sort of absurdity too often perpetrated by our civic authorities is exemplified by a tram shelter lately erected in front of the Crime Memorial at Sheffield. This monument was designed by the late George Goldie in the early sixties, and sculptured by the late Thomas Earp. It is a competent and characteristic piece of work of the period.

Until its place was usurped by an upstart tram shelter this monument, flanked by a couple of old Russian guns and backed up by St. Paul's Church, with its cupola, formed an interesting termination to one of the few well-designed streets in Sheffield.

The island site on which this monument stands had already been invaded by an underground lavatory, now comes a tram shelter. We can only wonder what next. An ambulance station, a fire-alarm, a telephone call-box, horse-trough, an orderly-bin, a cabmen's shelter—all these are objects of public utility for which this central position should be suitable.



Schiller Monument, New York.

"A well-placed Bust as it is a part of its surroundings, and these are suitable to a poet."

But they will all arrive in time, or, at any rate, as many as there is room for, when the Memorial, instead of calling attention to the heroism of a past generation of our soldiers, will call attention to the zeal but hardly to the intelligence of the present generation of public officials. At present it undoubtedly has the very useful purpose of calling attention to the tram shelter—not to mention the underground lavatory.

It is more surprising that this lack of consideration of the meaning and object of a monument of this nature should be shown in Sheffield, as this city has lately shown an interest—almost, we might say, an enthusiasm—for town planning, and is now engaged in working out a scheme which we have been given to understand is to be handled in a broad and comprehensive lines.

But, at any rate, it will not be possible to have such minor conveniences as tram shelters, lavatories, or the various objects of public utility to scramble for prominent situations without regard to the general effect.

Probably as the scheme develops the relative importance of tram shelters and their relation to public monuments will be fully realised, when this particular one will find its proper place.



"The Still Hunt" Statue, New York.

"This is an ideal location for this particular Statue."

CIVIC DESIGN NOTES.

Borough. The Corporation are negotiating to purchase the undercliff from the Spa grounds along the front to Holbeck, and will make a road and steps. A scheme is formulated to lay out the outlet 7,000 ft. in the course of the next months upon the laying-out of the undercliff facing the South Bay, to be bought by the Corporation, and to include bathers' bungalows, a children's public shelter, etc. The entire scheme extends to a bathers' pool, buildings for refreshment, a café, lounge, and so on, an outlay of about 40,000l.

Housing and Water Supply in Florence.

A GREAT development in the building of cottages and workmen's dwellings has of late years taken place in Florence. Since 1909 211 new buildings have been erected and fifty-one enlarged, giving a total of 580 dwellings with 3,547 rooms. They are mostly situated outside the gates in the San Barvasio, Rifredi, and San Salvi quarters. The rents were fixed at 8l. for apartments with two rooms; three rooms, 12l.; four, 16l.; six, 24l.; seven, 28l.; eight, 32l.;

nine, 36l.; ten, 40l.; eleven, 50l.; twelve, 60l. They were built for the most part by co-operative building societies, which number forty-one. The price paid for the land was from a minimum of 1s. 2½d. per metre (San Salvi) to a maximum of 14s. per metre (Via Giotto). In addition to the foregoing, 425 new houses (for the most part cottages) were to be ready in November, 1910. In 1909 the Communal Council decided to create a Board (*Istituto Autonomo*) for the building of workmen's dwellings, assigning for this purpose 20,000l. Three blocks have already been built



How Sheffield fills its Squares.

(From the Sheffield Telegraph.)

in three different localities. They consist of 160 small apartments, thirty-six with two rooms, sixty-four with three rooms, and sixty with four rooms. Each apartment has a small plot of ground, separate water-closet, water supply, and a loggia. There are also large lavatories, and a special room reserved for medical examinations. The State railways have by a special law assigned 600,000*l.* for the building of houses for railway officials whose salaries do not exceed 140*l.* per annum, and their construction has been begun in the most important railway centres. A large block will be built in Florence, for which the sum of 32,000*l.* has been sanctioned. The houses will be built on land given gratuitously by the Commune in the St. Jacopino quarter, and will consist of 200 apartments of about 600 rooms, some being of two and some of four rooms.

The important question of the water supply of Florence has not yet been settled. The last Communal administration wished to develop the present system, which consists in obtaining the water from the Arno, prolonging the present tunnel by boring new wells along the Arno, and especially by the adoption of the *Avvenamento*, which consists in obtaining directly and from the surface of the river a certain quantity of water to be injected by special drainage through the soil, which will serve as a filter. It is, however, objected by many competent persons that the water so obtained will not only be of doubtful purity, but also will be unequal to the wants of the population, as there is very little water in the Arno during the summer months. In any circumstances it is thought to be much safer and more economical to have the water of the river passed through proper scientific filters instead of through the natural sandy deposits.

A SUGGESTIVE report by Mr. Town Planning George Bell, the Borough Engineer and Estate Agent for Swansea, to the Swansea Corporation, deals in a well-considered manner with the possibilities of controlling the growth of the city so as to make newly-developed districts healthful, convenient, and pleasing to the eye, and also makes a bold appeal for the improvement of the city as it now exists. Mr. Bell hopes that the latter will not be regarded as the advocacy of reckless extravagance, and points out that there is such a thing as reckless economy in civic administration. He rightly believes that there is far more to be gained by measures calculated to attract manufacturers, trade, and population than by short-sighted economy prompted simply by the desire to reduce the burden of rates.

At a recent meeting of the Tarred Roads. Institution of Municipal Engineers Mr. W. Astley Norris gave some useful hints on tarred roads. In the course of his remarks he stated that the most successful system is that of tarring furnace slag, introduced by Mr. E. P. Hooley. The method of preparing this road material, as in most cases of tar-macadam, is to thoroughly dry the stone by heating, and then to apply hot tar and mix thoroughly. Limestone was very extensively used at first, and selected for tar-macadam, on account of its absorbent properties, while dense, blast-furnace slag of better quality, a harder and comparatively better wearing material, has since been largely adopted. Where roads have a good face, and it is possible to tar-wash the surface at least once every four months, tar as a surface binder will undoubtedly be a success. It will not, of course, make a weak road subject to disintegration from below a strong one. A road compound throughout of thoroughly tarred material will do all that surface treatment cannot do. The failure of tar-macadam has been in a great measure due to inability to get the tar to adhere to the material to be tarred. Moisture on the material or cooling of the tar means failure of adherence, and the use of soft materials which would adhere quickly means failure through the road giving way owing to inferior material.

In order to construct a good tar-macadam road it will be necessary to have an ordinary road as a bottom, or to form as good a foundation as possible. If a waterproof road is desired, then it must be of tarred macadam. The bottom layer can be 4-in. gauged material, laid and rolled, with the interstices filled up with finer tar-macadam, and the whole steam rolled. The second layer should be about 2-in. in thickness of 2-in. tar-macadam, and left

unrolled; on this should be applied a layer of 2-in. gauge tar-macadam, and rolled into the 2-in. and when rolled 2-in. tar-macadam should be swept with a brush into every crevice or open joint. As a last coating, in order to join the face, a perfect layer of 1-in. tar-macadam should be applied, and after the roller has passed twice each way over its face, 2-in. tar-macadam should again be swept into each crevice, so that a perfect surface is obtained.

Thrale-road, Streatham.

THE corner of Thrale-road, at Tooting Common presents difficulties to vehicular traffic which could be minimised, and the slight alterations needed would be welcomed alike by drivers and pedestrians; but the proposal of the Wandsworth Borough Council to give work to the unemployed by projecting Thrale-road across the Common does not commend itself. The present roads do not need to be supplemented, and if the intention of the local authority is realised one of the most picturesque places of recreation near London will be spoilt. Lady Amherst once described the trees in the neighbourhood as quits patriarchal, "with nothing suburban about them," and, indeed, everyone who knows that part of the Common is attracted by its rural character. It is a health centre for children especially, and to destroy natural beauties for doubtful utilitarian ends would be a municipal error. It may be hoped that the London County Council will not surrender the land for the purpose.

Hillside Planning.

WE are interested to notice in the particulars of the competition for workmen's houses held in connexion with the Royal National Eisteddfod of Wales that competitors are earnestly requested to have special regard to Welsh physical conditions, not only in building on the flat, but also on hillsides. A good solution of hillside planning is much desired.

This certainly is the case elsewhere than in Wales, and we are glad attention has been drawn to the subject. We hope the competition will have the desired effect.

Cambridge Housing Problem.

THE action of the Corporation of Cambridge in demolishing insanitary houses, combined with a rise in the rents of those that remain, appears to have brought things to such a pass that it is impossible for unskilled labour to afford a roof over its head. According to the special correspondent of the *Daily News*, whole families are driven to the workhouse, while outdoor relief is afforded to others simply to pay the increase in rent. Cambridge must be a paradise for the landlords. It is said that the Corporation is taking steps towards putting the Housing Act in force. It does seem almost time that they did so.

Garden Suburb, Haslemere.

A SCHEME for a garden suburb at Haslemere, upon 6 acres of land, comprises the erection of fifty houses, the tenants becoming shareholders and receiving 5 per cent. interest on their money invested, with division of profits. Mr. Williams is Chairman of the local Committee for carrying out the project.

Wimbledon Common.

THE Corporation of Wimbledon and the Borough Council of Wandsworth have been in communication with the Commissioners of Wimbledon Common with reference to the provision on the Common of sanitary conveniences and of facilities for refreshments. This opens up the whole question of the right attitude to adopt towards all rural tracts of common land as they gradually become surrounded by the building area. Is it desirable to retain their rural character? If so, is it possible to do this and at the same time make proper provision for their full enjoyment by those who most need the benefit to be derived from them? No doubt, most people would wish Wimbledon Common to remain as it is, but, all the same, there is little doubt that large tracts of it are comparatively useless to any but local residents or the more leisured and well-to-do classes from a distance, owing to the lack of these facilities. If, then, their absence tends to lessen the benefits to be derived from the Common, it must tend to defeat the very object for which the Common is preserved. There are already several buildings and enclosures on the Common,

notably at the Windmill, which would make capital refreshment-rooms and tea gardens without interfering with the general aspect of the Common. In any case, we feel sure that the Conservators will not permit anything to be done except in accordance with the architectural advice.

A Progressive Canadian Town.

THERE has been a settlement for a long time at Prince Albert, Saskatchewan, but not until the advent of the railways and the opening up of the farming areas around did the city itself start to increase in size to any great degree. In 1891 the population was only a few hundred isolated settlers, while to-day, just twenty years later, it is fully 8,000. The rateable value of the city has increased from 500,000*l.* in 1906 to 1,500,000*l.* in 1910. The last two years have seen a wonderful growth. The value of buildings started in 1909 was only 30,000*l.*, while in 1910 it was 130,000*l.* Other statistics, such as Customs returns and traffic receipts at the railroad, point to an equally healthy state of affairs.

An International Highway.

THE vogue of the motor in the North American continent seems destined to be more than any other movement to help forward the provision of good road communication, a feature which is sadly in arrears. It has been decided to construct a "meridian" road or main highway between Winnipeg and the Gulf of Mexico, a distance of 1,600 miles. The road will follow the line of the Red River Valley, and traverse the following six American States:—North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. The project is supported by grants made by the provinces of Manitoba and the Governments of the States referred to, and by the municipal authorities of the principal towns lying along the route.

New Town-Planning Authority for Berlin.

AN authority to be created by a new Prussian Act of Parliament, taking effect from April 1, 1912, will have jurisdiction over traffic facilities, street design, city planning, and public parks, in the special metropolitan district, which may be termed "Great Berlin," including the city proper, Charlottenburg, Lichtenberg, Niederschönhausen, Rixdorf, Schöneberg, Spandau, Teltow, and Wilhelmsdorf.

The authority will consist of 100 members elected by the local Councils and a Council of nineteen members elected by the general body both under the Presidency of the Burgomaster of Berlin. Contributions will be levied from the local Councils to pay for works undertaken by the new authority, the scope of whose duties are briefly stated below.

Traffic Facilities.—The purchase, construction, or operation of railways, either directly or leasing the right of operation, with the right to use the public streets for railways subject to payment of compensation. Existing municipal railways may be acquired without the usual consent being asked, existing private railways will come under the jurisdiction of the new body, and all new railway projects must be sanctioned by the authority before construction.

Street and City Planning.—Street lines must be settled by the authority as necessary for improving or creating thoroughfares, for railway purposes, and for the creation of central open spaces. In districts not yet built up arrangements of streets and city planning generally will come within the province so as concerns traffic facilities, housing, sanitation, thus for the first time providing official control over city planning in Great Berlin.

Parks and Open Spaces.—The power to create parks and recreation-grounds and control the use, maintenance, and improvement of all such open spaces, with power to delegate maintenance to the local Councils at rates of remuneration to be settled in every case.

It is stated that the Local Government Board have given their authority to the Bournemouth Corporation to prepare a town planning scheme under the Act of 1909, in the matter of 200 acres in the Boscombe East and Southbourne Wards, inclusively of the Wentworth Lodge and Boscombe Manor Estates.

THE BUILDING TRADE.

RECENT WORKMEN'S COMPENSATION CASES.

Recent decisions of the Court of Appeal in cases under the Workmen's Compensation Act have involved the consideration of some points of unusual and importance.

Out of and in the Course of Employment": Sunstroke.

In the case of Davies and Gillespie an officer on a ship, whilst superintending the cargo in Hayti, suffered a sunstroke. He was exposed to the sun in the line of his duty for some hours, standing on the deck, and was compelled to enter the hatchway. The Court held that there was sufficient evidence to justify the decision of the County Court judge that the injury was by the nature of his employment exposed to special risk, and that the injury arose out of and in the course of his employment.

The facts in this case seem to fall somewhat between those in *Warner v. Couchman* (The *Builder*, February 3 last), and affirmed (House of Lords November 10 this year), where a baker's man in the course of his rounds was frost-bitten, and *Andrew v. Falls* (The *Builder*, May 14, 1904), where a man working on a scaffold was struck by lightning. In the former case it was held that if frost-bite were an "accident," employment involved no special risk outside that incurred by all persons working outdoors; but in the latter case the man's exposed position was held to be a special risk from lightning.

Wasp-sting.

In the case *Amys v. Barton* the engineer of a thrashing machine died, as it was from a wasp-sting, which set up blood poisoning. He was engaged in thrashing at the time, but the Court held that there was no risk from wasps specially connected with his occupation, and that the injury did not arise "out of the employment."

A decision may also be usefully compared with others, so that a principle may be deduced. In *Bowland v. Wright*, a stableman was bitten by a cat, and this was held to be an accident to his employment; but in *Wigan v. Wigan*, a lady's maid, frightened by a cat, injured her eye, and this was held to be an accident to her employment.

Asphyxiation.

In *Immonds v. Owners of Ship Peterson*, a ship engineer had rigged up a makeshift stove which he had permission from the chief mate to use in the daytime, but not at night. The cold was intense at Odessa, and he used his stove one night and was asphyxiated. The majority of the Court and dissenting of the Rolls, with hesitation, held that there was evidence that some heating was absolutely essential in the circumstances the accident arose out of and in the course of the employment. In this case, at present reported, no point appears to have been made of disobedience to orders. He may be accounted for by the fact that his contributory negligence nor serious misconduct, when the consequences of the accident are death or serious and permanent disablement, affords any defence for the employer to the claim.

II.—Incapacity.

Cases relating to the causes and duration of incapacity are becoming more and more difficult to reconcile.

In the recent case *Noden v. Galloways*, 1902, a riveter sustained an accident which necessitated the amputation of his right finger. He was paid compensation for the loss of the finger, and in 1903 was taken on by his old employer as a caulker, and he continued to work until 1910. In 1910 a pneumatic riveter was introduced, and the extra weight

and vibration caused the man's hand to inflame. He then claimed a renewal of compensation as from the original accident in 1902. The County Court judge held that the accident of 1902 was one of the contributory causes to his incapacity, and awarded compensation. The Court of Appeal held this decision to be erroneous, both on the facts and the law. The Court laid it down that it was not sufficient to show that a former accident was a contributory cause, and instanced the case of two accidents, one in 1902 and one in 1910, the man being engaged by different employers on each occasion. In such circumstances, it was said, the 1910 employer would be alone liable, and the former accident could not be shown to have contributed. It must be confessed that this decision, satisfactory as it appears, is very difficult to reconcile with the principles applied in former cases. The Courts have held that employers are liable for incapacity, and that the burden of showing it has ceased is laid upon them. In the case of *Cory Brothers, Ltd., v. Hughes*, a case we commented upon, *The Builder*, September 15, a man engaged upon light work, which he had successfully performed for two years, was prevented from continuing it by heart disease entirely disconnected with the accident, yet the employers were held liable again to pay him compensation.

The fact is that the Act has been construed in a manner which creates great difficulty. It has become extended by a continuous series of decisions little by little until a Chinese puzzle has been created. The liability imposed upon employers is cumulative. If an employer engages a man with a diseased heart, a strain which would not injure a sound man is held to be an "accident" in the case of the diseased man (see *Hughes v. Clover, Clayton, & Co.*, *The Builder*, March 26, 1910); similarly, it is presumed, if an employer engages a man suffering from disability caused in a former employment which renders the man more liable to accident, the new employer takes over this risk. When the man is once incapacitated the employer has to show incapacity has ceased.

We dealt with this latter question in the *Builder*, June 2 last, and it will be seen that the decision in *Noden's* case, as at present reported, is difficult to reconcile with the decisions there noted.

III.—Compensation.

The eight-hours' day has already caused a question to arise in connexion with the amount payable to workmen incapacitated by accident.

In *Bevan v. Energlyn Colliery Company* a collier injured by accident in 1907 was then earning 2*l.* 1*s.* 1*d.* When he resumed work in 1911 he was earning 1*l.* 12*s.* 7*d.* It was proved that, owing to the Coal Mines Regulation Act, 1908, wages had fallen considerably, which to some extent accounted for the difference in the man's earnings. The County Court judge held that he could only regard the amounts earned, and on this basis assessed the sum due to incapacity at 1*l.* 6*s.* 6*d.*, but he intimated that, if the effect of the Eight Hours Act had to be taken into consideration, then the amount would be 2*s.* a week.

The Court of Appeal held that the judge had misdirected himself, that he was bound to regard the reduction of wages brought about by the Act, and assess the amount accordingly, and the amount awarded was therefore the 2*s.* This decision is very important, as, under the Workmen's Compensation Act, 1897, a contrary decision was given in the case of *James v. Ocean Coal Company* (the *Builder*, May 28, 1904).

The reason for this decision is an alteration of the wording of Schedule 1, par. 3 in the Act of 1906.

In the case *Victor Mills, Ltd., v. Shackleton* a workman permanently incapacitated had received in weekly payments the sum of 17*s.* 6*s.* 7*d.* The employers applied to have the weekly payments redeemed by the payment of a lump sum. The County Court judge assessed an imaginary sum of 300*l.* as

what would have been awarded originally, and, deducting the sums paid as weekly payments from this imaginary sum, he awarded the balance. This was held erroneous, and the Act is now explicit as to how such lump sums shall be assessed (see Schedule 1, par. 17).

On this paragraph of the first schedule the Court of Appeal on November 7 have again given a very important decision in the case *Calico Printers' Association, Ltd., v. Higham*. The paragraph declares that where a weekly payment has been continued for not less than six months the employer may apply to have it redeemed by payment of a lump sum "of such an amount as, where the incapacity is permanent, would, if invested in the purchase of an immediate life annuity from the National Debt Commissioners, through the Post Office, purchase an annuity equal to 75 per cent. of the annual value of the weekly payment, and as in any other case may be settled by arbitration."

In the first place the Court held this to apply to both partial and total incapacity as long as either can be said to be "permanent." "Permanent" in this connexion the Court defined as "stable." If the man's condition is not stable, if he may grow worse or better, then the 75 per cent. rule does not apply, and the amount of the lump sum must be determined by arbitration; if it is "stable" or "permanent," then the lump sum must be the amount defined by the paragraph.

In the case in question the man had lost the first finger of his right hand, and his thumb had become stiff, and he was no longer able to pursue his trade as a cotton spinner. He was, however, earning something, and the County Court judge, in December, 1910, had estimated he was capable of earning 1*l.* a week, and had awarded a weekly payment of 9*s.* 8*d.* On the application in June, 1911, to fix a lump sum the judge had applied the 75-per-cent. rule to this sum, and had awarded 312*l.* The case was sent down for rehearing, the permanence of the incapacity to be determined.

It may be noted in this connexion that, although it is often assumed under the Workmen's Compensation Act that the maximum liability is 300*l.*, the amount fixed when death ensues upon an accident, this assumption is by no means correct. Where a man is permanently incapacitated, the liability may far exceed what would be incurred in a fatal case, as the weekly payments must either be continued for life or commuted on the 75-per-cent. basis. Thus a man of twenty-one permanently injured while earning 1*l.* a week would represent a liability in the purchase of an annuity of some 438*l.*

IV.—Medical Examination.

In *Morgan v. William Dixon, Ltd.*, the House of Lords (November 13) decided that where a workman under Schedule 1, par. 4, was required to submit himself for examination by the employer's medical man he could not as of right demand the presence of his own doctor. The House intimated, however, that this was a question to be decided by the arbitrator, and that in most cases such a course would be reasonable.

V.—Public Authorities Protection Act.

The last decision we need refer to is *Fry v. Mayor, etc., of Cheltenham*, in which it was held that the limits of time prescribed by the Public Authorities Protection Act, 1895, have no application to proceedings under the Workmen's Compensation Act.

NEW PAVILION, PENZANCE.

A new pavilion is to be erected in the Alexandra Grounds, adjoining the Western Promenade, from the designs of Messrs. Cowell & Drewitt, Lics.R.I.B.A., architects, of Penzance and Newquay. The pavilion will include a winter garden, 73 ft. by 50 ft., and a concert hall, 50 ft. by 45 ft., fitted with a stage. When required, the winter garden and concert hall can be converted into one, providing accommodation for about 1,000.

LAND TAX VALUATION.

We have received the following communication from Mr. E. G. Pretymann, M.P., the President of the Land Union:—

"The decisions of the Court of Appeal in the actions 'Burghes v. The Attorney-General' brought under the auspices of the Land Union, and also Dyson v. The Attorney-General,' confirm the judgments of Mr. Justice Warrington and Mr. Justice Horridge that the inquisitorial demands known as Form VIII. and Form IV. are 'unauthorised.' The issue of these forms is typical of the attitude adopted by the Commissioners of Inland Revenue, and it is to be hoped that these decisions of the High Court and the forcible comments of his Majesty's judges will check the growing tendency of Government Departments to extend their powers and construe Acts of Parliament to suit their own purposes. These illegitimate methods have for their first and easiest victims those who, from lack of means or information, are slow to exercise the right they have possessed for centuries of appealing to the Courts of Justice against the arbitrary action of the Executive.

But these decisions have settled only two out of many points upon the provisions of the Finance Act, where the interpretation placed on them by the Commissioners is open to grave doubt. The Land Union, acting upon the advice of Counsel, has prepared a detailed statement of some further important questions which have already arisen, and I wish to take this opportunity of notifying these to property owners, and to their professional advisers, and to strongly urge them to make a formal objection to every provisional valuation where any of these questions arise until it has been settled by the referees or by the Courts.

The following are a few of the points at issue:—(1) Whether the Commissioners are right in refusing to make any allowance for the value attributable to land appropriated for roads? (2) What is the proper method of deducting the value of tithe? (3) What is the true interpretation of the phrase "value attributable to buildings"? (4) Whether, in the case of agricultural land, deductions are allowable for expenditure on drains and fences? (5) What is the method of arriving at the agricultural value of undeveloped land? (6) When does duty become payable on undeveloped land which is let? (7) Whether the Commissioners are right in claiming mineral rights duty on arrears of rent accrued before, but received after, the passing of the Act? (8) Whether "surface rights" are liable to mineral rights duty? The Commissioners have appealed against the decision of the referees that they are not liable. (9) Whether the Commissioners' contention that increment duty is leviable upon value attributable to a builder's general scheme of development is correct, having regard to the Chancellor of the Exchequer's statement that value due to "skill, brains, and expenditure" should not be taxed? (10) Whether, when a property is sold above its market value, such excess should always be taxed as increased site value is correct? (11) Whether substituted site value can be claimed where ground rents have been purchased or leases granted? (12) Whether the fact that an owner has not stated the value of his minerals on Form IV. debars him from placing a value upon them subsequently? The detailed and specific statement can be obtained by applying to the Secretary, Land Union, Westminster."

NEW CHURCH, RHYMNEY.

This church has been erected at a cost of about 1,400l. from the plans prepared by Messrs. Habershon & Fawcaker, architects, of Newport, and the seating accommodation of the building is 500. The contract was carried out by Messrs. Williams & Son, builders, of New Tredegar.

ST. MARGARET'S NEW CHURCH.

Messrs. Austin & Paley, of Lancaster, are the architects for this church, which is being erected at a cost of about 7,000l. The contractors for the work are—Messrs. R. Rathbone & Son, Atherton; joiner—Mr. J. Dickinson, Bolton; plumber—Mr. J. W. Witter, Bolton; slaters—Messrs. J. & T. Till, Lancaster.

THE BUILDERS' BENEVOLENT INSTITUTION: ANNUAL DINNER.

THE sixty-fourth annual dinner of the Builders' Benevolent Institution was held on Thursday last week at the Whitehall Rooms, Hotel Metropole, Charing Cross, W.C. Mr. F. G. Rice, President, in the chair, supported by 167 friends of the Institution, including Messrs.

James S. Holliday, President, Institute of Builders	Ch. A. Harman
James Carmichael, J.P., Past-President	C. Devereux Harman
Frank May, Treasurer	L. H. S. Stanbrough
H. H. Bartlett, Past-President	J. F. Hamlyn
Fred. Higgs, Past-President	H. Barnacott
J. Randall, Past-President	John T. Bolding
Wm. Willett, Past-President	J. E. Hearnly
James Anderson	Ed. Allen
C. Fitzroy Doll	A. J. Philcox
Geo. Gorderoy	A. D. S. Rice
W. H. Stringer	Chas. Revley
Howard W. Trollope	W. Chikot
H. Wall	Jos. Sabay
F. Wall	A. Fry
F. J. Minter	J. H. H. Worth
A. B. H. Colls	W. Smith
A. L. Howard	C. L. Gull
Walter Lawrence	A. Finch Hill
C. P. Kearley	W. Landaw Smith
C. Parker	J. R. Thomas
Lena J. Maton	E. E. Way
J. F. Nicholson	R. B. Chessum
W. F. Neighbour	Leoc. G. Rendal
J. Clarke	L. W. Vire
Ben Carter	L. P. Thurgood
Edmond J. Hill	H. Y. Toll
J. W. Chessum, Past-President	Chas. Young
R. J. Holliday	A. J. Harding
B. J. Hellyer	H. A. Flinn
Alex. Steven	R. Saunders
Chas. Gude	D. W. Swainsbury
A. H. Downton	R. E. Keys
J. Macquire	W. E. Brown
K. Forbes	H. England
A. J. Dearberg	Alex. J. Smith
R. B. Bierley	D. Smallwood
W. F. Pardo	B. Nightingale
C. J. Clark	A. E. Nightingale
T. Stirling, jun.	R. Clarke
G. H. Hellyer	A. Evans
W. E. Trent	H. Levy
H. Hardy	T. S. Boulton
J. G. Alexander	J. Arnold
R. Coultrane	J. Stringfield
F. Elstob	W. E. F. Olli
Horace A. Cunis	Geo. Bartlett
H. L. Cabathe	W. H. Aston
J. Wilson	R. Woodward Aston
Jas. Munro	S. Nicholls
G. Goodman	A. Blomfield Jackson
H. J. Clark	H. Gopner
J. H. Steven	P. Wilkes
E. G. Bare	B. Fell Clark
J. B. Pardo	John Wood
W. Mitchell	S. Horsley
J. E. Vane	H. Wheater
W. Pearson	E. F. Philliston
P. W. Davis	W. Johnson
J. E. Vane	A. T. Johnson
E. Craig	R. Woolleston
W. Gannon	D. Cooper
J. Wolfe King	C. D. Prestlar
J. G. Ostley	E. L. Haslett
R. A. Marshall	W. Wedman
C. F. A. Poland	W. Reason
	A. S. L. Macintosh
	H. Kirby
	D. Geddes
	J. J. Bristolow
	W. Bryant
	J. Bullman
	W. F. Peberdy
	T. W. H. Perry
	T. G. Costigan, Secy.
	And others.

The loyal toasts having been suitably proposed by the President and honoured,

The President proposed the toast of the evening, i.e., "The Builders' Benevolent Institution," and in doing so made an eloquent appeal on behalf of an excellent institution. He said they were there to think of and to relieve the cares, troubles, and necessities of their less fortunate brethren—men who have had to fall out of the stern march of business, men who had fallen by the wayside through sickness, want, and despair and whose only bulwark between them and the yearning gulf of poverty and hunger and, save the word, the workhouse, was the Builders' Benevolent Institution, whose claims to the beneficence and generosity of the company he wanted to make an appeal for. He was appealing for funds for an Institution that had been in existence sixty-four years, had given relief and sustenance to over 500 pensioners, poor and distressed builders and their widows, and now, week by week, afforded the sustenance to sixty pensioners, and, when the time came for them to shuffle off this mortal coil, gave them a decent burial. To carry on this work required a large income, and although there were a number of friends who, year by year, and all honour to them, contributed to its funds, it was to the annual appeal for donations and to this dinner that one had to look for the great bulk of the money required—

1,200l. being the sum. Many numerous friends, builders and members of the allied trades, already generously contributed to his list to the lists of those stewards who had so kind so unselfishly, and so cheerfully undertaken that work, but the amount so far subscribed did not reach that amount. The Institution was most carefully managed by a committee and carried on with the minimum of expense. The committee, year by year, selected a gentleman to act as President, and in past years choice had been most commendable. Sir household names in the building trade, William Cubitt, Alderman Sir James Lawrence, and the late William Higgs, and, twenty-six years later, his son, the present William Higgs, Herbert H. Bartlett, William Shepherd, Joseph Randall, Henry Hollow Benjamin L. Greenwood, Benjamin Ham Frederick Higgs, William Willett, and last, not least, Mr. Frank May, who had succeeded to the Treasurership, and who maintained interest in all he undertook. Throughout literature, whose character was that which filled us with enthusiasm, interest, and emulation. It was the one whose kindness, sympathy, whose tear was for the misfortune of the falling brother. Of whom had we more sweetly sung than of the cheerful giver. Of what subjects had our great painters portrayed more eloquently than that of acts of mercy. Whom had the sculptor's cunning depicted more boldly than the Good Samaritan? These were the thoughts more lofty, the eloquence more irresistible than when the greatest of his age, John Bright, was appealing for the distressed, the destitute, and the suffering, the result of his (the speaker's) appeal for the Builders' Benevolent Institution he had to there were yet in this world those whose hearts were always open to the cry of the sufferer and the destitute, and to them he tendered, behalf of the Institution, his heartfelt thanks. He could not conclude without reference to the loss of Mr. Howard Colls, whose work in cause of the Institution had been most consistent, generous, and unselfish, and who remembered the claims of his less fortunate brethren, must he omit the devotion to the cause of Stirling and Mr. Bolding, nor the able work of the Secretary, Mr. Costigan.

The toast having been honoured,

Mr. James S. Holliday.

President of the Institute of Builders, proposed the toast of "The Architects and Surveyors and in doing so he said that during the thirty years a great change had taken place in the art of building. He remembered when he went into the trade about thirty years ago chief construction was brick, stone, and we with an occasional iron stanchion or girder, then we came to an iron and steel age. He remembered the remark of a very distinguished architect to the effect that iron and steel had become so prevalent that we could practically do without the carpenter. He felt sorry for the carpenter, but there were great hopes for still, because with reinforced concrete it appeared that he often had to put a building up before it was filled in with concrete. In his speaker's early days they looked for strength from thick walls, heavy beams, while now the thinness of the walls and the light construction seemed to be the order of the day with reinforced concrete construction, he sometimes thought that the margin of safety was very small. In those past days, too, he had a reasonable time to do the work, while now it seemed to be a case of the quicker did it the more likely one would be to get a job that was if one were the lowest tenderer. During all these changes the successful architect to play many parts, and he was clearly a man of many talents. He had had very close relations with architects, and had seldom to refer to the arbitration clause in the specification—the result which was, as a rule, not satisfactory to either side. It was the earnest desire of most builders to co-operate faithfully with the architect and the surveyor in an attempt to put up buildings worthy of the generation. As to surveyors, builders depended on the bills of quantities being a fair representation of the work in the specifications and on the drawings, and he would like to bear testimony to the efforts of quantity surveyors to bring about uniformity of quantities.

Mr. C. Fitzroy Doll,

in responding for the architects, said that architect he was entitled to, though a g

said that the first thing an architect study was quantity surveying, for if he stood quantity surveying he would under- construction. So he was sent by Sir an Tite to an eminent quantity surveyor, I. F. Critten, who would be regarded by as the father, almost, of quantity survey- and he learnt a great deal about construc- but the construction was very different that of to-day. Forty years ago he was led to look upon builders and all their ways great suspicion, and perhaps at that time justified to a certain extent, as the builder then to control everything in the con- of a building. But what was he now? He had done the digging, concrete, and work, and provided the plant, in most cases merely the organiser and paymaster of a lot of contractors. He was sorry to see the condi- the building trade had got into—Italians, asphalt and mosaic floors, Germans doing work, Italians, Belgians, and French dabbling and rag work, and all the poor had to do was to find the money on day, for he had very little control over the that was being done. He thought that wrong from more points than one. When architect got a job all sorts of people came to specify their goods, and he did not think was the way to treat the trade, and archi- would like builders to take all this responsi- off their shoulders. As to the architect- profession, if a man took to it he loved it much indeed, for it was one of the greatest passions, and one of the most extraordinary was that it had been recognised so little the British public. Much was made of all other great professions—the Army, the Church, Law and Medicine—but why? It did not really do much for the State, architects and builders provided buildings, produced the whole of the municipal and a large proportion of the Imperial one of the country, to say nothing of their value. Yet what was their treatment, really by the daily Press? When a founda- stone was laid the architect, as a rule, led the trowel and the builder the mallet the level, but how often did the Press on the names of those responsible for the? But if anyone stole a handkerchief it did not come brought up at Bow-street, defended by Mr. B. Brown, not only would be stated, but the day after there would be a paragraph mentioning that the Mr. Brown led to was Mr. Beucephalus Brown. Men who spent years of thought on the of a building were ignored, and yet they, the help of builders, did so much that of advantage to the State and the people. Architects and builders had many interests in; the architect's business was to see the client was well-treated and that he received a proper and reasonable on his work.

Sec. Corderoy, F.S.I.,

ponding for the surveyors, said he supposed never was a time when accounts were complicated or when the construction of building was more complicated than it is now; but while he sympathised with the surveyors' point of view as to sub-contractors or lists he did not see how the practice of having them could be altered, for with the of knowledge and science building con- was likely to become more complicated ever. As to the vexed question of the standardisation of quantities, there had been in this direction in recent years, but it had been entirely for good or not an open question. There were those who had given attention to the subject who said that there was danger in pushing standardisation too far, and whatever happened could not dispense with the trained pro- fessional mind which must determine the point which standardisation should cease and free be given to inventive ingenuity, and, therefore, to progress. If there had been a deal of standardisation in the past there would not have been the progress we have had; and should not forget the ancient Egyptians, who standardised things to such an extent that individual initiative in design died out. He did a gentle protest against the attempt to standardise too closely professional work of kind.

I. H. Bartlett

proposed the toast of "The President, Residents, Trustees, Committee, and

Stewards," and said that the Institution was administered with the minimum of cost. Even with the 1,200, which the President hoped to raise they would, he was afraid, find their resources unequal to the demands they had. He would be willing to subscribe another 150, or 200, if ten others, say, would do the same. With the toast he coupled the name of Mr. J. T. Bolding, a very old friend of the Institution, who had worked for it for many years and gave his time to the Institution for pure love.

Mr. Bolding

suitably replied, and thanked the President and others for what they had done for the Institution. The Committee took very great care of the money entrusted to them, and he could not believe there was any Institution in the country managed with as little expense or more care than the Builders' Benevolent Institution.

The last toasts were, "The Visitors," proposed by Mr. Ben Carter, and acknowledged by Mr. Alexander L. Howard; and "The Secretary, Mr. T. G. Costigan," proposed by Mr. Bolding, who referred to the excellent way in which Mr. Costigan managed the affairs of the Institution and the personal interest he took in the work, and briefly responded to by Mr. Costigan.

During the evening it was announced that as a result of the President's appeal the sum of 1,078. 8s. had been received or promised, including one hundred guineas from the President himself and 1000, from the Institute of Builders. The President mentioned that the Duke of Bedford had promised a contribution, and that Lord Kinnaird and Sir H. Samuel, M.P., had written to him expressing sympathy with the objects of the Institution and their regret at their inability to be present.

GOVERNMENT CONTRACTS.

The following tenders have been accepted during the past month by the Government departments named—*Admiralty, Works Department:* Works services, construction and erection of steel-framed brow at No. 3 Slip, Devonport Yard—Messrs. Redpath, Brown, & Co., Ltd., Riverside Works, East Greenwich, S.E.; erection of new coastguard station at, Sennen Cove—Mr. James Crockerell, Richmond-walk, Devonport; erection of new signal-station at Andover-hill, Lerwick—Mr. A. B. Douglas, Market-street, Lerwick; erection of new signal station at May Island, Firth of Forth—Messrs. J. Jackson & Son, Burntisland, Fifeshire; erection of residence for electrical supervisor, Portland—Messrs. Jesty & Baker, Castletown, Portland; penstocks for H.M. Dockyard, Rosyth—Messrs. Sir W. G. Armstrong, Whitworth, & Co., Ltd., Elswick Works, Newcastle-on-Tyne; supply and erection of No. 4 circular oil tanks, etc., Devonport Yard—Messrs. Horsley Company, Ltd., Tipton, Staffs. *War Office:* Works services, alterations and additions to Army Service Corps Canteen, Aldershot—Messrs. Martin, Wells, & Co., Ltd., Victoria-road, Aldershot; additions and alterations, Yeomanry Block, Duke of York's Headquarters, Chelsea—Messrs. G. Godson & Sons, Pembroke Works, Kilburn-lane, N.W.; additions to Sergeants' Mess, Richmond, Yorks—Messrs. G. R. Wade & Sons, Wellington-place, Richmond, Yorks; alterations, etc., to Government House, Chatham—Messrs. G. Gates & Sons, Frindsbury, Rochester; brick flats for huts, Kildare Barracks—Mr. R. L. Warren, Merville-avenue, Fairview, Dublin; enlargement of Bindleaves Barracks, Weymouth—Messrs. Jesty & Baker, Castletown, Portland; erection of exercising shed, Arbourfield Cross—Messrs. W. Bain & Co., Ltd., 122, Cannon-street, E.C.; erection of riding school, Longmoor—General Building Company, 45, Chandos-street, Charing-cross, W.C.; erections of veterinary hospital, Wellington Lines, Aldershot—Messrs. Martin, Wells, & Co., Ltd., Aldershot; improvements to married quarters, Newcastle—Mr. E. Weatherley, Westgate-road, Newcastle-on-Tyne; installation of electric light at Gaudeloupe and Martinique Barracks, Borden—Messrs. J. B. Saunders & Co., Ltd., 91, York-street, S.W.; installation of electric light at St. Lucia Barracks, Borden—Messrs. G. E. Taylor & Co., 8, Bush-lane, Cannon-street, E.C.; overhead conductors, supports, feeders, etc., for electric light, Borden Camp—Messrs. J. B. Saunders & Co., Ltd., 91, York-street, S.W.; periodical works services, Aldershot (North)—Messrs. A. Bagnall & Sons, Ltd., Shipley; Dover—Messrs. Skevington Brothers, Bateman-street, Derby; Bordon, Hounslow, and Shorncliffe—Mr. F. Holdsworth, 32, Saltair-

road, Shipley; Tamton—Messrs. R. W. Fitcher & Son, 6, Marlborough street, Devonport; Royal Engineer Mobilisation Stores, Longmoor—Messrs. Playfair & Toole, Southampton; sinking borehole and erection of pumping plant, Shoeburyness—Messrs. Perkins Macintosh Petroleum Tool and Boring Company, Ltd., 79, Bishopsgate, E.C. *Crown Agents for the Colonies:* Bridgework—Messrs. Head, Wrightson, & Co., 5, Victoria-street, S.W.; Messrs. Horsley Company, Ltd., Tipton, Staffs; Messrs. F. Morton & Co., Ltd., 17, Victoria-street, S.W.; Messrs. J. Westwood & Co., Ltd., Napier-yard, Millwall, E.; cement—Messrs. Barrons Cement Company, Ltd., 6, Lloyd's-avenue, E.C.; Messrs. Peters Brothers, 72, Victoria-street, S.W. *Office of Works:* Builders' work, alterations and additions to Aldershot Royal Pavilion—Messrs. Cesar Brothers, Hale, Farnham, Surrey. *H.M. Stationery Office and H.M. Office of Works Stores:* Erection—Messrs. Perry & Co. (Bow), Ltd., 56, Victoria-street, S.W.; alterations and an additional staircase at the Hampstead Telephone Exchange—Messrs. E. Lawrence & Sons, Ltd., 15 and 16, Wharf-road, N.; extension, Leamington Spa Post Office—Mr. Arthur J. Colborne, County Building Works, Swindon; painting Chelsea Royal Hospital—Messrs. George Trollope & Sons and Colls & Sons, Ltd., West Falkin-street, Belgrave-square, S.W.; General Post Office, electric lighting, Belfast—Head Post Office—Messrs. Craig & Paton, 2 and 4, Great Victoria-street, Belfast; local telephone exchange equipment, North Shields Head Post Office—British Insulated and Helsby Cables, Ltd., Lennox House, Norfolk street, W.C. *Metropolitan Police:* Demolition of Woolwich (Old) Police Court—Mr. B. Thomas, 121, High-street, Deptford, S.E. *Commissioners of Woods:* New cottages for Holland County Council at Whaplode, Lincolnshire—Messrs. J. R. Bateman & Sons, Sutton Bridge, Wisbech; erection of three pairs of cottages at Cannop Dean Forest, Gloucestershire—Mr. C. J. Miles, care of Mr. V. F. Loose, Whitmead Park, Parkend. *Commissioners of Public Works, Ireland:* Erection of Bunbeg wireless telegraphy station and torpedo instructors' house, Co. Donegal—Messrs. Hugh McManus & Sons, Randalstown, Co. Antrim.

GENERAL BUILDING NEWS.

CHURCH, SWANSEA VALLEY.

St. Mary's Church, Ynysuendaf, is being erected from the designs of Mr. Cook Rees, architect, of Neath, at an estimated cost of 2,000. The contractors for the work are Messrs. Price Bros., of Cardiff.

SCHOOL, LEYTONSTONE.

Mr. W. Jacques, A.R.I.B.A., is the architect for this school which has been erected at a cost of about 12,500. The building, standing on a site of about three acres, provides accommodation for 300 girls, and the design of the building is in the Tudor style of architecture. The contractors were Messrs. Clark & Sons, of Cambridge.

PREMISES, MAIDSTONE.

The new premises which are being erected for Messrs. Dennis Paine & Co., on the site of their old premises, which were destroyed by fire last year, are expected to cost about 10,000. The architects are Messrs. Ruok & Smith, F.R.I.B.A., of Maidstone, the contractors being Messrs. G. E. Wallis & Sons, Ltd., of Broadmaid Works, Maidstone, and London; the asphalt work by Messrs. Engert & Rolfe, Ltd., Poplar; the shop-fronts by Messrs. E. Pollard & Son, 29, Clerkenwell road, E.C.; electric lighting by Messrs. Oswald Jones & Co., of Maidstone; gas lighting by the Maidstone Gas Company.

CONVENT, KEITH.

This building has been erected at a cost of about 1,500, from the plans prepared by Mr. W. F. Stewart, architect, of Keith. The contractors were: Mason, Mr. William Cruickshank; carpenter, Mr. J. Cormack; slater, Mr. A. Strachan; plasterer, Mr. George Hume; plumber, Mr. Angus Joss; painter, Mr. John Symon.

HALL, CHUDLEIGH.

The accommodation of the Chudleigh Liberal Club has been increased by the erection of a hall at a cost of 2500. The architect for the work was Mr. Charles Geon, of Newton Abbot, and the contract was carried out by Mr. W. Shapley, of Chudleigh.

LIBRARY AND ART GALLERY, BLACKPOOL.

These buildings, which adjoin, were opened on October 26. The library is the gift of Mr. Andrew Carnegie, and the art gallery of Mr. John R. G. Grundy, R.C.A., and Mr. Cuthbert C. Grundy, R.I. In the competition assessed by Mr. G. H. Willoughby, F.R.I.B.A., Messrs Cullen, Lochhead, & Brown, of Glasgow, were successful. Mr. Samuel Aromus was appointed quantity surveyor, and Mr. T. A. Connelly acted as clerk of works. Messrs. Dryland & Preston, of Blackpool, were the general contractors. The building, situated at the junction of May Dell-avenue and Queen-street, is of Accrington brick, with stone dressings from Greetland Quarry. (It was illustrated in the Builder, February 13, 1909.)

TRADE NEWS.

The Church of the Holy Family, Southport, is being ventilated by means of Shorland's patent exhaust roof ventilators, supplied by Messrs. E. H. Shorland & Brother, Ltd., of Falsworth, Manchester.

Under the direction of Messrs. Coussens & Rothwell, architects, Hastings, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to Mount Pleasant Congregational Church, Hastings.

Having purchased the goodwill of his late father's name, and obtained the premises and address, Mr. Alfred E. Nightingale, Albert-embankment, London, S.E., wishes it to be known that he is continuing the business, and he hopes to secure the confidence and trust extended to his father, Mr. B. E. Nightingale, builder and contractor, for over fifty years.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At Tuesday's meeting of the London County Council, the following applications under the London Building Acts were dealt with, the names of the applicants being given in parentheses:—

Lines of Frontage and Projections.

Deptford.—Erection of a one-story shop in front of No. 120, New Cross-road, Deptford (Mr. J. H. Waterworth for Mr. S. J. Clegg).—Consent.

Hackney, North.—Projecting porches in front of Nos. 162 to 170 (even numbers only), inclusive, Holmleigh-road, Stamford Hill, and in front of four houses abutting upon the eastern side of Eastbank (Mr. C. G. Duell).—Consent.

Hampstead.—Two two-story bay windows, a projecting porch, and an arched window to a house on the southern side of Ardwick-road, Hampstead, to abut also upon the western side of Fortune Green-road (Messrs. G. Wiggs & Son for Mr. C. H. Burton).—Consent.

Hampstead.—Erection of two houses upon a site on the north-western side of St. Cuthbert's-road, Hampstead, abutting also upon the north-eastern side of Shoot-up hill (Messrs. Rix & Wilkins).—Refused.

Holborn.—Projecting illuminated sign at the Holborn Tavern, along the frontages next to Gray's Inn-road and Holborn (The Durlite Company for Messrs. J. Robertson & Son, Ltd.).—Refused.

Holborn.—Erection of a wood and glass porch in front of Nos. 35-37, Alfred place, Holborn (Mr. G. Vernon for Messrs. Teofani & Co.).—Refused.

Kensington, North.—Erection of bay windows to thirteen houses on the eastern side of Latimer-road, Kensington (Mr. W. L. Trant Brown for Messrs. W. H. Eyles & Co.).—Consent.

Lewisham.—One-story addition in front of a proposed electric theatre building on the eastern side of Silverdale, Lewisham (Mr. E. S. Barr for Messrs. Sheffield Brothers).—Consent.

Paddington, South.—Erection of a water closet addition at the rear of No. 106, Inverness-terrace, Paddington, next to the southern side of Porchester-gardens (Messrs. William Gibbin & Son).—Consent.

St. George, Hanover-square.—Projecting pulley arm in front of No. 21, King-street-mews, Westminster (Messrs. Ralph Knott & E. S. Collins for Mrs. Bevan).—Consent.

St. George, Hanover-square.—Erection of a porch and balcony in front of No. 1, Upper Grosvenor-street, St. George, Hanover square (Messrs. Ralph Knott & E. S. Collins for Mr. G. P. Kent).—Consent.

St. Pancras, North.—Erection of buildings on the southern side of St. Alban's-road, St. Pancras (Mr. R. J. Sinerdon).—Consent.

St. Pancras, South.—Projecting clock in front of No. 73, Tottenham Court-road, St. Pancras (Greenwich Time, Ltd.).—Consent.

Southwark, West.—Erection of a pediment over the projecting shop in front of No. 59, London-road, Southwark (Messrs. Stanley Jones & Co., Ltd.).—Refused.

Strand.—Projecting clock in front of No. 45, Great Marlborough-street, Westminster (Greenwich Time, Ltd., for Messrs. C. Jarrott & Letts, Ltd.).—Consent.

Wandsworth.—Erection of buildings on the north-western side of Balham High-road, Wandsworth, between Nos. 170 and 176 (Messrs. Gilbert & Constanduros).—Consent.

Width of Way.

Southwark, West.—Addition to No. 7a, Bowling-green lane, Southwark, at less than the prescribed distance from the centre of the roadway of the street (Messrs. H. Langston & Co. for the Governors of the Newcomen Foundation).—Consent.

Lines of Frontage and Construction.

Hampstead.—Temporary wooden building at the rear of "Hurdleale," Hollycraft-avenue, Hampstead, abutting upon Platt's-lane (Mr. A. Hughes).—Consent.

Width of Way, Space at Rear, and Alteration of Building.

Whitechapel.—Alterations to No. 40, Chick sand-street, Whitechapel (Mr. W. A. Lewis for Mr. H. Puckman).—Consent.

Formation of Streets.

Greenwich.—Formation or laying-out of a new street for carriage traffic to lead from Park street to Hoskins-street, a new street for carriage traffic to lead from Park-street to Creed-place, a new street for foot traffic only to lead out of the western side of Park-street, and the widening of Park-street, Old Woolwich-road, Trafalgar-road, Creed-place, and Hoskins-street, in connexion with a scheme for the redevelopment of the Greenwich Hospital Crombie Estate, East Greenwich (Capt. W. Warburton, R.E.).—Consent.

Woolwich.—Formation or laying-out of two new streets for carriage traffic in continuation of Gourock-road and Blunts-road, Eltham (Messrs. D. Watney & Sons for Mr. C. H. Polhill).—Consent.

Cubical Extent.

Newington, West.—Additional cubical extent in connexion with extensions of the premises of Messrs. Waygood & Co., Ltd., Falmouth-road, Newington (Mr. M. E. Collins).—Consent.

Uniting of Buildings.

Finsbury, East.—Opening between Nos. 63 and 65, Banner street, Finsbury, at the basement level (Mr. C. Watkins for the City and Westminster Properties, Ltd.).—Consent.

Woolwich.—Doors of special construction in lieu of iron doors to two division wall openings, 9 ft. 4 in. high by 7 ft. wide, between blocks 10 and NO at the premises of the Western Electric Company, Henley-road, North Woolwich (Messrs. Mather & Platt, Ltd., for Mr. B. Dawson).—Consent.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ASHFORD-UNDER-LYNE.—Alterations to Old Shop Inn, Wellington-road, for the Cornbrook Brewery Company.

Birstall.—Alterations to offices, College Mills, for Messrs. W. Holton & Sons, Ltd.

Bonsall.—Limekilns for the Bonsall Wood Bonsall Company.

Byfleet.—Completion of St. John's Church (4,000); the Vicar, St. John's Church, Byfleet.

Catcath.—Workshop and offices, Muirend-road, for Mr. R. Paul.

Chatham.—School (8,365); Messrs. D. Godden & Son, builders, Ham-street, Chatham.

Colne.—Enlargement of Dottle weaving shed (500 extra looms) for Messrs. Duckworth & Co.

Coseley.—Extensions to Mount Pleasant Schools (1,975); Mr. Wm. Roe, builder.

Coventry.—Ward block at Coventry and Warwickshire Hospital (21,575); Messrs. Kelly & Sons, builders. Mortuary and extensions to workhouse laundry; Mr. J. Arch, Clerk, Board of Guardians, Coventry.

Cwmcrn.—Thirty-seven houses for the Welsh Garden City Company.

Dartford.—School (8,350); Messrs. Friday & Ling, builders, Northend Works, Erith.

* See also our list of Competitions, Contracts, etc., on another page.

Doncaster.—Liberal Club, St. James's-street (2,000); Mr. G. Stevenson, builder, 2, Shott's-street, Doncaster.

Durrington.—Mission-hall; Trustees, Free Church, Durrington.

Edinburgh.—Entertainment hall, Laurieston-street, for Messrs. M. & H. Footet.

Ena Wunning.—Painting works for Mr. M. D. Elliott & Son.

Etheray.—School (4,490); Mr. J. A. Robson and Mr. A. J. Dawson, Joint Secretaries, Education Committee, Durham County Council, Durham.

Felling.—House, etc., at police station (1,430); Mr. J. M. Wright, builder, Sheddolds, Sunderland.

Foleshill.—Extensions to workshops for Messrs. Kelly & Sons.

Gainsborough.—Enlargement of baths, Leam-road; Mr. S. W. Parker, Surveyor, Gainsborough Urban District Council.

Gilfach.—Twenty houses for the Gwerthen Building Club.

Glasgow.—Proposed additions to the Chambers; Mr. A. B. McDonald, Surveyor, Glasgow Town Council.

Great Burstead.—Three pairs houses (130 each); Mr. H. R. Bird, architect, St. Thomas's-road, Brentwood, Essex.

Hayes.—Factory, Blyth-road, for the Gramophone Company.

Hayward's Heath.—Additions and alterations at school and provision of cookery oven (1,668); Mr. A. J. Bessant, builder, Keston, Leamington.

Hetton.—Extensions to hospital; Mr. J. Harding, Surveyor, Hetton Urban District Council.

Kettering.—Baptist Chapel, corner of King and Nelson streets; Messrs. Cooper & Williams, architects, 13, Market-place, Kettering; Messrs. A. Lewin & Son, builders, 25, Lindsay-street, Kettering.

Kilbourne.—Additions to offices for the Singer Sewing Machine Manufacturing Company.

Loth.—Grain silos, Swanfield Roller Mill, Bonnington road, for Messrs. J. Wilson & Co.

Liandrinod Wells.—Proposed enlargement of school (1,000); Mr. H. V. Vaughan, Secretary, Education Committee, Radnorshire County Council, Liandrinod Wells.

Llys-fren.—School (5,000); Mr. E. R. Davies, Secretary, Education Committee, Carnarvonshire County Council, Carnarvon.

Luton.—Infirmary and nurses' home at Watlington (8,122); Messrs. T. & E. Nevill, builders, 30, Castle-street, Luton.

Maldens and Coombe.—Proposed five-story main London road; Mr. R. H. Joffe, Surveyor, Maldens and Coombe Urban District Council.

Mansfield.—Primary school (100 places) Trustees, Leeming-street, Primitive Methodist Church, Mansfield.

Market Harborough.—Bank, St. Mary's-road for the Northampton Union Bank, Ltd.

Pontardawe.—Twenty-eight houses (5,544); Messrs. Rogers & Sons, builders, Cardiff.

Runcorn.—Proposed conversion of Dulver House into Children's Home; Mr. G. F. Atton, Clerk, Board of Guardians, Runcorn.

St. James (Isle of Grain, Kent).—School (100 places); Mr. F. W. Crook, Secretary, Education Committee, Kent County Council, Oxted House, Westminster, S.W.

Salthouse (Barrow).—Adaptation of building Raglan-street, into ice factory; Mr. Philip Fisher, promoter, Salthouse-road, Barrow.

Sheffield.—Church; Trustees, Carbonyl Wesleyan Reform School, Surbiton-street, Sheffield.

Stafford.—Electrical engineering laboratories and offices, Cherry-street; Mr. G. Balfour, Secretary, Education Committee, Staffs County Council, Stafford.

Sturminster Newton.—School (1,685); Messrs. H. & J. Hardy, builders, Swanage.

Sutton-at-Hone.—Enlargement of Heston Church of England Schools; the Managers.

Tipton.—Two schools, etc. (420 and 100 places each), Tibbington-terrace; Mr. Richards, Secretary, Education Committee, Tipton Urban District Council.

Tonington.—Additions to Two Brooks Works for the Bleachers' Association, Ltd.

Walker and Benwell (Newcastle).—Proposed baths (20,000); Mr. W. J. Steele, Engineer, Newcastle-on-Tyne Town Council.

Wotton.—Church (6,000); Mr. W. B. Wood, architect, 12, Queen-street, Gloucester.

Yarmouth.—The following plans have been passed:—Four houses for Mr. John B. solicitor; premises, South Dene, for Messrs. Bloomfield's, Ltd.; rebuilding premises, South Dene, for Messrs. Sussans. A plan has been lodged for rebuilding Nos. 59 and 61, King-street, for the Great Yarmouth Company.

Ynysyhir.—Penal English Congregational Church; Mr. C. P. Jones, architect, Pontypridd.

Mr. W. Spratt, builder, Trealew

THE BRITISH SCHOOLS OF ROME AND ATHENS.

have received No. IV. of the *Papers of the British School at Rome* and No. XVI. of the *Journal of the British School at Athens*. Former has been in our hands for some time and it is only through an oversight that it has not been noticed earlier. The value of scholarly publications is too well known to be evenly sustained to need dwelling upon. Interest in both is extremely varied, and many articles whose scope is that of a topographer or ethnologist, the classical or the topographer, are several which are more strictly artistic or architectural.

No. II. of the Roman papers Mr. D. Nizze gives an account of the "Nuraghi" or "Tombs of the Giants" of Sardinia, edited by the British School in 1908-9. These are the fortresses of a prehistoric race, and later their family sepulchres. The word "nuraghi" in its simplest form is a rounded dome of more or less roughly-wrought masonry, forming a corbel-domed central chamber, surrounded by approximately semicircular walls, and approached by a straight passage from which diverge other passages round the central chamber, and by steps to similar upper chambers. All of such structures are sometimes found in one mound, or connected by a wall. The "Tombs of the Giants," as they are believed to be a developed form of the nuraghi, consist usually of an elongated corbelled cell with lean-to aisles, so constructed that the outline of a section through the entire structure forms a single curve. The aisle runs along the inner end of the cell in a semicircular band on each side of the outer end, and is entered from the entrance, the total plan resembling a Y.

No. III. Mr. T. L. Peet combats the theory that the false (i.e., corbelled) vaults of Malta are due to Egyptian influence, and in them an independent development, based in the similar structures of Spain, Italy, and Ireland.

Ashby contributes a further instalment of his erudite and minute survey of the topography of the Roman Campagna, in which he traces the Via Latina from the Xth to the XIIth century. An article by Mr. A. J. B. Wace discusses the artistic affinities of the mosaics in the Palazzo Spada, which are illustrated by photographs, and another by Mr. H. Jones, the historical interpretation of the reliefs of Trajan's Column.

Architecturally the most interesting are Mr. Newton's fine measured drawings of the barium of Pomponius Hylas, which is described by Dr. Ashby. It was built about the middle of the first century A.D. by a freedman, who sold the site to himself, and it remained in use until the reign of Antoninus Pius. The material is brick, faced with brick. The walls and vaults retain their polychromatic decoration, and are of which are reproduced in colour. The vaults are carried out partly in mosaic, partly in stucco, and partly in painting. The scheme comprises architectural, floral, and mythological motives, and is of great charm.

Coming to the Greek *Annual*, we find three articles of considerable interest to architects. The first is the concluding account by Mr. Dawkins of the results of the excavations at Sparta by the British School from 1910. Among the most recent finds are remains of some Mycenaean houses, constructed of "rudely-dressed stones without mortar," whilst for the upper part of the walls a more clearly used. Fragments of the wall show the usual Mycenaean manner of painting the interior. Of more importance is the re-tracing of the stages in the history of the sanctuary of Artemis Orthia, whose temple, dating from the IXth century B.C., as rebuilt about 600 A.C. and again about 400 B.C. In Roman times such was the custom of visitors to witness the rites of the temple, which included the trials of endurance by the altar, that the sanctuary was finally enclosed in an amphitheatre to accommodate them, the temple facade forming a stage. Built into its substructure have been found many objects throwing light on the stages of the sanctuary, such as the remains of the statues of the boy-heroes or

Bomoniak (though no statues have survived) and fragments of terra-cotta and stone reliefs. Some of these are believed to represent the archaic temple, whose pediment would appear to have been occupied by figures of two crouching lions facing each other. Paper No. III, by Mr. F. W. Hasluck, on the "Latin Monuments of Chios," is a survey of the remains left by the Second Genoese occupation (1346-1566), during which Chios was governed by a Genoese mercantile company. These consist of the citadel and other portions of the fortifications of the city and various architectural fragments, principally sculptured doorways, generally "associated with the name and school of the Gaggini, a family of Lombard artists," who also worked in Genoa. Many of these, which are illustrated by photographs, are of great beauty. In addition are many tombs, retables, and inscription tablets.

The last article to which we shall call attention is that by Mr. A. M. Woodward on "Some New Fragments of Attic Building Records." Two of these form part of the *stèle* inscribed with the accounts of the Parthenon, and a third belongs to the Propylaea records. The former, as now reconstituted and taken in conjunction with a newly-interpreted papyrus record at Geneva, throws light on certain portions of the career of Pheidias. It is now clear that "the pediment sculptures were being made in the twelfth year of the work on the Parthenon, namely, 436-5 B.C." This was two years after the charge had been brought against Pheidias for misappropriating the ivory (not the gold) of the great statue of Athena, at a period when in all probability he was living at Olympia and working on the statue of Zeus. It would thus appear that the pediment sculptures, though doubtless from his design, were carried out in large measure by other sculptors in his absence, and little more than nominally under his supervision. It will be remembered that the Eleans paid his bail to secure the continuation of his services, and it is not likely that he could have taken his long journey backwards and forwards very frequently, or that he could have carried to be much in Athens in an atmosphere of suspicion and unpopularity during the years preceding the trial which resulted in his condemnation in 432. For fuller information on these and other topics we refer our readers to the annuals themselves.

THE SOCIETY OF ARCHITECTS: PRESIDENTIAL ADDRESS.

THE opening meeting of the Society of Architects for Session 1911-12 was held on Thursday, November 16, at No. 28, Bedford-square, W.C., when the President, Mr. Geo. E. Bond, J.P., delivered an address, in the course of which he said:—

"It is with great diffidence that I appear before you for the fourth consecutive year as your President, and I feel that some explanation may be desirable in case there are any members who are not acquainted with the reasons which led to my again occupying this position.

The negotiations between the representatives of the Society and the Royal Institute (in which I have taken a prominent part) being still incomplete, I felt it would be unfair to my colleagues on the Council to desert them at this moment, though I assure you that nothing but this fact would have induced me to have accepted renomination, and I am aware that the circumstances to which I have referred are the principal reasons which influenced the Council in renominating me and you in re-electing me.

At present only the general principles of a Registration Bill have been considered and agreed between the representatives of the Society and the Royal Institute, and much arduous labour and thought will be entailed before its details are ready for presentation, but if the members of the Joint Committee to whom the duty of drafting the Bill has been delegated can be fully assured of the sympathetic and reasonable support of the members of their respective general bodies, they will be encouraged to proceed and to devote their best energies to the drafting of such a measure as will, when completed, satisfy a very large majority of the profession.

In regard to the effect which the negotiations with the Royal Institute during the past twelve months have had upon the Society, you will already have gathered from the Council's

Annual Report that, notwithstanding the difficulties of our position, due to the unfortunate delay in the completion of these negotiations, the progress and development of the Society has been phenomenal, and but for the fact that we considered ourselves in honour bound to observe the spirit of the agreement tentatively entered into between the Councils of the Society and the Royal Institute (which at the time we anticipated would be at once concluded) and which compelled us to close the list of applications for membership, many more members would have been added to the Society.

I ought in fairness to say that the Council of the Royal Institute were not intentionally responsible for the delay referred to. You will remember that the negotiations culminated in the terms of an agreement being approved by the Council and general body of members of the Royal Institute, which agreement it was arranged should be executed by the Presidents on behalf of their respective bodies, and only at the last moment was it found by the Royal Institute that under their Charter the Council had no power to enter into such an agreement.

The only way that the Royal Institute could get over the difficulty was by drafting a Supplemental Charter which would give the Council the power to enter into this agreement.

It is anticipated that this proposed Supplemental Charter and the new by-laws will shortly be submitted for the approval of the general body of the Royal Institute, who, having already endorsed the principles involved, will, it may be hoped, feel bound to facilitate to the utmost of their power a settlement on the lines of the agreement previously referred to. Subject to the approval of the Royal Institute and ratification by the Privy Council, the whole matter will be submitted in detail to the members of the Society, in which case I feel convinced that they will in the same spirit recognise the wisdom we gave it on a previous occasion.

The first effect, therefore, of a Registration Bill will be to prevent any further addition of the unqualified to the ranks of those already practising, and the latter will by the natural process of elimination gradually die out, and this will necessarily be a matter of time.

The second effect will be that none but those who have been properly educated and who possess the necessary qualifications and are able to prove them will be admitted to practice, and as this is a matter which will affect the younger generation of architects it is obviously chiefly a question for them.

It is therefore pertinent to inquire whether they desire Registration by Act of Parliament. A plebiscite instituted by this Society and by the *Builder* have proved that eight out of nine members of the architectural profession desire Registration, and it is fair to assume that very few young men voted with the minority, and that of these there were none who had spent years of arduous study and preparation for passing qualifying examinations; for these, speaking generally, are the chief sufferers under the present system, or rather want of system. There are many young men on whose education and architectural training considerable sums have been spent, and who possess every qualification to practise architecture, who are obliged to remain in the position of assistants at about the average wage of a bricklayer, or who are even unable to obtain regular employment simply because the profession is overcrowded and there is consequently keenness of competition, so that the remuneration of the competent is kept down by the competition of the incompetent.

You may further have observed that the more incompetent a young man may be the more likely he is to commence practice for himself at the earliest possible moment.

If he has been found worthless by his principal during the period of his apprenticeship, the result is that he is advised to try a change immediately the time expires, and if other architects find him equally incompetent as a junior assistant, his only course is to open an office of his own. It then frequently happens that some indiscriminating member of the general public (who has no conception of the duties of an architect), actuated by a desire to do the young fellow a good turn, or more probably because he hopes to get his work done for a small fee, gives him some small commission, and, generally speaking, the completed work is so unsatisfactory that the client resolves never again to trust a young architect, and his reasons are made known very freely to his friends and neighbours. The

competent therefore suffer with the incompetent, and the small commission which the qualified young architect would like to have an opportunity of carrying out, and which he could do in a manner calculated to secure himself, and more important commissions, is withheld, and probably given to a builder's clerk or foreman, who, although he may not have any knowledge of art or even draughtsmanship, will generally give his client what he expects at a reasonable price. It sometimes happens, however, that these incompetent young men have wealthy connexions, or it may even be that their incompetence is the direct result of the knowledge of the fact that they will not be entirely dependent on their work for a livelihood, which knowledge makes them careless and negligent in their student days. I know instances where such young men, having been given good opportunities, have, with the aid of "ghosts," whose services they could afford to pay for, further assisted by good builders whose general foreman has been subsidised, turned out creditable work which has earned for them fair reputations, and they are now able to employ qualified assistants who are practically responsible for every detail of the practice, except when it becomes necessary to exhibit a figure-head, and they will no doubt continue on these lines for years, securing remuneration which rightly belongs to better men. I have two such cases in my mind at the present moment.

The presence of such persons in the acknowledged ranks of the profession is a grave injustice to the earnest and thoughtful young architect who has devoted much time in acquiring a thorough knowledge of every branch of his profession.

There are probably some thousands of young men in the United Kingdom serving their articles at the present time not an eighth of whom will ever attempt to pass any qualifying examination, and of whom a large proportion will go to swell the ranks of the incompetent, and thus depreciate to a great extent the general standard of ability and discredit the profession generally in the eyes of the public.

A preliminary entrance examination would reduce this number by at least one-half, while another fourth would be eliminated by an intermediate examination, and I am confident that every young man who has, after years of study, proved his efficiency by successfully passing a stiff qualifying examination must feel that the time has arrived when his competitors must be compelled to submit themselves to a similar test before being allowed to practice.

My personal observations and experience have shown me that the overcrowding of the profession and the unfair competition to which qualified men are forced to submit is the direct result of the large influx of incapable and incompetent persons into the ranks of the profession through the ordinary portals of pupillage, rather than the presence of those other undesirable who combine the practice of architecture with some other callings. If they are dependent on architecture for their livelihood and are without means or influence, their only chance of securing even that class of work which does not call for either great skill or artistic merit is to offer inducements by way of reduced fees, by this means obtain employment, and frequently to compensate themselves for this they will further stoop to the acceptance of illicit commissions.

To sum up, I would point out that it is the fully-qualified young men commencing practice who have to bear the brunt of unfair competition; therefore it is obvious, for reasons already stated, that it is presumably the young men who will specially desire to support the Registration policy which, if successfully carried through, will check such competition, and at the same time raise the status and general standard of practice in the profession.

This will be effected by the institution of examinations so graded as to first of all test a candidate's general knowledge and aptitude for acquiring 'professional' qualifications, followed by a further examination, by which means the unfit would be eliminated, leaving only the capable, to hope that, by the exercise of their talents, combined with strenuous and persistent study, they may pass the final test and thus qualify themselves for practice. Such examinations will not merely shut out the incapable in the early stages of their attempts in finding a career, but the knowledge that such examinations have to be passed would have the further effect of compelling the idle and careless but

talented young men to diligently apply themselves in their early days to the task of making themselves proficient, and would encourage all those qualities at that time in their lives which would tend to the ultimate benefit of themselves and their clients.

Assuming, therefore, that the young men are convinced that the Registration policy is a really practical attempt to solve their difficulties, and that its success is extremely desirable, I venture to point out that the only possible chance of carrying it through will be by earnestly supporting the combined Registration Sub-Committee and approving the agreement to be entered into between the Society and the Royal Institute.

There is another point to which little reference has been made, and one to which all our leaders attach even greater importance than to that of Registration, viz. that the consummation of the suggested arrangements will be the first real step in the process of attaining complete unity in the profession. The well-being of a great profession cannot be considered merely as a question of to-day, or to-morrow, or even ten years hence; there is a long future before it, and it is with this thought ever in our minds that legislation is proposed. Looking ahead, your leaders see a vista of long years of useful work, progress, and development, under the banner of one great institution, including within its ranks all *bona-fide* architects in the United Kingdom, strong enough to legislate within itself for the ultimate benefit of its members, and with sufficient power to compel their obedience to its moral edicts and code of professional honour, and by these means be able to enforce its reasonable regulations upon those outside, with regard to competition conditions and other matters affecting the honour and interests of the profession. Your present leaders are but laying the foundations upon which their successors (that is to say, the more able, earnest, and thoughtful of the young men of to-day) will raise and maintain the superstructure.

Is the attainment of such an ideal worth a little present self-sacrifice? I simply ask the question, hoping it will be well considered by all before a definite opinion is expressed.

The meeting was preceded by the annual meeting of the students for the election of the Committee and officers for the year. The Chairman of the students' section, Mr. H. V. Milnes Emerson, A.R.I.B.A., presided at the students' meeting, and was re-elected, as were also the members of the Committee. The President of the Society, Mr. G. E. Bond, J.P., then took the chair, and the minutes of the previous meeting having been confirmed, the proceedings opened with the nomination of twenty-six candidates for membership and five for the register of students. The ballot for new members and students resulted in the election of twenty-nine members and nineteen students. The President then handed to Mr. J. R. Leathart, the winner of the Society's Travelling Studentship, 1911, the silver medal and a cheque for 10*l.*, the latter being the balance of the award of 25*l.* The Hon. Auditor, Mr. Ellis Marsland, presented the Auditor's Report and balance-sheet for the year ended October 31, 1911, and stated that there was an increase in the revenue over last year of 666*l.*, due principally to the increase in the membership, the Membership Examination candidates, and on the revenue from publications.

The general expenses had naturally increased somewhat owing to the maintenance of the establishment and new premises, but there was nothing to call for particular comment in regard to the expenditure, and the net result was a surplus for the year of 626*l.*, which was a record for any year.

The total surplus of assets over liabilities was 2,626*l.*, and the loan from the bank had been reduced during the last fortnight from 1,500*l.* to 1,100*l.*

In comparing one year with another they had to take into account the varying character of the work which the Council was called upon to undertake, and it was satisfactory to find that the first year of the Society in its new home had been the most successful of its existence, and the action of the Council in thus providing for the needs of the Society in the way of accommodation had been justified.

Mr. Marsland proceeded to refer to the progress of the Society during the past thirteen years as shown by a chart which had been prepared by the Secretary. This showed that the annual income had risen during that period

from 710*l.* 10*s.* to 3,222*l.*, the subscriptions from 359*l.* to 1,896*l.*, the entrance fees from 8*l.* to 285*l.*, and the membership from 530*l.* to 1,076*l.*

The Auditor's Report and balance-sheet having been unanimously adopted, the President addressed the members.

THE INSTITUTE OF SANITARY ENGINEERS ANNUAL DINNER.

THE annual dinner of the Institute of Sanitary Engineers was held on the 15th inst. at the Holborn Restaurant, W.C., when the President, Mr. A. J. Martin, M.Inst.C., occupied the chair, supported by Sir J. McCall (Agent-General for Tasmania), Professor Bostock Hill (President Society of Medical Officers of Health), Mr. H. P. Boulnois (Chairman of Council Royal Sanitary Institute), Professor G. Coker, M.A., Mr. W. Whitaker, Mr. A. D. Grotorex (President Institution Municipal and County Engineers), Mr. H. Vakilam, Lieut.-Colonel Melville, Mr. Cuthbert Brown, Mr. E. T. Hall, Dr. Wynter Blyth, Mayor of Richmond, Professor H. Adams, F. E. Fremantle, Dr. J. H. Crocker, Mr. P. Hasluck (Secretary), and others, including ladies.

The loyal toasts having been proposed by the President and honoured,

Mr. H. Percy Boulnois proposed "Our Public Health Authorities coupled with the names of Alderman R. Simpson, J.P., Mayor of Richmond, and Professor Bostock Hill. Mr. Boulnois said there were sixty-two county councils in England and Wales, twenty-eight metropolitan boroughs, 1,155 town councils, and urban district councils, 657 rural district councils, and 74 parish councils, and these bodies with their members and officials were concerned with the well-being of the peoples. As he knew a good deal about Liverpool, he might refer to the large slum areas there, but he could add that the Liverpool Corporation had set to work to do away with them. At a meeting of the Liverpool City Council the question of slum areas came up. An Irish member spoke warmly against a proposed demolition, and concluded:—"Every house you pull down this magnificent city leaves a hole in it which is a standing monument of disgrace to it."

Alderman Simpson said that local authorities had been interested in good deal with legislation in recent years, and under the Housing Acts a good deal had been done in Richmond. Under the Town Planning Act, Richmond had come to a very desirable agreement with their friends across the river to attempt to preserve the amenities of the Thames flowing through Richmond and Twickenham for they wished to preserve the amenities of the district.

Professor Bostock Hill alluded to the youth of the science of health which had been born since 1875, but which had developed so quickly. The great work of sanitary engineers was to educate the public in what could be done if it took matters into their own hands. The public should become educated in the possibilities of hygiene, and he thought that was an important work, and that no very big advance was possible until the public were quite sure what hygiene could do for them. He looked forward to the formation of another health authority, i.e., the health authority well-informed public opinion.

The Hon. Sir John McCall (Agent-General for Tasmania), in proposing a toast of the evening, i.e., "The Institute of Sanitary Engineers," said he noticed that they were established in 1905, and had been doing good work in educating the people responsible for the public health of the country. He thought that the members of the Institute should be their qualifications recognised by the people of the country. All sorts of people described themselves as sanitary engineers, and a good many "professional" people called themselves what they liked here. While in Tasmania they protected the public by Registration, here it was possible for a man who did not know one end of the tape from the other to call himself a sanitary engineer because he dealt in property. He suggested that men should not be allowed to represent themselves as sanitary engineers unless they possessed

qualification. The public had as much a right to protection in the case of a man who had himself a sanitary engineer as it had when called himself a lawyer or a doctor.

President, Mr. J. McCall as to the necessity of protection people who represented themselves to be they were not. He was glad to say that statute was succeeding, and a very good had been made again this session. It was said that there were too many as, and he agreed, but there was a great work for the Institute of Sanitary Engineers to do. A society like theirs had functions to fulfil; it had to consider the interests of its members; it sought to advance technical knowledge and to increase the number of its members to the country at large; above all, it was a society like this which school of citizenship in which they learnt practised the duties of loyalty, of hard discipline, and self-repression, by which our country could retain her place in the front of the nations.

or E. G. Coker, M.A., D.Sc., proposed the toast of "Kindred Institutions." Mr. W. Whitaker, B.A., F.R.S., and D. Creatore, President of the Institution of Municipal and County Engineers, responding to the toast was: "The Visitors," proposed by H. T. Wakelam, Past-President, and welcomed by Lieut.-Colonel Melville, Mr. T. Brown, and Mr. Edwin T. Hall; and "Press," proposed by Dr. A. Wynter

GAZINES AND REVIEWS.

Art Journal is a larger number than some of the articles are of special interest to architects. For instance, the old Drayton, Northants, the fine gates which we illustrated last week (p. 577); the decoration of the dining-room probably date about 1770. The work is an example of the late XVIIIth-century style and similar in general style to that of Adam, but as yet untouched by the mannerism. The ornament on both the ceiling and the Drayton dining-room is leafy, and has a happy freedom which does not get in Adam's rearrangement of decorative motifs, graceful as these are. The ceiling has the central fan of the type used by Adam, but here again the detail is formal." Another article, fully illustrated, refers to De Voort, erected by III. and presented to his favourite, Joost Van Keppel, the first Earl of Drogheda. The planning and decorating of the house of De Voort was the means of showing King William's taste for architecture, gardening. At Dieren and at the time he had already shown examples of his while the alterations to Kensington Palace and the vast work at Hampton Court, he began soon after his arrival, and what he could do in England. He came from Paris the services of the highly capable designer, Daniel Marot, who had been associated with various decorators for Louis XIV., and who was the architect Jean Marot, one of the great decorators for the completion of the Louvre. Marot accompanied the King to England, but appears to have acted more as an architect than as an architect. An article signed by Mr. Guy Francis concludes the number. The subject is the new London Museum in Kensington Palace, which will be opened soon. "In the museum devoted to costumes efforts will be made to give life to the various acquisitions. Just as in the Wallace collection, the whole suits of armour for man and woman are shown in realistic poses with every detail in proper place, so at the London Museum figures will be dressed and placed in the vitrines equipped to receive them in some cases with furniture, fittings, and domestic appliances of the day. Scenes of daily life will be reconstructed as truthfully as possible, and the antique will be suggested." Editorial in the *Burlington Magazine* orders to prevent the loss to the nation of masterpieces now in the hands of the Government should

arrange for a reversionary interest in these at an agreed price, the scheme being that the owners should retain and transmit to their heirs, but sell only to the nation. The Salting Collection has come in for considerable attention lately, but Mr. Mitchell's article on the Limoges enamels is of exceptional value, and most excellently illustrated. Elsewhere, Mr. D. S. MacColl deals with the exhibits now arranged in the Stevens Room at the Tate Gallery.

In the *National Review* Sir Arthur Griffith-Boscawen brings forward the question of national aid for housing reform. He claims that the influence of the slum on health and character brings the matter within the scope of Government control, and suggests that it should form a part of the programme of the Unionist Party, basing this contention on the part they have played in the past in this movement. Apart from the political aspect the article is full of interest, as will be seen from the few paragraphs we quote hereunder:—

"Of course attempts to get rid of the slums have been made in most towns in the last forty years, and much excellent housing reform has been carried out by enlightened local authorities and landowners. Here and there we see bordering on existing slums huge barracks, 'block dwellings,' as they are called, not ideal residences for the poor by any means, for there is nowhere for the little ones to run about and play, but at least they are clean and airy, with good sanitation and consequently a low death-rate, and these mark where even more pestiferous rookeries than any we have now existed a few years ago. But when all is said we have acres and acres of horrible slum property in most of our towns, the like of which exists nowhere else in the world that I know of."

Under the Act of 1890 clearance schemes of slum areas or groups of houses so structurally deficient as to require complete replanning, which formed the subject-matter of Cross's Act, are dealt with under Part I., the power to compel owners to repair individual houses or to close and demolish them is dealt with under Part II., while Part III. enables local authorities to provide housing accommodation voluntarily (i.e., not in order to fulfil a rehousing obligation) whenever they are of opinion that there is a dearth of such accommodation in the district.

The London County Council and other local authorities have been deterred from an extensive use of their powers under Part I. by the excessive cost. Liverpool, indeed, is an exception; thanks to the progressive policy of the City Council, a number of Part I. schemes have been successfully carried out in recent years, and the work is still going on, but the authorities admit that but for the cost much more might have been accomplished, and there is much yet to be done. The Birmingham authorities, on the other hand, have preferred to rely chiefly on their powers under Part II., compelling the owners of individual houses to put them in order, and they have been fairly successful in their efforts. Similar action is now being taken extensively by some of the metropolitan boroughs in London, but much more might be done by them. I do not myself see, however, how the procedure under Part II. makes it possible to deal with large slum areas, where several acres must be cleared and the whole requires replanning, though it is certainly a useful and inexpensive plan for dealing with single houses, or even a single row or court. In any case the process must be a very slow one, and in the meantime our slums go festering on, a danger to the whole community.

The first thing to do, in my judgment, is to recognise that the decent housing of the people is a national question, which can no longer be left exclusively to local authorities and private enterprise. Indeed, to unregulated private enterprise in the past we owe the slums. We must go boldly to the State and demand State assistance of a very material character. By the recent Development Act large sums are contributed annually for various objects of public utility, such as afforestation and the straightening out of main roads. These objects are all good in themselves, but how much more important it is to get rid of these horrible courts and alleys and houses unfit for human beings than to improve roads chiefly for the benefit of motorists! We ought to ask the Government for at least one million a year for housing reform, and no money could be better spent.

At the same time various amendments should be made in the existing Acts to remedy ascertained defects. It cannot be denied that notwithstanding the drastic provisions of the Act of 1890, the slum-owner gets a rule far too much for his property when acquired compulsorily by a local authority for the purpose

of an improvement scheme. The valuation is generally based on rental, and the rents are swollen by overcharging; thus the slum-owner is rewarded for doing that which is most detrimental to the community. Nothing, indeed, pays so well as to own a slum. The owner gets abnormally high rents so long as it exists, and he does as little in the way of repairs as possible in the hope that before long his property will be condemned as an "insanitary area" or part of one, and that then a beneficent local authority will come along and buy him out at a high figure."

The *Studio* has a copiously illustrated article on the Austrian Schools for Weaving, with a very full description of the methods of teaching decorative design in relation to its employment in this craft. The article on Japanese screens gives some very fine examples of well-balanced design.

In the *Nineteenth Century* Mr. L. A. Atherley Jones, in an article entitled "A Servile War," gives a brief history of the conflict between capital and labour, and considers some of the salient points in the problem at present confronting us.

The Rothschild Tenement Houses for the working classes of Paris, described in the current issue of the *Englishwoman*, show to considerable advantage in comparison with those erected under the Peabody and other similar bequests in this country. Not only are the actual tenements thoroughly up to date in their fittings and appointments, but the whole organisation is carried to a pitch to which we are unaccustomed. In the well-appointed washhouses washing is undertaken for tenants at a very low rate, in the extensive kitchen on the ground floor both tenants and outside customers can purchase hot meals, and the bath establishment provides showers as a penny and baths at twopenny-halfpenny. There are rooms for medical consultation, where a doctor and two nurses attend twice a week, advice costing the modest sum of five pence; the nurses live in the building, and are at the beck and call of residents at all hours; as may be expected, there is a crèche where the children are carefully tended during the absence of their parents, the attention including proper feeding and amusements and occupations suited to their years. Children attending school have at their disposal classrooms, with teachers in charge at certain hours, for preparation work, and short popular lectures are given when work is finished. Cooking and other domestic subjects are taught, and electric sewing machines help the women and girls with their work. The charge for all these aids is but 2s. a month for one member of a family, and half this sum for each additional one. This list by no means exhausts the various activities centred in the Rothschild building, which, it is estimated, will return 3½ per cent. on its cost. The income will be funded by the trustees for the provision of similar accommodation and for other enterprises aiming at the improvement of the material condition of the working classes and their families.

In *Harper's Magazine* Mr. Richard le Gallienne discourses on the old colonial village of Kingston-on-the-Hudson. In his favourite vein of happy paradox he claims that mere antiquity without the graces of architecture and historical associations impresses him the more deeply. Castles and cathedrals, he avers, leave him cold, while a simple, unpretentious village, living its old-world life, rouses a keen emotion in his heart.

METROPOLITAN ASYLUMS BOARD.

At the fortnightly sitting of the Metropolitan Asylums Board on Saturday, the following matters were dealt with:—
Receiving-rooms for Measles.—The Hospital Committee recommended that arrangements be made to provide receiving-room accommodation for measles at the Western, North-Eastern, Brook, and Grove Hospitals. The structural alterations required are estimated to cost about 700l.—Agreed.
Culterham Asylum.—A report was submitted on the arrangements for sewage disposal at this Asylum, and it was stated that as the result of negotiations the Caterham Urban District Council had agreed to lay a new drain and make connections to take the sewage, on the condition that the Board contribute 900l. towards the cost. It was resolved to ask the Local Government Board to sanction the proposal.

LEGAL COLUMN.

Private Street Works.

An important point to householders has been raised in the case of *Newquay Urban Council v. Rickard and Another* (current "Law Reports"). Under sect. 10 of the Private Street Works Act, 1902, in making a provisional apportionment of the expenses, power is given to the urban authority to include "any premises which do not front, adjoin, or abut on the street or part of a street, but access to which is obtained from the street through a court or passage, or otherwise, and which, in their opinion, will be benefited by the works." In the case in question an apportionment had been made against the owners of certain building lands. There was access to these lands from the streets, which were to be repaired, over two partly-made roads belonging to the owners; but in each case there were besides other means of access to the lands. The owners objected to the provisional apportionments, and the Justices held that the lands in question had not a means of access "through a court, passage, or otherwise."

The Divisional Court sent the case back to the Justices, as the case stated by them gave no indication of the grounds upon which they based their finding. The Court intimated that if the Justices considered that no means of access of greater width than that of a court or passage was within the section, that view would be erroneous, whereas, on the other hand, access by a public street would not be included in the terms "court or passage." If the roads were public streets in process of development, then the apportionment would be wrong. The decision lays it down that the interposition of a public street between the street being repaired and the premises to which access is obtained prevents the section applying; the access must be from the street, not down another street.

Water for Domestic Purposes.

In a recent case before a Judge of the Chancery Division, *Bristol Guardians v. Bristol Waterworks Company*, the Guardians were claiming to have the water supplied to a workhouse at a rent calculated on the annual value of the premises, instead of as heretofore by meter. The question turned on sect. 68 of the Bristol Waterworks Act, 1862, which provides that "the company shall, at the request of the owner or occupier, furnish to every occupier of a private dwelling-house a sufficient supply of water for the domestic use of every such occupier at annual rents or prices." The Court held that it was impossible that an institution of such a character should be deemed to be "a private dwelling-house" within the meaning of this section, and that the claim of the Guardians failed.

In some cases workhouses, and schools in connexion with such institutions, have been held entitled to the supply of water for certain purposes under "domestic purposes" conditions—see, for instance, in *South-West Suburban Water Company v. St. Marylebone Union* (the *Builder*, June 18, 1904), and *Chester Waterworks Company v. Guardians of Chester Union* (the *Builder*, February 15, 1908); but these decisions have turned upon the words of different Acts of Parliament. The Waterworks Clauses Acts, under which the first case was decided, and the Chester Waterworks Act, which governed the second case, only contain the expression "dwelling-house."

Even if the building itself is not strictly defined, other considerations often arise as to the character of the use the water is put to, and also the purposes for which the building is used. Thus in the *Chester* case some members of the Court of Appeal questioned whether the Guardians could be said to run such institutions for "business purposes," which in the Act were differentiated from "domestic purposes," and a supply on a double basis was allowed in that case.

It is such considerations and the different terms of the various Acts of Parliament which make water supply, even when intermittent itself, a constant source of litigation.

LAW REPORT.

KING'S BENCH DIVISION—DIVISIONAL COURT.
(Before Mr. Justice HAMILTON and
Mr. Justice BANKES.)

Builder's Claim for Compensation:
An Unfortunate Speculation.

On Friday, the 17th inst., the Court heard arguments in the case of *Wheeler v. Stratton*, which came before their Lordships on the appeal of plaintiff from a decision of Mr. Muir Mackenzie, the Official Referee.

The plaintiff was Mr. John James Wheeler, a builder, who resides at Woodford, Essex, who claimed from the defendant Mr. Richard Stratton, of Duffryn, Newport (Mon.), the sum of 800*l.* for work done and materials supplied, damages, etc., in connexion with a building partly completed.

It appeared that the facts found by the Official Referee were as follows:—

Mr. Wheeler was a builder, and the defendant was the owner of the site of a warehouse at Hammersmith. Plaintiff claimed compensation for work done and materials supplied and put on the defendant's land. Mr. Worley, an architect, originated the scheme by which the work was to be carried out, and, briefly stated, it was that Mr. Worley's son was to obtain the site, and a builder was to erect a building according to approved plans, and when complete, or at some particular stage, was to be a long lease at 500*l.* a year and the building was to be sub-let to tenants at rents to produce 500*l.* a year. The original scheme was for a warehouse, and on part of the ground floor a biograph theatre. Under that scheme the warehouse was to be let at the rent of 400*l.*, and the biograph theatre at 100*l.* On April 10, 1910, at an interview, Mr. Worley mentioned the matter to plaintiff as a matter to take upon speculation, and suggested that he should build the warehouse and biograph theatre. Plaintiff was shown the plans, as well as the drawings for steel work prepared by Messrs. Dwyer, Bear, Perks, & Co., and it was also stated that the estimated cost of the steel work was 415*l.* No specification was handed to plaintiff, but he was invited to start the work at once. It was part of the scheme that he should obtain an advance from a moneylender up to 3,000*l.*, and the amount which the scheme was estimated to cost was 4,000*l.* Plaintiff took away the plans and eventually agreed to enter into the speculation. A draft of the building agreement was prepared, in which the parties were to be Mr. Worley, Mr. Storey (the intending lessee of the warehouse), and the plaintiff, and the draft stipulated that the building was to be erected according to plans and specifications approved by the freeholder and intending tenant. In June the project of having a biograph theatre was abandoned, and the further plans necessitated an increase of steelwork. The weight that the steelwork would have to bear was stipulated in the draft agreement as being 2 cwt. to the square foot. Now Mr. Stewart, an architect acting in Mr. Storey's interests, insisted that that weight should be altered to 2½ cwt. In July Mr. Stratton took the place of Mr. Worley as freeholder. On July 28 plaintiff arranged to begin building, and that was before he had seen the specification and signed the agreement which defined the rights of the parties. He commenced the work on August 2, and three days later the Surveyor to the London County Council received notice from plaintiff. He went to the place and set out the building line. On August 17 the plaintiff mentioned to Mr. Stewart (who was acting for Mr. Storey) that he had no specification, and that was sent him on August 27. Then plaintiff noticed that it contained matters which were different from the plans and drawings originally shown to him. In particular, the weight of the ironwork was increased. The plaintiff at once stated that he would have to put in more steelwork if he complied with it, and later Mr. Stewart came on the scene, and said he would not allow the use of the steelwork procured by plaintiff according to the original plans. Plaintiff at once communicated with Mr. Worley and said he would have to stop work until the matter was settled. On October 1 Mr. Worley wrote to plaintiff and said if he would retire from the job he would do his best to obtain payment to him for the work he had completed. On October 9 the parties saw Mr. Worley, and said that he would retire from the job, and Mr. Worley promised in a letter to have the job measured up. Plaintiff did no more work, and defendant, by his agents, proceeded to negotiate with some other builder to take over the matter. Later defendant's solicitors wrote to plaintiff repudiating any liability, but saying that they were willing for a builder to take over the plaintiff's work. A new builder was obtained, but plaintiff had not been paid, and he claimed the value of his work, etc.

The Official Referee priced the work for the purpose of the case at 660*l.* He found that there was no specification produced at the first interview between plaintiff and Mr. Worley, and he also found that whatever specification Mr. Worley had, it contained a clause to the effect that the steelwork should bear 2 cwt. to the square foot. The other half, he decided, was put in afterwards.

He could see no breach of agreement, whether equitable or legal, which defendant had committed which could give the plaintiff

any right to pecuniary compensation. This was not, he thought, any unequivocal promise by Mr. Worley that plaintiff should be paid for his work, but all that there was was that Mr. Worley would do his best to the plaintiff and the succeeding builder. He, therefore, confessed, with no limitations, that he would have to direct plaintiff to be entered for the defendant.

He could not but regard it as a somewhat deplorable state of things, he said, that the result of the law was that the defendant, the benefit of the whole of plaintiff's work, and did not pay a single penny for it, and had, however, to decide according to the law, and briefly his decision was that, although found for plaintiff on most of the facts, did not think plaintiff had established in a right to recover pecuniary compensation from defendant.

Mr. Meyer and Mr. Blacklock were for appellant, while Mr. G. A. Scott and Mr. W. represented the defendant.

After the Court had heard Mr. Meyer some length, Mr. Scott contended that original speculation in this case was between the builder and Mr. Worley, and was not the present defendant came into the matter. Therefore, plaintiff's claim should have been against Mr. Worley. Could it be said that even if the defendant did make a promise to get what he could from the new builder, and put himself under legal obligation to the money in any case?

Delivering his judgment, Mr. Justice Hamilton said Mr. Stratton came into this case because he acquired the freehold after negotiations had been commenced. They referred to the evidence and correspondence at some length, and in their opinion the evidence before the Official Referee supported the conclusions to which he had arrived, was, therefore, only necessary to go briefly into the story of the proceedings. It appeared that at the first interview which Mr. Worley had with the plaintiff the latter was of the opinion that it would be worth his while to build on this site under terms which could be arranged with the freeholder, and the plaintiff was subsequently obtain a lease and then to go to sub-lease to a party at a rent which would show a substantial profit. From the month of April to July, 1910, no work was done on site, but steps were being taken to settle building agreement. It was quite plain there was no ground for the suggestion of any kind of completed contract was entered into during that time. It was clear that the contract was under consideration, and a certain amount of discussion was going on as to details and plans. Defendant came into the matter on July 16, he taking the place of the intended freeholder, and after that Mr. Worley was for him. On July 27 the draft agreement approved of by plaintiff and the other party and at that time it was contemplated that it would be a specification. On July 28 it suggested that plaintiff should commence building, and he, in fact, entered on August 2, and thereafter proceeded with his execution and brickwork. For some considerable time was evident that the signature to the building contract on plaintiff's part was contemplated and down to the middle of August he was engaged in building under the direction of Worley. Then the architect for the proposed tenant came upon the scene and raised the question of the strength of the steelwork which, he said, should be greater, seeing only one building was to stand on the instead of two. Thereupon, on September plaintiff intimated that he would have to stop the work because he could not comply with new demands. He did not, however, stop but built the walls, until the building ready for the steelwork. Then he stopped. The parties met and discussed the situation and plaintiff determined to go no further with the work. It appeared to be clear that plaintiff had been doing work on that which he knew belonged to somebody else, the only reason why he did not execute agreement and carry out the work was the specification, which, in the nature of things, would be required, was being altered against his will, and his grievance was thus imposed a greater burden upon him. Inference which it seemed impossible to draw was that he did commence work for representation of anyone acting for Stratton, and that from any such representation it could be implied that defendant was to pay the plaintiff on quantum meruit. It was an unfortunate instance of a builder commencing work in the hope of securing adequate payment.

The next contention was that in the month of October a transaction took place by which the defendant was bound to pay the amount of an express promise by an agent of the defendant that if the plaintiff would stop work he would be paid for the work he had been measured up, and that the

d be obtained from the subsequent builder. letters which passed, however, amounted to more than this, that Mr. Worley excluded his willingness to do what he could do for somebody—possibly the substituted order—to make plaintiff an allowance for the which had been done. It seemed to his ship quite impossible to spell out the action as a promise by the defendant that the plaintiff should receive a reasonable or specific sum, and he saw no evidence at all to the effect that in making these expressions of will Mr. Worley was acting for Mr. ton in any way.

Meyer had tried to impress upon the that his client had been shabbily treated, that he should get his money from somebody. While the Court sympathised with him, could not unsettle settled law, and could disregard the rules which bound them, but they could not deal with the matter to redress the plaintiff's wrongs.

Justice Bankes concurred. It had, he said, been a very disastrous speculation for the plaintiff, and he had endeavoured to find some upon which he could come to the decision that the law allowed him to find in the plaintiff's favour, but he had not succeeded. was bound to affirm the decision of the first Referee.

The appeal was accordingly dismissed with

LONDON COUNCILS.

Westminster.—The Sub-Committee appointed by the Public Health Committee to prepare a plan for the improvement of the Malthouse has submitted a scheme for carrying out the work, the cost of which, it is estimated, will be £12,500. The scheme includes the repair of the Malthouse, the repaving of the Malthouse, and the making of new roads. The Committee put forward a recommendation that this scheme should be approved and adopted, and that the Surveyor be instructed to prepare the necessary detail maps, plans, and estimates. At the meeting of the Council, the recommendations were deferred, and it was pointed out that if the Local Government Board did not approve the scheme, all expense and trouble involved in the preparation of the plans, etc., would be thrown away. It was further decided at the meeting, on the motion of Councillor Waterman, as seconded by Council Kitley, "That a Committee be appointed to consider the question of the provision of a swimming-bath and of a school, to bring up a report as to the cost and to suggest a suitable site for the same." The offer of the Linmer Asphaltic Company, Ltd., has been accepted to lay 2 in. Lithomac on the roadway on the railway crossing and High-street, and to maintain same for five years at 40 per cent. per annum, and for a further period of three years at 40 per cent. per annum. An offer has also been accepted from Roomac, Ltd., to supply "Roomac" on the roadway between Richmond-road and the level crossing, to maintain same for five years at 15 per cent. per annum. A plan has been submitted for Mr. A. Harvey for seventeen houses on Rosslyn avenues.

Greenwich.—The carriageways of Lavender and Meyrick-road are to be repaired with macadam at estimated costs of £2,442 and £2,442, respectively. The footways of both sides of Winsham-grove are to be laid with the Council's artificial paving, the kerbs reset and channelling adjusted, at an estimated cost of £134. Electricity mains are to be extended at an estimated cost of £120. **Wandsworth.**—The portion of Rotherhithe by the Union Oil and Cake Mills is to be repaved at an estimated cost of £700, and the raising of the south path of the Newway. This will necessitate certain alterations to the entrances of houses owned by P.L.A., and this is to be done at a cost of £75.

St. George's.—A recommendation of the House-Committee to the effect that an architect be appointed for the purpose of preparing specifications, and estimates of cost for the proposed extension of the Board of Guardians. In connexion with this, was agreed on a motion from Mr. that the names of six competent men, residing within the County of Middlesex or the administrative County of London, should be named and submitted to the Board for selection.

St. George's.—The work of making up Spring-road is to be proceeded with. The Surveyor has been instructed to prepare plans, and make up Spring-road. Plans have been passed for Mr. G. Jaggard for four King George's-avenue and Chiltern-

avenue, also for Miss Lucy Kemp-Welch, for additions to the Working Men's Club, Rudolph-road.

Chelsea.—Application has been made by the New Patent "Mostpowerful" Motor Spirit Company, Ltd., to lay a 4-in. iron pipe under Cheyne-walk, in connexion with the company's proposal to acquire a block of land at the corner of Milman's-street and Cheyne-walk, for the purpose of manufacturing motor spirit. A reply is to be sent to the effect that the application would be favourably considered in the event of the company acquiring the land in question.

Croydon.—The Rural District Council has accepted the tender of Mr. E. Yewen, St. James's-road, Croydon, at 58s., for making up Hall-road, Watlington. Kerbing is to be laid on both sides of the road leading from Acro-lane to Wright's-row, and for a short length in front of the Duke's Head public-house, at an estimated cost of 50l.

Fulham.—A letter had been received from the London County Council stating that the Buildings Act Committee had considered the Borough Council's suggestion as to advisability of formulating a town-planning scheme in connexion with the development of the late Miss Sullivan's Estate, but that they would not recommend the County Council to take any action in the matter. In view of this, and a report with reference to the disposal of the estate at a recent auction, the Law Committee have instructed the Town Clerk to again approach the London County Council, suggesting the expediency of adopting a town-planning scheme on the portion of the estate now unused, and which would, in all probability, be used for building purposes. The Surveyor has been instructed to obtain and fix iron fences in South Park at an estimated cost of 130l.

Greenwich.—Portions of Westcombe-hill and Shooter's Hill-road are to be repaved with granite at estimated costs of 161l. and 120l. respectively. The margins of the roadway of Blackwall-lane and Tunnel-avenue, from Trafalgar-road to the tunnel entrance, are to be repaved with granite, except where wood paving is laid; with redressed second-hand granite setts. Plans have been passed for Messrs. J. Chesson & Sons for additions to the Greenwich Inland Linoleum Company's premises, Blackwall-lane.

Hackney.—The work of paving, etc., Holm-bury-view and a portion of Hewwood-mount is to be put in hand forthwith at estimated costs of 684l. and 332l. respectively. Electricity mains are to be extended at an estimated cost of 90l. Plans have been passed for additions to premises, Brunswick-place, Farleigh-road, West Hackney, for Messrs. J. Douglas Mathews & Son, on behalf of Messrs. H. E. Davenport, Ltd., also for a proposed frontage line of buildings, Leweston-place, Stamford Hill, for Edmondsons, Ltd.

Ham.—At the last meeting of the District Council it was decided to remove a few more masons if the services of additional tool-smiths could be obtained. Any blacksmith having previous experience of sharpening masons' tools may be placed in communication with prospective employers on application at the Labour Bureau. Work is also available for a monumental mason and lettercutter.

Plumbing.—Very quiet. Rainy weather causing leakages afforded a few men opportunities of employment, otherwise there was little work in progress.

Painting and Decorating.—Somewhat brighter, a number of small contracts being in course of execution, including the painting of the Drill Hall and Public Offices. Regular employment is, however, difficult to obtain even at low rates of wages.

Fibre-Plaster and Cement Working.—Dull, with no demand for labour.

Bricklaying.—Moderately busy. Opportunities of employment on good-class work appear to be increasing.

Joinery and Woodworking Trades.—Quiet. There appeared to be a slight decrease in the amount of work in progress, and several hands, as well as bench hands, were paid off. A few timber ships arriving caused the employment of many temporary labourers. Little is being done for the present in the box-making section, and some of the hands were working on short time. The demand for journeymen in the building trade showed a slight improvement.

Polytechnic School, Zurich.

The *Feuille Fédérale Suisse* of November 8 contains a decree providing a sum of 11,430,000 francs (488,600l.) for the purpose of enlarging the Federal Polytechnic School at Zurich.

Hospital, Lieben, Prague.

Plans have been submitted to the Prague city authorities for the erection of a hospital in Lieben. It will consist of sixteen sections, and will have accommodation for some 500 beds. The cost is estimated at 6,000,000 kronen (250,000l.).

granite setts, in lieu of wood-paving, as desired by the Borough Council. Plans, etc., are to be prepared for paving and forming Arran-road as a new street.

Maldens and Coombe.—The Chief Officer of the Fire Brigade has been instructed to consider the advisability or otherwise of providing a sub-fire-station for Coombe on the main London road.

Southwark.—Alterations to cost 75l. and renovations 506l. are to be carried out at the Central Library, and tenders are to be obtained for the work. It has been decided to offer no observations to a communication received from the London County Council asking whether the Borough Council approved or disapproved of a proposal by Messrs. H. Langston & Co., 1, 2, 3, and 30, The Exchange, Southwark-street, S.E., for additions to a warehouse in Bowling Green-lane.

Tottenham.—The Engineer has been instructed to carry out the work of reconstructing the culvert passing under Hermitage-road at an estimated cost of 400l. Tenders are to be invited for carrying out the work of constructing an underground conventional at Bruce-grove. The following plans have been passed:—Mr. Arthur Keen, factory, Tariff-road; Mr. J. S. Alder, Vicarage, St. Benet Fink, Walpole-road; Mr. J. H. B. Foss, additions to St. Ignatius School, St. Ann's-road; Mr. S. Clifford Tice, additions to Messrs. Gestetner's Cyclostyle Factory, Fawley-road.

FOREIGN AND COLONIAL.

The Labour Market, Cape Colony.

We take the following from the labour reports of the Inspector of White Labour, Transvaal, and the Government Labour Bureau, Cape Town, for the month of September, 1911.

Cape Town.—During the period August 1 to 31 twenty-three plans were submitted to the City Council, of which six were returned to the architects, one withdrawn, four remain under consideration, and twelve approved, the approximate cost of the proposed work being 21,575l.

Engineering.—The amount of work in hand varied very considerably at different factories and at various periods during the month, but on the whole there is little doubt that a considerable "set-back" was experienced, the only work of any importance in progress being in connexion with repairs to shipping. Only very few local contracts were in course of execution, and the direct consequence of this decrease of activity is that about thirty-five men have become unemployed.

Stone-dressing.—Very brisk. It is possible that work could be made available for a few more masons if the services of additional tool-smiths could be obtained. Any blacksmith having previous experience of sharpening masons' tools may be placed in communication with prospective employers on application at the Labour Bureau. Work is also available for a monumental mason and lettercutter.

Plumbing.—Very quiet. Rainy weather causing leakages afforded a few men opportunities of employment, otherwise there was little work in progress.

Painting and Decorating.—Somewhat brighter, a number of small contracts being in course of execution, including the painting of the Drill Hall and Public Offices. Regular employment is, however, difficult to obtain even at low rates of wages.

Fibre-Plaster and Cement Working.—Dull, with no demand for labour.

Bricklaying.—Moderately busy. Opportunities of employment on good-class work appear to be increasing.

Joinery and Woodworking Trades.—Quiet. There appeared to be a slight decrease in the amount of work in progress, and several hands, as well as bench hands, were paid off. A few timber ships arriving caused the employment of many temporary labourers. Little is being done for the present in the box-making section, and some of the hands were working on short time. The demand for journeymen in the building trade showed a slight improvement.

Polytechnic School, Zurich.

The *Feuille Fédérale Suisse* of November 8 contains a decree providing a sum of 11,430,000 francs (488,600l.) for the purpose of enlarging the Federal Polytechnic School at Zurich.

Hospital, Lieben, Prague.

Plans have been submitted to the Prague city authorities for the erection of a hospital in Lieben. It will consist of sixteen sections, and will have accommodation for some 500 beds. The cost is estimated at 6,000,000 kronen (250,000l.).

BUILDING WOOD.		At per standard.	
Deals: best 3 in. by 11 in. and 4 in.	£ s. d.	£ s. d.	
by 9 in. and 11 in.....	14 0 0	15 10	
Deals: best 3 by 9.....	13 10 0	14 10	

BUILDING—continued.

date given at the commencement of each
graph is the latest date when the tender, or the
of those willing to submit tenders, may be

NOVEMBER 8.—**Leicester.**—**HALL.**—For the
tion of a public hall, proposed to be erected
and adjoining Victoria Park and Regent
Specifications, quantities, and form of
from the Borough Treasurer, Town Hall,
point of 21. 2s. Plans seen at the office of
Messrs. Messrs. Stockdale Harrison &
7, St. Martins East, Leicester.

NOVEMBER 9.—**Essex.**—**ADDITIONS.**—For altera-
tions and additions to South Ockendon Schools,
sect. Mr. Frank Whitmore, 73, Duke-street,
Essex. Deposit of 21. 2s. Plans and speci-
fication and form of contract at the school.

NOVEMBER 11.—**Cambridge.**—**SCHOOLS.**—Erec-
tion of schools on ground adjoining Melbourne-
Road. Plans and specification seen, and quanti-
ties from the Borough Engineer and Surveyor,
Town Hall, Cambridge. Deposit of 11. 1s.

NOVEMBER 11.—**Glasgow.**—**ALTERATIONS.**—For
alterations at Partick Depot. Plans seen, and
form of tender from Mr. Jas. Dalrymple,
Rail Manager, 66, Bath-street.

NOVEMBER 12.—**Croydon.**—**DISINFECTING-
MACHINE.**—The Croydon B.C. invite tenders
for the construction and erection of a disinfec-
tory-lane. See advertisement in this issue
for further particulars.

NOVEMBER 12.—**Kilkeel.**—**COTTAGES.**—Erection
of two labourer's single cottages, seven
cottages, and fencing plots. Plans, speci-
fications, and tender forms from Mr. W.
J. Clerk, Board-room, Kilkeel. Deposit of
11. 1s.

NOVEMBER 13.—**Willesborough.**—**SCHOOL.**—
The Kent Education Committee invite ten-
ders for the construction and alterations to
school premises. See advertisement in this
issue for further particulars.

NOVEMBER 14.—**Spworth.**—**ADDITIONS.**—For
alterations and additions to the Council school.
Plans and form of tender from Messrs.
R. & Gamble, architects, Bank-street,
Spworth. Deposit of 11. 1s.

NOVEMBER 15.—**Haslington.**—**HOUSES.**—Erec-
tion of nine single dwelling-houses and nine set-
tling buildings, on the Haslington Estate,
near Haslington. Plans seen, and specifica-
tions and forms of tender from the Surveyor
of the C.C. Land Agent, County
Office, 49, Northgate-street, Chester, on
16. of 11.

NOVEMBER 18.—**Wimbledon.**—**ADDITIONS.**—
Wimbledon Corporation invite tenders for
the construction and alterations to school
premises and for alterations to
school premises. See advertisement in this
issue for further particulars.

NOVEMBER 21.—**Newbury.**—**CLASSROOM.**—Erec-
tion of a new classroom, cloakroom, etc., at
the school. Plan and specification with
forms of contract from Mr. William J.
Andrews, Architect to the Committee, Bid-
court, St. Austell.

NOVEMBER 23.—**Ballyvaughan.**—**RECTORY.**—For
erection of a rectory. Plans, specification, and
forms of contract from Mr. William J.
Andrews, F.R.I.B.A., architect, 2, Wellington-
Road, Belfast.

NOVEMBER 23.—**Coleraine.**—**IMPROVEMENTS.**—
Improvements and improvements at the harbour,
Coleraine. Drawings and specification from
Mr. W. Henry, Secretary to the Commissioners,
Public Works, Coleraine. Office, Coleraine.
Deposit of 11. 1s.

NOVEMBER 15.—**Bangkok.**—**POWER-STATION.**—
Construction of an electric power-station, capacity
of 1000 kilowatts, at Bangkok. Plans and speci-
fications from the Bangkok Electric Power-Station, Local Sanitary
Department, Bangkok. Specifications, etc., at
the Commercial Intelligence Branch of the Board
of Trade, 73, Basinghall-street, E.C.

NOVEMBER 15.—**Birkenhead.**—**HOUSES.**—Erection
of houses. Plans from Mr. J. M. Garrod,
sect. F.S.I., Birkbeck-chambers, Holborn.

NOVEMBER 15.—**Birstall.**—**EXTENSION.**—Proposed
extension at the Infectious Diseases and Small-
pox Hospital, Birstall. Plans from Mr. W. B.
Birtwell, architect, Birstall. Deposit of 11. 1s.

NOVEMBER 15.—**Cherbury.**—**PREMISES.**—Erection
of premises at Cherbury. Drawings
and specification seen, at quantities, on deposit

of 31. 3s., from Mr. W. H. Shute, Corn Exchange-
chambers, Newport.

NOVEMBER 15.—**Dinas Powis.**—**HOUSE.**—Erection
of a house. Quantities from Messrs. Teather &
Wilson, F.R.I.B.A., architects, Andrews-
building, Queen-street, Cardiff.

NOVEMBER 15.—**Hull.**—**PAVILION.**—Erection of a
cricket pavilion, for the Hull Coal Exporters'
Cricket Club. Apply to Mr. F. Myers, Hon.
Secretary, Northern-chambers, Queen-street,
Hull.

NOVEMBER 15.—**Parc.**—**HOUSE.**—For building a
house at Parc, near Bala. Plans, specification,
and particulars from Messrs. Deakin & Howard
Jones, M.S.A., Plas Ynys, Borth, R.S.O.

NOVEMBER 15.—**Upper Bank.**—**HOUSE.**—Erection
of a house. Names to the architects, Messrs.
Richard Davies & Son, Lic.R.I.B.A., architects.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 27.—**Birkenhead.**—**CYLINDERS.**—For
providing and fixing new copper cylinders, etc.
in connexion with hot-water supply in tower of
Workhouse Block, at the Birkenhead Union
Workhouse. Specification from Messrs. E.
Kirby & Sons, architects, 5, Cook-street, Liver-
pool. Deposit of 11. 1s.

NOVEMBER 4.—**Darlington.**—**DYNAMO.**—Erection
of a 500-kw. D.C. dynamo, coupled to a re-
ciprocating steam-engine. Specification from the
Borough Electrical Engineer, Electricity Works,
Haughton road. Deposit of 11. 1s.

NOVEMBER 4.—**London.**—**STEAM ROLLER.**—
The Surrey B.C. invite tenders for supply of a
10-ton steam roller. See advertisement in this
issue for further particulars.

NOVEMBER 14.—**Antrim.**—**WELL.**—For sinking
a well and erection of pump at Oldstone.
Specification from Mr. J. L. Clark, Clerk, Union
Office, Antrim.

JANUARY 15, 1912.—**Bosnia.**—**BRIDGE.**—For con-
struction of a bridge across the Neretva at
Mostar. Deposit of 10,000 kronen (about 417l.).
Commercial Intelligence Branch of the Board of
Trade, 73, Basinghall-street, E.C.

JANUARY 29, 1912.—**Christchurch (N.Z.).**—
PLANT. Erection at the pumping-station of a
suction-gear pumping plant, capable of lifting
700,000 gallons of water per hour to a height of
270 ft. Specification, etc., at the Commercial
Intelligence Branch of the Board of Trade, 73,
Basinghall-street, E.C.

FURNITURE, PAINTING, MATERIALS.

etc.

NOVEMBER 24.—**Portsmouth.**—**PAINTING.**—For
painting exterior of the Park-road depot. Spec-
ification from the Borough Engineer, Town Hall,
Portsmouth.

NOVEMBER 27.—**Birkenhead.**—**PAINTING.**—For
external painting at the Union Workhouse.
Tender. Specification from Mr. John Carter,
Clerk to the Guardians, Guardians' Offices,
Birkenhead.

NOVEMBER 29.—**Hull.**—**PAINTING.**—For painting
upper part of Stoneferry Bridge. Forms of
tender from Mr. A. E. White, M.Inst.C.E., City
Engineer, Town Hall, Hull.

NOVEMBER 29.—**Fool.**—**PAINTING.**—For painting
and decorating works at the Wesleyan
Methodist Church. Drawings and specifications
from Mr. Sampson Hill, architect, Redruth.

NOVEMBER 1.—**Lancaster.**—**PAINTING.**—For the
exterior painting of certain portions of the
County Lunatic Asylum. Particulars at the
Asylum. Mr. J. R. Wilson, Clerk and Steward.

NOVEMBER 4.—**Tipton.**—**DOORS.**—For painting
time-washing, etc., the High-street
West Washhouses. Specification from the
Borough Surveyor, Town Hall.

NOVEMBER 4.—**Tipton.**—**DOORS.**—For altering
the outer doors of Dudley Port, Burnt Tree
Tipton Green, Bloomfield, Great Breeze, and
Ocker Hill Council schools. Mr. E. Richards,
Secretary, Owen-street, Tipton.

NOVEMBER 4.—**Ashington.**—**FITTINGS.**—For
the fittings and furnishings in the new
Council offices. Names to Mr. Osborne Blythe,
architect, Ashington.

NOVEMBER 4.—**Haswell.**—**PAINTING.**—For paint-
ing premises, for the Haswell Co-operative Pro-
vision Society, Ltd. Specifications from the
Secretary

ROADS, SANITARY AND WATER

WORKS.

NOVEMBER 25.—**Bacup.**—**PAVING.**—For paving
Tadpole-street and Rose-street. Specifications and
quantities from Mr. W. H. Elce, A.M.Inst.C.E.,
Borough Engineer, on deposit of 11. 1s.

NOVEMBER 25.—**Edinburgh.**—**PAVING.**—For
construction of footpath along frontage of unsewed
ground at St. Clair-street, and fencing at Calton-
hill. Plans and specifications from Mr. J. A.
Willmott, A.R.I.B.A., City-chambers.

NOVEMBER 25.—**Ilford.**—**PAVING.**—For paving
of the High-road. Mr. Percy J. Sheldon,
M.Inst.C.E., County Surveyor, Chelmsford.

NOVEMBER 27.—**Andover.**—**DRAINAGE.**—For the
redrainage of premises at Winchester-street.
Specification from Mr. R. W. Knapp, Borough
Surveyor, Town Hall.

NOVEMBER 27.—**Hillmorton.**—**WATER MAINS.**—
For supplying and laying water mains. Plans
and specifications from Mr. T. W. Willard, Sur-
veyor to the Council, Rugby.

NOVEMBER 28.—**Neasden.**—**SEWERAGE WORKS.**—
The Willesden D.C. invite tenders for pipe
sewers and incidental works at Quainton-street
and Neasden-lane. See advertisement in this
issue for further particulars.

NOVEMBER 28.—**Swansea.**—**SEWER.**—For the
extension of the existing Fort Tennant sea outfall
sewer. Drawings, specifications, and form of
tender from Mr. R. H. Wyrill, the Borough
Engineer, Guildhall, Swansea. Deposit of 11. 1s.

NOVEMBER 29.—**Birmingham.**—**MATERIAL.**—For
supply of road material. Mr. J. Willmot, County
Surveyor, 6, Waterloo-street, Birmingham.

NOVEMBER 29.—**Dunvant.**—**MAINS.**—For fixing
and laying 200 yds. of 3-in. water mains, sluice
valves, hydrants, etc. Plans, quantities, and
conditions of contract from the Surveyor of the
Council, Mr. T. T. Williams, Alexandra-road,
Swansea.

NOVEMBER 30.—**East Linton.**—**WATER WORKS.**—
For constructing filters and clear water tank,
and providing, laying, and jointing cast-iron
pipes therefrom to East Linton. Plans seen,
specification and schedule of work from the
engineers, Messrs. J. & A. Leslie & Reid, C.E.,
72a, George-street, Edinburgh. Deposit of 11. 1s.

NOVEMBER 30.—**Fallowthorpe.**—**SEWER.**—For the
construction of a sewer in Roman-road and
Albert-street. Plans seen, and specification,
quantities, and form of tender from the Surveyor,
Town Hall, Fallowthorpe, on deposit of 21. 2s.

NOVEMBER 30.—**Greenwich.**—**PAVING.**—For
paving the roadway and footways of Bram-
shot-avenue. Specification and plan seen, and
particulars from the Borough Engineer, Town
Hall, Greenwich-road, S.E.

NOVEMBER 30.—**Swansea.**—**ROADS.**—For
construction of roads, sewers, surface-water
drains on the Parkview Estate. Drawings and
specifications from Messrs. Richard & Mathews,
civil and mining engineers and surveyors,
Crown-chambers, Salubrious-place, Swansea.
Quantities on deposit of 21. 2s.

NOVEMBER 30.—**Westbourne.**—**FLINTS.**—For
supply of clean hand-picked field flints. Mr. H.
Norris, Surveyor, West Ashling, Chichester.

NOVEMBER 4.—**Faversham.**—**SEWAGE.**—Con-
struction of sewage and storm-water tanks, set-
tling tank, percolating filters, sedimentation
tank, ash-bed, two outfalls, wharf, roads, paths,
and fences. Drawings seen, and specifications,
quantities, forms of tender, and other particulars
from the Borough Surveyor, Mr. S. Percy
Andrews, 21, West-street, Faversham. Deposit
of 51. 5s.

NOVEMBER 4.—**London.**—**PAVING.**—For the
making up and paving of part of Lessingham
avenue, Tooting. Specification and drawings
seen, and forms of tender from the Borough
Engineer, at the office of the New Street D.C.,
East-hill, Wandsworth, S.W. Deposit of
61. 5s.

NOVEMBER 6.—**Clacton-on-Sea.**—**ROAD.**—For
making up, rolling-road, Severn-road, and
Central-avenue. Drawings, specifications, and
conditions from Mr. D. J. Bowe, Surveyor, Town
Hall, Clacton-on-Sea.

NOVEMBER 9.—**Malden.**—**MATERIALS.**—For
supply of materials. Specification and forms of
tender from the County Surveyor, Malden.

NOVEMBER 13.—**Dublin.**—**SETTS.**—For supply of
paving sets. Mr. N. Proud, Secretary, Port
and Docks Office, Westmoreland-street, Dublin.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
MAN OF WORKS.	Sierra Leone Government	See advertisement in this issue	No date.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
DEER AND CONTRACTORS PLANT, ENFIELD TOWNS—On the Premises	Alfred Bowyer & Jones	Nov. 28
DEER, PATENS, HOBBS' TIMBER, Etc.—Great Hall, Winchester House, E.C.	Churchill & Sim	Nov. 30
HOLD BUILDING LAND, BLETHLEY—Park Hotel, Blethley	Geo. Wigley & Sons	Nov. 30
ER, MATERIALS, AND FITTINGS OF BLOCK OF BUILDINGS—On the Site	Rooker & Webb	Dec. 4
HOLD PROPERTY, OXFORD STREET, W.—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Dec. 6
EDITION BUILDINGS—On the Premises	J. G. Platt	Dec. 6
HOLD BUILDING ESTATE, CLAPHAM—At the Mart	Messrs Nicholas	Dec. 13
HOLD PROPERTIES, PINSBURY—At the Mart	Debenham, Tewson, Richardson, & Co.	Dec. 14
HOLD SITE, SPITALFIELDS—At the Mart	Debenham, Tewson, Richardson, & Co.	Dec. 14
HOLD PROPERTY, UPPER NORWOOD—At the Mart	Debenham, Tewson, Richardson, & Co.	Dec. 14

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xvi.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

NOVEMBER 30.—**Cardiff**.—TECHNICAL INSTITUTE. The Cardiff Education Committee invite designs and estimates for a technical institute. See advertisement in issue of August 18 for further particulars. Successful architect to carry out work. Premiums of 125*l.*, 75*l.*, and 50*l.* to other competitors. Mr. J. S. Gibson, F.R.I.B.A., assessor.

NOVEMBER 30.—**Hastings**.—EAST SUSSEX HOSPITAL. The Joint Committee of the East Sussex Hospital and King Edward VII. Memorial Funds invite designs for new hospital. See advertisement in issue of August 25 for further particulars. Premiums of 125*l.*, 75*l.*, and 50*l.* Mr. E. T. Hall, F.R.I.B.A., assessor.

DECEMBER 4.—**Bristol**.—Pavilion on recreation-grounds. Cost not to exceed 3,000*l.* Particulars from Messrs. Packer & Co., Greenbank, Bristol.

DECEMBER 15.—**Sofia**.—NEW MUNICIPAL BUILDING. See Competition News, page 508, November 3.

DECEMBER 23.—**Glasgow**.—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60*l.* and 20*l.* are offered. See advertisement in issue of December 24, 1910, for further particulars.

DECEMBER 30.—**Armadale**.—Public hall and offices, to cost 2,500*l.* Premiums of 15*l.* and 10*l.* Open only to architects who were represented on the site on October 12.

DECEMBER 30.—**Welsh Bisteddidd**, 1912.—DESIGNS FOR WORKMEN'S DWELLINGS.—Prize, 50*l.* Particulars from Welsh Housing Association, 9, Temple-chambers, E.C.

JANUARY 1, 1912.—**Rochdale Infirmary**.—EXTENSIONS.—Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 6, 1912.—**Bolton**.—Miners' Federation Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 50*l.* and 25*l.* Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernhough, 7, Fold-street, Bolton.

JANUARY 6, 1912.—**Stafford**.—PUBLIC LIBRARY.—The Stafford Corporation invite designs for a Public Library. Mr. Henry T. Hare, F.R.I.B.A., assessor. Second and third premiums of twenty and five guineas. Particulars from Mr. W. Plant, A.M.Inst.C.E.

* JANUARY 9, 1912.—**Spennymoor**.—PUBLIC HALL, ETC.—The Spennymoor U.D.C. invite competitive plans and designs for a public hall, market, and offices, etc. Three premiums are offered. See advertisement in this issue for further particulars.

JANUARY 22, 1912.—**Montevideo**.—Government palace (premiums, 2,125*l.* and 850*l.*) and town improvement scheme (premiums, 1,060*l.*, 640*l.*, and 425*l.*). Conditions may be seen at the Board of Trade, 73, Basinghall-street, E.C.

JANUARY 31, 1912.—**Australia**.—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 508, November 3.

* FEBRUARY 17, 1912.—**London, E.C.**—NEW OFFICES.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity-square, and for laying out remainder of land as a building site. See advertisement in this issue for further particulars.

JULY 1, 1912.—**Dusseldorf**.—A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 375*l.* Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

NO DATE.—**Jordanhill, Glasgow**.—PROPOSED TRAINING COLLEGE.—See Competition News, page 508, November 3.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 24.—**Brixham**.—THEATRE.—For converting a portion of the market into a picture theatre. Drawings and specifications seen, and information from the architect, Mr. Fred Wm. Vaneaton, Palace-chambers, Faversham.

NOVEMBER 24.—**Dunkeld**.—HOUSES.—The Highland Railway Company invite tenders for a

block of four houses for workmen at Dunkeld and Birnam Stations. Plans and specifications with Mr. William Roberts, the Company's Engineer-in-Chief, Inverness.

NOVEMBER 25.—**Bala**.—RANGE. For the laying out of a rifle range at Gwastadrihos, near Bala. Plans, specifications, and information from Mr. Robert Wm. Davies, M.S.A., architect and surveyor, Carno, Mont.

NOVEMBER 25.—**Blaydon-on-Tyne**.—HALL.—For erection of a church hall. Quantities from Messrs. Clark & Moscrop, F.F.R.I.B.A., architects, Darlington.

NOVEMBER 25.—**Keighley**.—HOUSES.—Erection of a pair of houses in Keighley. Plans seen, and quantities from Messrs. J. Haggas & Sons, architects, North-street, Keighley.

NOVEMBER 25.—**Maldstone**.—REPAIRS, ETC.—For drainage work and repairs at the public baths, and exterior painting of the baths, Borough Surveyor's and Sanitary Inspector's offices. Drawings and specifications seen, and particulars from Mr. T. F. Bunting, Borough Surveyor.

NOVEMBER 25.—**Pontllytyn**.—PICTURE PALACE.—For converting a part of the old school into a picture palace, etc. Plans and specification at the architect's offices, Mr. T. Roderick, Ashbrook House, Aberdare.

NOVEMBER 27.—**Alnwick**.—ADDITIONS.—For alterations and additions to the public baths, Market Place-chambers, Durham.

NOVEMBER 27.—**Caersws**.—HOUSE, ETC.—Erection of quarry master's house and office at Penstrowes Quarry. Plans and specifications from the County Surveyor, Broad-street, Newtown. Deposit of 1*l.*

NOVEMBER 27.—**Brecon**.—SHOWROOM.—Erection of a showroom, offices, etc., at gasworks. Plans and specifications at the Town Hall. Mr. Cowan, Surveyor to the Council.

NOVEMBER 27.—**Oban**.—HOUSES.—The Callander and Oban Railway Company invite tenders for the erection of a house for the station. Drawings seen, and specification from the Company's Engineer, Buchanan-street Station, Glasgow. Deposit of 2*l.*

NOVEMBER 27.—**Tynecastle**.—ROOFING.—For steel and glass roofing at workshop buildings, Tynecastle Supplementary School. Plans seen, and schedules from Mr. J. A. Cairns, architect, 3, Queen-street, Edinburgh.

NOVEMBER 28.—**Kilmallock**.—STONE, ETC.—Erection of a coal-shed and general store. Plans and specifications at the offices of the Irish Agricultural Organisation Society, Plunkett House, 84, Merrion-square, Dublin.

NOVEMBER 28.—**Mardy**.—COTTAGES.—Erection of twenty-two cottages near the Mardy Hospital, for the Mardy Building Club. Plans and specifications from Messrs. Johnson & Richards, architects, Merthyr Tydfil.

* NOVEMBER 28.—**Willensden**.—RUSTIC BANDSTAND.—The Willensden D.C. invite tenders for supply and fixing of rustic bandstand at Roundwood Park. See advertisement in this issue for further particulars.

NOVEMBER 29.—**Audlem**.—ADDITIONS.—For alterations and additions to the Audlem Grammar School. Plans and specifications from Mr. H. Bewick, F.R.I.B.A., County Architect, Newgate-street, Chester. Deposit of 1*l.* for quantities.

NOVEMBER 29.—**Hoole**.—SCHOOL.—Erection of a new Council School. Forms of tender and quantities on deposit of 2*l.* Plans and specification and drawings with the architects, Messrs. John H. Davies & Sons, 14, Newgate-street, Chester.

NOVEMBER 29.—**Manchester**.—WALL.—For rebuilding part of the boundary wall between the Crumpled Workhouse and the Prestwich Union Workhouse. Particulars and form of contract at the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester. Deposit of 10*l.*

NOVEMBER 29.—**Welwyn**.—COTTAGE.—Erection of engineer's cottage. Plans and specifications from Mr. H. F. Mence, architect, 11, St. Peter's-street, St. Albans.

NOVEMBER 30.—**Aberdare**.—THEATRE.—Erection of an electric theatre for the Aberdare Cinemas, Ltd. Plans and specification seen, and quantities, on deposit of 2*l.* Plans and specifications from Messrs. Johnson & Richards, architects, Merthyr Tydfil.

NOVEMBER 30.—**Aberystwyth**.—ADDITIONS, ETC.—For proposed additions and alterations to Nos. 27, 29, and 31, Queen-street. Plans and specifications from Mr. J. Lewis Evans, architect and surveyor, 21, Great Darkgate-street, Aberystwyth.

NOVEMBER 30.—**Aberystwyth**.—HOUSE.—Erection of dwelling-house, etc., in Queen's-road. Plans and specifications from Mr. J. Lewis Evans, architect and surveyor, 21, Great Darkgate-street, Aberystwyth.

NOVEMBER 30.—**Hull**.—ADDITIONS.—For alterations to the girls' schools. Drawings and specifications from Mr. J. Elson, architect, 23, Foment-street, Hull. Quantities on deposit of 1*l.*

NOVEMBER 30.—**Liverpool**.—ALTERATIONS.—Extensive alterations at the Territorial Quarters and Drill-hall, Nos. 73, 75, 77, and 79, St. James-street. Plans and specifications, with quantities from the architect, Mr. J. C. Walker, Minister-chambers, Crosshall-street, Liverpool.

* NOVEMBER 30.—**London, N.**—ALTERATIONS.—The St. Mary Islington Guardians invite tenders for alterations, etc., at Receiving Home, Hornsey-rise, N. See advertisement in issue for further particulars.

* NOVEMBER 30.—**London, N.**—PLASTER, ETC.—The St. Mary Islington Guardians invite tenders for plastering walls, etc., at Infring Highgate-hill, N. See advertisement in issue for further particulars.

NOVEMBER 30.—**Troedyrhiw**.—THEATRE.—Erection of an electric theatre for the Troedyrhiw Cinema Company, Ltd. Plans and specifications seen, and quantities, on deposit of 1*l.* 16*s.* Messrs. Johnson & Richards, architects, Merthyr Tydfil.

NOVEMBER 1.—**Ebrington**.—COTTAGE. Erection of a cottage. Plans and specifications from Mr. H. Callaway, architect, Union-chambers, Stratford-on-Avon.

DECEMBER 1.—**Pontypridd**.—CHURCH.—Erection of proposed new church and institute. Drawings and specification seen, and quantities on deposit of 1*l.* 16*s.* Messrs. Johnson & Richards, architects, Merthyr Tydfil.

DECEMBER 4.—**Batley**.—ADDITIONS, ETC.—Alterations and additions to the girls' schools in Mill-lane. Plans, specifications, quantities from Messrs. W. Hanstock & Branch-road, Batley.

DECEMBER 4.—**Greenwich**.—REPAIRS.—Repairs to the roof of the laundry at the Greenwich baths and washhouses. Specification form of tender at the Borough Engineer's Office, Greenwich. Deposit of 1*l.*

DECEMBER 4.—**Pontmorlais**.—THEATRE.—Erection of an electric theatre, for the Merthyr Tydfil, Ltd. Plans and specification on deposit of 2*l.* Messrs. Johnson & Richards, architects, Merthyr Tydfil.

DECEMBER 4.—**Stanwell**.—HOME.—Erection of a home adjoining the Union Workhouse. Plans, specifications, quantities, from the Architect, Mr. G. W. Manning, London. Deposit of 2*l.*

DECEMBER 4.—**Manchester**.—EXTENSIONS.—Extensions to the buildings at depot, Queen's-road, Cheetham. Specification, quantities, form of tender from Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester, on deposit of 1*l.*

DECEMBER 5.—**Finsley**.—SCHOOLS.—For alterations and additions to the Church of England schools. Plans seen, and quantities, deposit of 1*l.* from Mr. G. A. Wilson, architect and surveyor, Herlained-chambers, Sheffield.

DECEMBER 5.—**Aberhan**.—HOUSES.—Erection of twelve houses at Yaya-y-Gored, Aberhan, for the Grove Building Club, No. 2. Plans and specification from Mr. T. Edmund Rees, architect, Merthyr Tydfil.

DECEMBER 6.—**Llanfachraeth**.—ADDITIONS, ETC.—For additions, alterations, and repairs to the Council School. Plans and specifications from Mr. Jos. Owen, F.R.I.B.A., County Architect, Menai Bridge.

* DECEMBER 6.—**London, N.W.**—BATHS.—ACCOMMODATION.—The Metropolitan Asyl Board invite tenders for forming bath accommodation in isolation block at N.W. Hospital, Ladbroke-road, Hampstead. N.W. advertisement in this issue for further particulars.

DECEMBER 7.—**London, E.**—REPAIRS.—The George-in-the-East Guardians invite tenders for sundry repairs at Workhouse and Infring Rame-street, Old Gravel-lane, E. See advertisement in this issue for further particulars.

* DECEMBER 7.—**London, E.**—SUNDRY WORK.—The St. George-in-the-East Guardians invite tenders for sundry works at schools, etc., in the district of St. George-in-the-East. See advertisement in this issue for further particulars.

* DECEMBER 8.—**East Ham**.—PUBLIC OFFICES.—Commissioners of H.M. Works and Public Buildings invite tenders for demolition of old offices, and erection of new brick post-office sorting-office. See advertisement in this issue for further particulars.

METALS (Continued).

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

ABERDARE.—For providing and fixing new laboratory fittings at the new Girls' Intermediate School, Aberdare, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, County Architect, Cardiff :—
P. E. Gone, Cardiff* £367 2 6

BROMBOROUGH.—For erection of Council offices.
Mr. J. Clarke, Council Surveyor, 34, Castle-street,
Liverpool:—
J. Lee & Son, Higher Bebington, Cheshire* £1,895

CAERPHILLY.—For installing low-pressure hot-water apparatus at the new Higher Elementary School, Caerphilly, for the Glamorgan Education Committee, Mr D. Pugh-Jones, F.S.I., County Architect, Cardiff:—
J. King & Co., Liverpool* £250

CARSHALTON. -For works, for the Urban District Council. Mr. W. Willis Gale, A.M.Inst.C.E. :—

Making-up		Park-avenue.	
S. Kavanagh	£307 17 0	J. May & Son...	£247 14 7
W. Pearce...	305 15 10	E. & E. Hes,	
F. Potter.....	270 0 0	Wimbledon*.	246 4 6
G. W. Aedy...	268 17 3		

Pulling Down Cottage and Erection of Sheds and Stores at the Depot, Nightingale-road, and in rear of the Council Offices.

Truett & Steele	£1,220	0	0	F. Potter	.....	£348	0	0
F. G. Lawrence	1,139	10	0	E. Smart & Son,				
E. J. Burnand	995	3	0	Croydon*	....	759	11	2
R. Jones & Son	911	0	0					

CASTLEFORD.—For reconstruction of warehouse at Castleford, exclusive of plasterers' work, for Messrs. Lumb & Co., Ltd. Mr. F. Scatehard, architect and surveyor, Bank-street, Castleford. Quantities by Mr. W. Hoffman-Wood F.Q.A., Leeds:—

Excavator, Brick-layer, and Mason : I. J. Gallagher	£380 0 0
Carpenters and Joiners : A. Gregory & Son ..	440 0 0
Slater : W. P. Allison ..	145 0 0
Plumbers and Glaziers : Bateson & Sons ...	370 3 9
[All of Castleford.]	

CHISWICK. -For relaying wood-paving in High-road, Chiswick (Gunnersbury section), for the Urban District Council: -

	Price per yard super, for work specified with free maintenance for three years.	Annual equated charge for main- tenance for five subsequent years, per yard super.
—	Three years.	Four to eight year per annum.
	s. d.	s. d.
Improved Wood	8 11 (1) ¹ *	25
Pavement Co. ...	9 25 (4) ² *	25 ¹
	13 9 (3)	
	11 3 (1)	9
W. Griffiths & Co.	10 4 (2)	9
	13 10 (6)	9
	8 85 (1)	1 6
T. Wood & Sons ...		

(1) 8-in. to 9-in. by 5-in. by 3-in. Creosoted deal block paving, all as specified (2) Ditto, but each block dipped for half its depth and laid close-jointed. (3) 9-in. by 5-in. by 3-in. Jarrah, laid to bond and grouted with pitch and tar only.

CLYDACH VALE (Glam).—For erection of a new transept, with classrooms and other work, at the Parish Church, for the Rev. W. Meredith Morris and Building Committee. Mr. J. W. Rodger, architect, 14, High-street, Cardiff. Quantities by architect —

M. Cole & Co. £1,554 12 9	W. Cox	£1,125 6 1
D. Davies &	E. R. Evans	
Sons 1,385 0 0	Bros.	1,694 14 0
Williams &	G. Beames,	
James 1,213 1 8	Cardiff* ..	1,049 14 10
J. B. Mundy 1,262 7 0		

CORNELLY (Glam).—For extensions and alterations to Cornelly Council School, for the Glamorgan County Council. Mr. D. Pugh-Jones, F.S.I., County Architect, Cardiff:—
W. A. Jones, Barry* £1,784

DROGHEDA.—For alterations and additions to		
Beaulieu House, Mr. S. Wilson Hesdie, C.E., architect,		
Margaret's Square, Newry. Quantities by Mr. F. S. Hall,		
F. S. Hall, quantity surveyor, Dublin.		
Wylie & Lock-	J. & R. Thomp-	
son,	son,	£2,100 0
J. & W. Son,	J. Graham,	2,048 0
W. J. Campbell	H. Healy, Drog-	
& Son,	heda*,	2,029 0
T. Smullen & Sons,		

GILFACH (Glam).—For extending the Gilfach Fargod Infants' Council School, for the Glamorgan County Council. Mr. D. Pugh-Jones, F.S.I., County Architect, Cardiff.

D. Davies, Donald-street, Cardiff* £849

GRAYS (Essex). For the erection of an infants' school at Grays, for the Essex Education Committee. Mr. Christopher M. Shiner, A.R.I.B.A., architect and surveyor, 10, Duke-street, Adelphi, W.C. Quantities by Mr. G. Silvester, F.S.I.

J. Chessum & Sons	£6,035 0 0	Dowsing & Davis	£5,395 0 0
C. S. Foster & Sons	5,751 0 0	W. E. Davey	5,339 13 7
W. Potter	5,681 0 0	G. Brown	5,395 14 0
A. H. Fryd	5,433 0 0	Fruty & Sons	5,244 0 0
J. S. Hammond & Sons	5,425 0 0	H. J. Carter, Ltd.	5,149 0 0
		Brown Bros.	4,763 10 0

LEYTONSTONE. — For erecting two fire-escape staircases and various structural alterations in connexion therewith at the Home of the Good Shepherd. Mr. Arthur Hogwood, architect, Eastwood road, South Woodford.

H. T. Poole & Son, S. Woodford	£221 4
--------------------------------------	--------

LONDON. — For restoration of seventeen cottages, Nos. 17 to 29 (inclusive), Block C, and Nos. 38 to 76 (inclusive), Block D, Maplin-road, E., for Mr. R. I. Crawford. Mr. A. E. Nightingale, architect, Gray's Inn-chambers, London, W.C.:

		Weeks.	Weeks.
Wyborn	£3,491 0 0	34	26
Leaper	3,164 0 0	14	26
F. Smith & Co.	2,975 0 0	17	20
Small & Son	2,946 0 0	17	20
Welchman & Wise	2,715 0 0	8	20
Kirby	2,515 8 0	12	22
Spinner	2,370 0 0	8	17
West	2,250 0 0	9	12
Combes	2,263 1 3	9	13
Gutsell	2,250 0 0	—	—
Roffey & Sons	2,210 0 0	—	—
Wood Bros.	1,854 0 0	8	11
Hunt & Son	1,497 0 0	9	12
W. Alston	1,330 0 0	10	13

[Architect's estimate, £1,338. Block C, 14 weeks; Block D, 20 weeks, or 5 per cent. on cost.]
 † Time to be arranged.
 § Approximate estimate, £130 house.

LONDON. — For the supply, etc., of static transformers and switchgear for the new sub-station to be erected at Vauxhall, for the London County Council:

Static Transformers.	
W. E. Barnard & Co.	£3,988 10 0
Dick, Kerr, & Co., Ltd.	3,139 10 0
British Thomson-Houston Co., Ltd.	3,065 0 0
General Electric Co., Ltd.	2,875 0 0
British Electric Transformer Co., Ltd.	2,803 5 0
British Westinghouse Electric & Manufacturing Co., Ltd.	2,772 10 0
High and Low Tension Switchgear.	
Ferranti, Ltd.	£8,079 10 4
Siemens Bros. Dynamo Works, Ltd.	7,418 15 0
Electric Construction Co., Ltd.	7,408 2 11
Co., Ltd.	6,950 12 0
Spagnoletti, Ltd.	6,821 0 0
General Electric Co., Ltd.	6,498 0 0
A. Reyrolle & Co., Ltd.	6,394 15 0
Johnson & Phillips, Ltd.	6,193 15 0
Switchgear Co., Ltd.	5,29 18 6

LONDON. For the enlargement and improvement of the Old Kent-road Schools for Physically Defective and Deaf Children, for the London County Council.

	Alternative Prices.
Leslie & Co., Ltd.	£8,478 £9,131
Rowley Bros.	8,892 9,634
Kirk & Randall	8,658 9,403
Higgs & Hill, Ltd.	8,181 8,801
Holloway Bros. (London), Ltd.	8,111 8,360
W. Downs	8,151 + 125
H. L. Holloway	8,044 8,271
W. Johnson & Co., Ltd.	8,032 8,770
J. & C. Bowyer, Ltd.	7,776 7,919
Kerridge & Shaw	7,676 7,730

BILLS of QUANTITIES
ELECTROGRAPHED
 Quickly, **ACCURATELY,**
 Cheaply.

E. G. BUCK, 16, Furnival St., Holborn, LONDON, E.C.
 Telephone: Holborn 2335.

SHOREHAM. — For alterations and additions to the Grammar School. Mr. C. Latham, architect, Dolphin-chambers, Sussex:

J. Barnes & Sons	£2,520 0 0	W. Willeth	£2,241 15 0
Bostel Bros.	2,492 0 0	McKellar & Western	2,219 0 0
C. G. Chessum	2,411 0 0	E. H. Curd, Shoreham	1,962 12 4
Parsons & Sons	2,308 0 0	Gates & Sons	2,253 0 0
R. Cook & Sons	2,270 0 0		

STANWELL. For erection of an isolation hospital, for Hospital Committee. Mr. G. W. Manning, architect, London Road, Ashford, Middlesex:

Foster & Dick-son	£12,960 0 0	Barfoot & Fox	£11,714 0 0
Pitch & Cox	12,099 0 0	Jarman & Co.	11,542 10 0
W. Beauchamp	12,691 14 0	A. & B. Hall	11,567 0 0
Messom & Sons	12,159 0 0	R. Love & Co.	11,358 0 0
Martin, Wells, & Co.	12,115 0 0	W. Lawrence	10,970 0 0
W. Watson	12,112 0 0	E. Hawkins	10,788 14 1
E. Lawrence	12,093 0 0	C. H. Hunt & Son	10,499 0 0
J. Longley & Co.	12,006 5 0	G. H. Gibson	10,488 13 0
A. N. Coles	11,876 12 0	T. Higgs	10,407 14 8
McCormick & Sons	11,794 0 0	S. E. Moss	10,200 0 0
ter & G. Foster	11,758 0 0	S. E. Moss	10,200 0 0

TONYREPAUL (Glam.). — For erecting boundary walls, etc., for the Cwmwlol Council Schools, for the Glamorgan County Council. Mr. D. Pugh-Jones, M.S.A., County Architect, Cardiff.

John & West, Lantrissau	£206
-------------------------------	------

TRIPHIL. — For installing 1½ pressure hot-water apparatus at the Triphil Council School, for the Glamorgan Education Committee:

J. C. Hitt & Sons, Bridgend	£203
-----------------------------------	------

UPPER WORTLEY. — For erection of conveniences. Mr. W. T. Lancashire, City Engineer, Leeds:

J. Richardson, Leeds	£116
----------------------------	------

WOOLWICH. — For the erection of a new police-court Mr. J. Dixon Butler, F.R.I.B.A., Architect and Surveyor to the Metropolitan Police, New Scotland yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.

W. Hay, Ltd.	£11,345	G. E. Wallis & Sons, Ltd.	£10,929
T. Graham & Co.	11,150	Prentice & Co., Ltd.	10,888
H. Kent	11,149	F. & F. H. Higgs	10,877
Holloway Bros. (London), Ltd.	10,991	G. Godson & Sons	10,861
Thomas & Edge	10,950	Sabey & Son, Ltd.	10,857
J. Mowlem & Co., Ltd.	10,948	J. Grover & Son	10,432
Holliday & Green	10,939	W. Lawrence & Son	10,072
wood, Ltd.	10,939	Fatman & Pether	9,963
		Ingham, Ltd.	

J. J. ETRIDGE, JR.
 SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write—
BETHNAL GREEN SLATE WORKS,
 BETHNAL GREEN, LONDON, E.

Ham Hill Stone.
Douling Stone.
Portland Stone.
 The Ham Hill and Douling Stone Co., Limited
 (Incorporating the Ham Hill Stone Co. and C. Trank & Sons, The Douling Stone Co.)
 Norton, Stoke-under-Ham, Somerset.
 London Agent:—Mr. E. A. Williams,
 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic L. Asphalte Company (Mr. H. Glenn), Office, 4, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milking rooms, granaries, gun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

WHAT!
 USE WHITE
LIME-SAND BRICKS
 (Of the Finest Quality)
FOR CONTRACT WORK?
WHY?
 B The Bricks are uniform.
 B Less mortar is required.
 A Closer joints can be made.
 C 15 per cent. more bricks can be laid per day.
 A Where light is required they need no whitewashing.
 B Saving of material and labour.
 B USED BY THE MILLION IN GERMANY, AMERICA, AND IN THIS COUNTRY.
 These Bricks are made by the
GODSTONE BRICK & TILE CO., LTD.,
 Oxed Road, Godstone, Surrey,
 and can be delivered in quantities of not less than 5,000 within 10 miles of the Company's Works at 27. per 1,000, net.
 Send for Free Samples

SPRAGUE & CO., Ltd.,
 LITHOGRAPHERS AND PRINTERS.
 Estate Plans and Particulars of Sale promptly executed.

4 & 5, East Harding-st., Fetter-lane, E.C.

OGILVIE & CO.,
 Telephone: DALSTON 1
 Many years connected with the site firm of W. LASCELLES & Co., Ltd. of Bunhill Row.

Amhurst Works, DALSTON LANE, N.
EXPERTS IN HIGH-CLASS JOINERY.

ALTERATIONS AND DECORATIONS.
ASPHALTE
 For Horizontal & Vertical Damp Courses
 For Flat Roofs, Basements, & other Floors

The best materials and workmanship are supplied

THE
French Asphalte Co.

Whose name and address should be inserted in specifications.

For estimates, quotations, and all information apply at the Offices of the Company.

5, LAURENCE POUNTNEY HILL
CANNON STREET, E.C.

EWART'S

"EMPEROR"

Established 1334.
 Telephone: 2570 North.

SMOKE-CURE

Cures in 19 cases out of 20.

Write to-day for Illustrated Catalogue Free to

EWART & SON Ltd.,
 346-350, Euston Road, London, N.W.

THE BUILDER

VOL. CL.—No. 3591.

DECEMBER 1, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
ECONOMY	623	NOTES TO ILLUSTRATIONS	638	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	656
NEW ARCHITECTURE IN THE EAST	624	FIFTY YEARS AGO	638	WESTMINSTER CITY COUNCIL	658
EXHIBITIONS	625	SOME THOUGHTS ON JACOBSEAN ARCHITECTURE		PATENTS	658
ARCHITECTURAL ASSOCIATION	626	(WITH ILLUSTRATIONS).....	639	SOME RECENT SALES.....	658
ARCHITECTURAL SOCIETIES	626	SCHOOL BUILDINGS.....	650	PRICES CURRENT.....	658
STONE MUNICIPAL BUILDINGS COMPETITION		THE BUILDING TRADE:—		TENDERS	659
(ILLUSTRATIONS).....	628	“ALLOW” OR “PROVIDE” P.....	651		
LOCAL NEWS	634	UNEMPLOYMENT INSURANCE	651		
NOTICE NEWS	635	FORCED BUILDING LABOUR IN THE MIDDLE AGES	652		
COLUMNS	636	CEMENT IN EGYPT.....	652		
LONDON COUNTY COUNCIL	637	GENERAL BUILDING NEWS.....	652		
RESPONSE	637	APPLICATIONS UNDER LONDON BUILDING ACTS,			
COMMUNICATION COLUMN.....	637	1894 TO 1909	652		
LOCAL SUMMARY.....	638	PROJECTED NEW BUILDINGS IN THE PROVINCES	653		
	638	ORITARY	653		
		LAW REPORT.....	654		
		LONDON COUNCILS	655		

ILLUSTRATIONS.

CHURCH OF ST. MARY, DORCHESTER. MR. CHARLES E. PONTING, F.S.A., ARCHITECT.

THE RED HOUSE, NEAR HITCHIN. MR. J. ALGERNON HALLAM, ARCHITECT.

ESTRANCE FROST, BEAMSHILL. THE SCHOOLS (NOW THE BODLEIAN LIBRARY), OXFORD.

PORCH OF ST. MARY'S CHURCH, OXFORD.

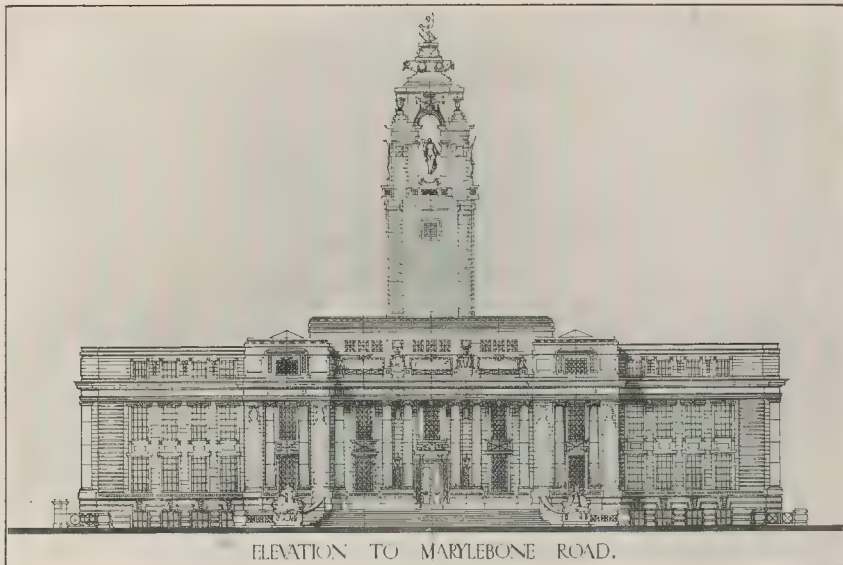
ILLUSTRATING PAPER BY MR. A. T. BOLTON ON "JACOBSEAN ARCHITECTURE"

Illustrations.

CHURCH OF ST. MARY, DORCHESTER. MR. CHARLES E. PONTING, F.S.A., ARCHITECT.

THE RED HOUSE, NEAR HITCHIN. MR. J. ALGERNON HALLAM, ARCHITECT.

ENTRANCE FRONT, BRAMSHILL. } ILLUSTRATING
THE SCHOOLS (NOW THE BODLEIAN } PAPER BY MR.
LIBRARY), OXFORD. } A. T. BOLTON
PORCH OF ST. MARY'S CHURCH, } ON “JACOBSEAN
OXFORD. } ARCHITECTURE.”



Marylebone Municipal Buildings. Design Placed First. (See page 628.)

By Mr. T. Edwin Cooper, F.R.I.B.A.

FALSE ECONOMY.

It might be thought that the decision as to when a building has become obsolete and demands to be replaced by one fulfilling modern requirements could legitimately be left to its owner, who may claim to be in a position to judge whether it will pay him or not to demolish or rebuild. There are, however, sound and sufficient reasons why the owner is in many cases not fitted to be the sole arbiter on the subject. The most obvious of these cases is in which the property is of a type essential to the health and character of the occupants—a state of things very

prevalent in our large cities. Attempts to deal with this have occupied their share of legislative effort for many years past, and, while a fair amount has been achieved, there is yet so much to be done that it has recently been proposed that improvement in this direction shall be transferred from municipal to national control.

We have previously expressed the view that there does not seem to be any logical reason for the change, which would certainly, according to past experience, not be likely to lead to increased economy or efficiency, and would, in most cases,

distribute the burden of cost less equitably than at present. Speaking of cost, this is apt to be excessive owing to the marked respect in which the rights of property are held. Only if a building is an absolute danger can it be legally destroyed; any minor degree of injury to the community may hardly be regarded as depreciating its value, based on the rents that the ignorant and necessitous pay for it. Consequently, the owner has to be bought out at a value that disregards any responsibility he should bear as the possessor of property admittedly a menace to the

community. The ethics of this form of compulsory purchase, interesting though they may be, and the proper fate for slum property, are questions that have long been fairly definitely before the public, and we can leave them for the moment to consider other cases in which the false economy of undue conservatism may be suspected.

That the matter is not solely one of economics will have occurred to many, and must undoubtedly have been brought home to all readers of H. G. Wells's book, "The New Machiavelli," in which, after describing a group of three gaunt, dilapidated, and obsolete houses, he makes their unfortunate owner exclaim: "I don't own these houses, the houses own me." How many a house owner has felt this mood, even though he may not have put it into words! How many a house owner is compelled to give an amount of time and attention to his obsolete and decaying possessions that might, devoted to another business or profession, secure him an almost equivalent income! If he carefully deducted a reasonable wage for time expended, how often would the balance left to represent the return on his capital show a ridiculously low rate of interest! Even admitting the popular taste for house property, we find a general feeling of disillusionment and a sense of burden weighing on a majority of those who have invested in any but good-class modern buildings.

In all parts of London there may be seen houses for sale at less than half what they originally cost, even when every allowance is made for the diminishing term of the leases. For, while street upon street is occupied in some way utterly different to that for which the buildings were originally planned, it is obvious that there must be more or less of makeshift by the tenants, and consequently some compensating reduction in rents. Thus from both the landlord and the tenant is an unnecessary expenditure of effort demanded, and it is this continual waste of energy that is so often disregarded in estimating the value of existing property. The tenant might, for example, be justified in paying 20 per cent. more rent if he could find a well-arranged home in the area to which he is limited, while the landlord would naturally be content with a lower rate of interest if his property gave him comparatively little trouble.

Much has been laid at the door of our leasehold system, and it cannot be denied that it often acts as a deterrent to a rational treatment of obsolete buildings; but, at the same time, the numbers that have passed through their first lease and are running through their second, third, or fourth indicate emphatically the instinct against re-modelling or rebuilding if tenants can possibly be found who may manage to adjust themselves to the inconveniences of a habitation built in entire disregard of their mode of life.

We would not desire to give the impression that all old property is necessarily unsuited to modern requirements. Many of the fine old houses of Mayfair and Bloomsbury are quite capable of adaptation to the needs of the present day, but further out in the Victorian suburbs there is a mass of

property, not too well built, that can only be kept in use by a disproportionate output of energy and expenditure. It is this class which demands careful investigation with a view to forming a decision as to whether it would not be far wiser to undertake extensive rebuilding schemes. Ground landlords might help in accepting reasonable terms for the extinction of existing leases, and in granting a new tenure, so that the present obsolete buildings may be replaced by convenient accommodation; while, if all the proper reductions are made for the futile labour now involved in occupying and maintaining these obsolete premises, it will be found that rebuilding would more often be justified than is at present imagined.

In the United States a building is "scrapped" without hesitation as soon as it is considered in the least out of date, and, though the conditions here are very different and preclude our following this example in its entirety, there can be no doubt that we incline to the other extreme and preserve our buildings when social and even economic considerations would justify their destruction.

The matter is one of grave import to London and our other great cities, and we commend it to the serious attention of our landowners and holders of property. Put in brief, our contention is that it has never been studied on a really broad and comprehensive basis, and that such a study might materially modify the general view as to what is worth keeping and what it would be politic to replace.

MODERN ARCHITECTURE IN THE EAST.

DURING Mr. John Begg's absence on leave the work of preparing the report for the year 1910-11 on architectural work in India has devolved on Mr. Crouch, who was well known in London before he took up the post of Consulting Architect to the Government of Bengal. In his report Mr. Crouch reiterates the complaint made by Mr. Begg that there was an insufficient allowance of qualified assistants to cope with the amount of work in hand.

It may be due to this that so much of the official architecture in India appears to be so trite and uninspired; but we very much doubt if this is the real reason. The present education of the European architect tends to alienate his sympathies from all modes of expression not based on the traditions of Greece and Rome, and it is very rare to find the man whose sympathies are broad enough to throw off the predilections that have been drilled into him and start afresh to absorb impressions coming from an entirely different source.

In a country so vast as the East Indies it is inevitable that the native traditions of workmanship and decoration must be relied on in the execution of the great majority of the buildings undertaken, and if these conflict with the conception of the architect the result cannot but be chaotic and unsatisfactory. We ought, therefore, to recognise native workmanship as an essential factor, and, as there is a strong and definite artistic tradition with numerous skilful exponents still in

existence in the East, the important architect will achieve far finer results by basing his conceptions on this than trying to impose alien and exotic forms on the native craftsman.

We might instance the recent acceptance of the Byzantine style as a vehicle for imaginative expression as an example of the architectural suitability of Oriental manner as a basis for the personal expression of the artist, and in like manner the very definite characteristics of the architecture of Southern Asia in no way preclude the note of personality so essential to modern architecture in its latest developments, provided the architect is the master and not the servant of the style in which he elects to work.

Mr. Crouch's report complains that many able designs have suffered in execution by undesirable alterations at the hands of the Public Works officers in charge of the work. This points to failure in organisation, but it also gives a hint that even at headquarters there may not be a full appreciation of the methods and traditions. In the administration of such an extensive area as that of our Indian possessions it is almost inevitable that there will be too much red tape, and that the mechanism of government, with all its rigid rules and regulations, will militate against freedom and the intimate study of local materials, workmanship, and conditions so essential to the production of really modern architecture.

NOTES.

The British School at Rome.

THE chorus of appreciation with which the scheme for the establishment of a British Centre of Study in Rome has been received colours the outlook of those who so long have been interested with optimism hitherto unknown. It seems that at length a way has been found and that a school not less worthy of our national prestige than the Commemorative School of Architecture will soon be inaugurated and on its way to the fulfilment of our desires. Professor Blomfield points out in a letter to the *Times* of November 23: "More than our generation will, of course, wanted to bring about such results, and as happened over 200 years ago when the French School at Rome, there are some [but must we be so sure?] mistakes—disappointments; but it will be a great thing to have made a start, and to have taken a step which may in the future have a far-reaching influence, steadying the erratic and disordered methods of our modern architecture."

Direction of Students.

THERE is one consideration which presents itself relevant to the proposals for a Centre in Rome, and that is of the precise extent to which students will, by statute or practice, be subject to authority and control as regards their work. We know that in the course of the Royal Institute of British Architects there has been growing a feeling that students do not contribute as much as they easily might (and with benefit

oneselves) to the common stock of hard and research. A student wins his—the Soane, maybe—and wanders to the accustomed shrines vowing to do much and see what he may, and turns with many, or not so many, related drawings and sketches, very pretty in themselves, it may be, but more than out of work which has been measured and remeasured (naturally, for is presumably the best), and, probably, of no real use as a contribution to our fund of exact and definite knowledge. How much better, it is said, that the student, instead of meandering the beaten track, or, if his temperament dictate, into the many blind alleys the bypaths of research, should, for part of his time at any rate, suffer restriction, or, more likely, gladly accept inspiration and assistance, to the end that he may do something which is of definite value to the architectural community as well as to himself! And it seems to us that, with the nucleus of control which the proposed School will provide, that there is considerable likelihood that this opinion will grow in strength and ultimately prevail.

Danger of Control. AND, seen from this point of view it seems right enough. Under intelligent co-operation, organisation, and management, there would soon accumulate such a store of record that the student of a little while hence would search in vain for something really worthy of a year or even a month of his young life. And there is this to be added—it is the crux of the danger—that by just so much as the student's task becomes useful for the aggregation of such a mass of knowledge, by just so much does it tend to become more irksome and consequently valuable to the student himself. At first undoubtedly it need not be anything of the kind. But it is not difficult to foresee developments that would reduce that state of affairs. For instance, the fund of record as it grew would come to have value for comparative purposes, and zeal on its behalf would consequently indicate that drawings would be to constant scales and in standard media. Again, stress would be reasonably laid upon the archaeological aspect, and so on. Finally, as we have said, the work which the student would find to be of value as sustenance to his individual temperament would become scarcer and, in cases, not to be found. In short, the tendency would be to lose sight of the fact that existing indentments were by their founders intended to help the keen men to the development of presumably hopeful and, as we hope, individual abilities and tastes. Precisely how far this tendency should be developed and exactly to what extent it could be enforced would depend on the interpretation which a court of law would place upon the terms of the founder's will in each instance.

Necessity of Freedom. THERE exists a type of mind—and we cannot say definitely that it is the most valuable—to which the mere presence

of control, however exercised and to whatever end it be directed, is so galling as to vitiate any efforts which it may be induced to make. There are individuals to whom it is a psychological necessity in their earlier years that they have some freedom just to "louge," in the phrase of Mr. Bernard Shaw concerning himself. It is really dangerous to admit this fact perhaps in public print, and we do so only in duty bound at the first scent of danger to its due recognition. It is by no means certain that the best method of piercing to the essentials of a period, or of the art of architecture as a whole, is to study in detail some one work or two, or even to grind hard at many. That method may produce a Cockerell, but not necessarily an Elmes—a Palladio perhaps—but consider the vagaries of Christopher Wren. And some of the better men to-day know this, and it is on them and their memories of a vagrant youth that the student in need will have to rely. A man may go about seeing with roaming eyes and get the spirit of the thing without so much as a sketch, though he may lack that ability to transfer detail which has been the bane of the architecture of our century. It is for this man as much as for those multitudes of others that open studentships are intended by their founders.

"Official Architecture" in Glasgow.

ARRANGEMENTS in connexion with the reconstruction of the old Tontine building referred to in our issue of November 10, page 538, were advanced a stage further at the meeting of the Glasgow Corporation on the 23rd ult., and we regret to notice that it is in the direction so vigorously condemned by the President of the Royal Institute in his recent address. The proposal before the Corporation was to appoint the City Engineer as architect for the reconstruction of the Tontine area affected by the recent fire. We presume that what is really meant is that the City Engineer will see that the buildings are properly constructed, while some unnamed subordinate on his staff will put in the architecture. Surely Glasgow architects must feel that this reversal of the normal order of things is in itself an insult added to their injuries. It is some small consolation to know that this proposal did not pass without opposition, but the old arguments of a "capable staff," and "why go outside and pay 5 per cent.?" carried the day against a counter-proposal to invite competitive schemes from city architects. The Lord Provost, while refusing to support either side, rightly pointed out that this was an important scheme, as it dealt with the old cross, the historic centre of the city, and everything possible should be done to secure the best result. We fear that the preliminary steps do not promise well.

PICTURE EXHIBITIONS.

At the Leicester Galleries there is an excellent collection of pictures, designed as illustrations for books, by three of at once the most popular and most able artists of to-day in this genre. The meticulous method and fancy of Mr. Dulac are well known; not less

so the quaint wit of Mr. Arthur Rackham. But we are perhaps mistaken in claiming equal popularity for the work of Mr. Cayley Robinson. There can, however, be no doubt the present exhibition will bring him into line in public estimation with his confrères of the adjacent rooms. It is fortunate in many ways that Mr. Cayley Robinson was chosen to illustrate "The Blue Bird" of Maeterlinck. His pictures do not possess the elements of ready wit and impish gaiety which are so immediately attractive in the illustrations of Mr. Dulac or Mr. Rackham. He is, to begin with, not a humorist, and his personal way of seeing things, his delicate poetic fancy, no less than his grasp of abstract decorative design, are not qualities likely to be immediately apprehended. Appreciation of art of this type is a matter of somewhat slow growth and personal discovery, liable to develop, when it is found, almost into a cult. His illustrations of "The Blue Bird" will lead the popular mind as well as that of the collector in the right direction; and they will initiate a younger world, among whom the illustrated book will have a wide circulation, in a charm not less convincing than that conveyed by the play itself. But the qualities of Mr. Cayley Robinson's art are shaped to larger issues than book illustration. The decorative form, balance of design, and spacious disposition of tones, as well as the knowledge indicated in his work of architectural features, will appeal particularly to architects. It would, indeed, be pleasant to find an artist of his decorative aptitude engaged upon some important mural scheme, instead of seeing the rare opportunities of this kind which are offered surrendered to a type of pictorial expression better adapted to book illustration or the anecdotal easel affair. Mr. Cayley Robinson, it is true, has his mannerisms, but so had Puvion de Chavannes and the majority of past masters, who interpreted a generalised and delicate apprehension of things in terms of colour and considered forms.

The exhibition of the London Sketch Club is as lively and as casual as usual. Mr. Frank Reynolds, Mr. John Hassall, and Mr. Lawson Wood are pleasantly humorous in their various drawings designed for the illustrated weeklies or for the books of Charles Dickens or Mr. Kipling. Mr. Edgar Downs's animals are interesting, but his play of sunlight through a lacework of leaves has scarcely arrived beyond experimental study. The pastels and other paintings of Mr. George Sheringham are among the most successful on the walls, illustrating a pretty fancy and attractive colour schemes. Mr. Dudley Hardy is admirably represented in his later and more serious mood; while the pictures of Mr. Montague Smyth, Mr. Edgar Pattinson, Mr. Joseph Harker (whose scenery for "Kismet" and other plays has often enough suggested a gift for the more circumscribed medium of water colours), and Mr. Lionel Edwards deserve to be signalled out in this modest, tentative sort of show.

KING JOHN'S PALACE, SOUTHAMPTON.

At Southampton strenuous efforts are being made to preserve the historic Tudor house and King John's Palace, one of the best existing specimens of Norman domestic architecture, the owner of which has offered the property to the Southampton County Borough Council at a much lower price than could be obtained were the property taken down and re-erected in America. The Council have accepted the offer, and a Local Government inquiry is being held as to a proposed loan of £200 to purchase the buildings. There are many points of interest in the ancient palace, not the least being the chimney of the old fireplace, which consists of a flat projection on four corbels just beyond the beautiful double window. The rough chestnut beams of the roof have remained since the time when King John stayed in the building during his many visits to Southampton.



CONVERSAZIONE.

The annual Conversazione of the Architectural Association was held on Thursday, November 23, at Tuf-ton-street, and was a complete success.

The guests, numbering upwards of 500, were received by Mr. Gerald C. Horsley (President) and Mrs. Horsley on the first floor gallery of the Museum. Mr. Gordon Craig had lent for the occasion four models for stage scenes for "Macbeth," and about thirty drawings for stage scenes, which were on exhibition. The models, which were illuminated, proved one of the greatest attractions of the evening. Mr. Craig, who for the last eight years has travelled and worked in Germany and Russia, has done much to influence theatrical productions in Europe generally, and in view of his proposed new theatrical school, his exhibits were of interest.

There were some excellent drawings on exhibition by Messrs. W. S. George, Charles Gascoyne, Philip Hepworth, W. J. Palmer Jones, W. Valcott, and H. F. Waring, and the quality of the work shown more than compensated for the limited number of exhibitors.

The following exhibits were also kindly lent—Jewellery (Mrs. Margaret de Castro), jewellery and enamels (Mr. and Mrs. Arthur Gaskin), silver and repoussé work (Mr. Harold Stabler), silver and jewellery (Mr. J. Paul Cooper), old Chinese bronzes (Mr. Matt. Garbutt), bronzes (Mr. Arthur T. Bolton), candlesticks (Mr. Ernest Gimson), pewterwork (Messrs. Walter Churcher and Mr. George Jack), art metalwork (the Artificers' Guild, Ltd.), tapestries (Messrs. Martin van Straaten & Co.), embroidery and silks (Messrs. Warner & Sons).

The Camera, Sketch, and Debate Club filled the first floor gallery with work by members of the club. The club exhibits were of a very comprehensive character, including water-colours, oils, photographs, and some etchings by Mr. George Vey, jun.

The Museum and adjoining rooms were tastefully decorated, and music was provided during the evening by Pitman's Blue Imperial Orchestra. Refreshments were served on the ground floor by Messrs. Harrods.

Amongst those present were—Mr. Leonard Stokes, F.R.I.B.A., Sir Ernest George, A.R.A., Mr. Gordon Craig, Mr. T. E. Colcutt, Mr. Arthur Keen, Mr. W. Curtis Green, Professor Baresford Pite, Mr. H. P. G. Maule, Mr. Arthur T. Bolton, Mr. H. A. Hall (Hon. Secretary), Mr. W. J. Tapper, Mr. F. W. Pomeroy, A.R.A., Mr. H. V. Lancheester, Mr. A. N. Prentice, and many others.

ORDINARY FORTNIGHTLY MEETING.

An ordinary general meeting of the Association was held on Monday at No. 18, Tuf-ton-street, Westminster, S.W., Mr. Gerald Horsley, President, in the chair.

Mr. Hall, Hon. Secretary, announced that the Athletic Club Dance will be held in the Wharfedale Rooms on December 8, at 9 p.m. Tickets, including supper, price 7s. 6d. each.

The following gentlemen were then elected as members—i.e., Messrs. W. Allison, Wandsworth Common; G. B. Booth, Bayswater, W.; and M. H. C. Doll, Much Hadham, Herts.

The President announced the following reinstatement—i.e., Mr. G. A. Humphreys, Mostyn Estate Office, Llandudno.

The President also announced that there is a vacancy on the Council, and that the Council

will nominate a member to fill this vacancy at the next ordinary general meeting, when it will be possible for members to make further nominations.

The President proposed a vote of thanks to Mr. Francis Sills, for kindly presenting to the A.A. a copy of "Ye Solace of Pilgrims" (description of Rome in 1450). This was agreed to.

Mr. Arthur T. Bolton then read a paper, entitled "Thoughts on Jacobean Architecture," which is given on pp. 639-650, accompanied by some of the illustrations shown by the lecturer.

The Chairman announced that the next meeting would be held on December 11 (combined meeting with the Camera, Sketch, and Debate Club), when a paper by Mr. Alan E. Munby, M.A., A.R.I.B.A., would be read, entitled "Is the Texture of Materials a Fetish?" The meeting then terminated.

ARCHITECTURAL SOCIETIES.

Leeds and Yorkshire Architectural Society: Annual General Meeting and President's Address.

The annual general meeting and smoking concert of this Society was held at the Queen's Hotel, Leeds, on November 16. The President (Mr. Sidney D. Kiteon, M.A., F.R.I.B.A.) occupied the chair, supported by the Lord Mayor (Mr. Wm. Nicholson). The proceedings opened with the President's address to members and Associates of the Society, followed by the distribution of prizes to the students.

The President, in his address, said:—"Firstly, a few words about ourselves. The Society has lost this summer the services of its Secretary, Mr. Ralph Thorp, who has gone to Canada. Short as the time was in which he served as Secretary, he won the good opinion of all our members by his courtesy and efficiency, and our good wishes follow him. Mr. Whitehead, who has done such good work for the Sketching Club, has kindly consented to take his place. I believe he will not fall below the high standard of achievement set by his predecessors.

The year that has just passed has not been an important one in the history of our Society. But happy is the Society which has no history, and the object of this Society is not to make history, but to go quietly on its way as a permanent and unpretentious guardian of the interests of architecture and architects in this province. It is in no sense detrimental to the Society that its name has not been in evidence in the newspapers, and I assure you that it has done a considerable amount of quiet, unseen, but none the less useful work during the session.

There are points, however, of a more public nature which our Council might well take in hand in the near future, such, for instance, as a firm protest against the increase of official architecture, which is becoming a menace to practising architects, and which is costing the ratepayers and taxpayers—as was so ably pointed out by Mr. Leonard Stokes in his Presidential address at the R.I.B.A. the other night—considerably more than if the work were put out in the fairer and more reasonable way to rate-paying and tax-paying architects. The public ought to be made to realise that they are paying more for what we may be pardonably permitted to term a worse article.

Another point which has been discussed by our Council more than once is the growing evil of builders who make their own plans with one hand and hold out their caps with the other to architects to give them work. It is a cardinal fact of elemental justice that a man cannot eat his cake and have it, and if a firm and united attitude were to be adopted by members of this Society it is reasonable to suppose that those misguided builders could be made by practical means effectively to see the errors of their ways. And this brings me to the time-worn subject of Registration, a subject which requires no arguments in its favour here. I own that in my early days I was opposed to Registration, but experience has taught me to be a thorough-going advocate of that policy. It is unnecessary at this time of day, when every trade and profession has formed itself into a trade union, to point out the advantages which would accrue to our profession by a

closer union and a sterner discipline. I ought to be impossible for an employer to bargain for a less remuneration than the modest minimum prescribed by the Institute or for an architect to agree to such an arrangement. It ought to be impossible that architectural work should be done—and ill done—that—by builders, plumbers, rent-collectors and undertakers.

The Institute is moving slowly but surely towards this achievement. The policy was ably advocated more years ago than probably he cares to remember by one of our ex-Presidents, Mr. J. W. Connon; and it has been endorsed, I think, by everyone else who has occupied this chair. Nearly 2,000 Licentiate have already been enrolled in the ranks of the Institute. Thus a most useful element of solidarity has been obtained in furtherance of the policy of Registration.

The amalgamation of the Society of Architects with the Institute seems likely to be accomplished in the near future. This state of man-like arrangement has meant self sacrifice and the exercise of much tact and common sense on both sides. The fact that such qualities have been so fully shown in these negotiations is a guarantee for the successful termination of the campaign for the statutory recognition of architects.

The most important thing of all in connection with the profession is the provision of education. Twenty years ago architectural education outside the usual office routine of pupillage hardly existed. Much progress has been made since then, and the proposed establishment of a British School of Art and Architecture at Rome is another step in advance. Hitherto the winners of student ships have wandered, sketch-book in hand, over Europe, filling up their time, doubtless very pleasantly, but with little or no direction or continuity in their efforts. Whether Rome at the present day is the best place for the study of living architecture is, I think, open to doubt. But if we cannot go to Rome, it is open to all students in this province to attend the architectural school at the Leeds School of Art, where, under the direction of Mr. Coombs, a very thorough and sympathetic teaching is to be obtained.

This year the work of our students is of a high quality, but there is not enough of it. Consequently, the competition has been poor although the work which has been submitted has in nearly every case reached a sufficiently high level as to demand and to obtain a prize.

The silver medal for measured work goes to Mr. Kruckenburg. The competition in Design Class has been very keen. The subject of the prize for construction was a difficult one, and elicited two very elaborate designs for a staircase and door in reinforced concrete. The prize goes to Mr. Voeckel for a carefully-constructed and well-worked-out set of drawings. Mr. Chadwick's measured sketches form a very fine record of work ably rendered, and the series of details from the interior of Kirkstall Grange are particularly good. There was only one competitor for the essay prize. The subject was "Yorkshire Building Stones and Their Influence upon Design." The work of Mr. Palmer, who is the author of the only essay sent in, has been adjudged to be of sufficient merit to obtain the prize.

A review of the state of employment among our members during the past year is not an inspiring one, and we have to record the departure from the province of some of our number. Several firms of contractors, with honourable records behind them, have ceased business. The feeling of confidence that was in the air up to a few years ago seems to have died away; people are marking time and hesitating to invest money in building enterprise. Nor are the census returns of the current year for Leeds of an inspiring nature. It is not good news to hear that the population of the city is increasing now at a less rate than it was this time a hundred years ago. There were then probably not five architects practising in Leeds, while now there must be ten times as many. There is, however, no reason why a manufacturing town should grow indefinitely, and there are many reasons why it should not. And, after all, a city which contains nearly half a million of inhabitants is a respectable unit. Athens at the height of her artistic achievements, Florence, in the Renaissance, never

lined so many inhabitants; and it is full if the London of Sir Christopher Wren counted many more. It must be added that in artistic matters Leeds has progressed during the past year. The opening of the Art Gallery, the suppression of Curatorship, and the abolition of municipalities may save a few hundreds of rates, but one is tempted to think that ere economies bought at too dear a price. No care for the few remaining buildings in older Leeds will deeply regret the treatment at present being portioned out to Red Hall. As usual, the literary men have not spared us. In an ode to the statue of the Black Prince the poet alludes to Leeds as "a haunt of misery loom," while a sonnet in the *Spectator* does hard things to say on the ugliness of the city. In a recently published guide-book *West Riding* I find the following passage:—"It is questionable whether other city, except perhaps Sheffield, is to the railway traveller such a scene of hideousness as is offered to those descending from the Bramhope tunnel, leaving left only a few minutes behind the green and open valley of the Wharfe, out towards the east along the filthy Aire, from the summit of the viaduct, to cross the Kirkstall-road." These things do not make pleasant reading, but we all see ourselves as we are. It is inevitable that the visitor who approaches Leeds expecting to find a Vienna or a Paris should be disappointed. Nor has the claim yet been made of this city that it is a health or pleasure resort. But it is a great manufacturing city, where nearly half a million people live and work probably as hard as in any other city in the world. And by reason of the closeness of their lives sunshine and pure air could be all the more necessary to their need. Only recently a professor, speaking of Sheffield, told his audience that smoke was vital for the production of the best steel. Surely, as Mr. Gladstone once said with nice touch to another matter in a place not far yards from where we now are, "the best of civilisation are not yet yet." And it is difficult to believe that we could not produce the best steel by a cleaner method if it was made worth while of science to do so. People have been so used to what is really a reproach to civilisation, or they are so busy in making it, that they have come to regard our laden atmosphere with regret, certainly, but with resignation. The architect is from this nuisance perhaps more than other member of the community, for they are disinclined to put up good buildings which they know they will be shrouded in within a year after erection.

Planning in our province has not yet got out of the region of talk into that of action. A very generally expressed wish has been, however, shown that the new city districts so rapidly growing up round the city should be something better than the old mining villages to which we are accustomed.

Halifax a competition, with prizes given to a local member, has been held for the plan for improving the laying-out both of town and suburbs. It is much to be desired that a similar competition should be held in Leeds. There seems an opportunity when additional municipal accommodations so urgently needed, and when the city is embarked upon an extension scheme, that the approaches to the Town Hall stands in its inky cloak as a sort of blot among the buildings of the world, and by its own surroundings—should be cleaned and improved. No street alteration of kind has taken place here since the Town Hall was built, and surely it is high time that the setting to the fabric which our eyes wrought so well should be taken in hand.

There is now the chance for the correlation of some of the more important of our buildings. The obvious truth cannot be often repeated that one fine building does not make a fine city; but the wise grouping of fine buildings not only doubles the value of those buildings themselves, but provides the only elements out of which a fine city is made. In an interesting paper which the City Engineer, Mr.

Lancashire, read to the Association of Municipal Engineers last summer upon the development of Leeds he said, "Although recent improvements have resulted in the possession of many streets and buildings of which Leeds is justly proud, it cannot be argued that reconstructions are more, if as satisfactory as construction properly planned in the first instance, even apart from the extremely heavy extra cost. One is bound to realise that, in some cases, there has been no design beyond street widening for better travelling facilities, no motive beyond the wider streets and the better buildings which have followed the widenings; and some of the fine new buildings have been erected where it is impossible to appreciate properly the full beauty of the architect's creation."

Probably the most important building enterprise in this neighbourhood at the present time is the City of Leeds Training College and its fleet of attendant hostels. There every care has been taken with the disposition and grouping of the various buildings, and this forethought will, I think, result in an interesting and satisfactory layout. There is every chance, too, that the suburb which will grow up around it will be carefully and effectively planned.

For the first time there is a Lord Mayor of Leeds who is connected with the building trades, and we may rest assured that Mr. Nicholson, who is an hon. member of our Society, will do what he can to promote its best interests during his term of office.

Now nothing remains but to wish you a pleasant and prosperous year. The happiest life that a man can lead is an architect's life if his interests and sympathies lie that way. And, I would add, the happiest architects are the provincial architects, for they usually have a greater range and variety in their work, and have more varied lay interests than is possible to Londoners. And, to crown all they have the open country at their back with all that it means to a man's health and spirits. Nor does it seem needful now that a traditional style is once more beginning to emerge from the chaos of clever eclecticism, and now that opportunities for study are so much greater, that the design of provincial architects should be measurably inferior to that of their London brethren.

Although it is quite certain that we cannot all be men of genius, we can, at any rate, see to it that our buildings shall fulfil the sound and common-sense requirements of Inigo Jones and be "solid, masculine, and unaffected." We can put the best that is in us into our work, play the game, and mind our own business, and thus ensure happiness not only to ourselves, but to those who come in contact with us."

The Lord Mayor proposed a vote of thanks, in which he remarked upon the necessity for the development of the city upon more broad and architectural lines. It was as easy, he said, to build well-designed buildings as to build "mere structures."

Mr. J. W. Cannon seconded the resolution, which was carried unanimously.

An entertainment, arranged by Mr. E. C. Spruce, followed.

Manchester Society of Architects: Paris and Vienna.

On November 22 Mr. P. Abercrombie, of the Liverpool School of Town Planning, gave a lecture on the contrasted development of Paris and Vienna. Speaking of Vienna first, he gave plans showing the development from the old medieval town which still remains in the centre. He explained how the old line of fortification was adapted to form the Ringstrassen, and how, in laying out this street, open spaces were arranged opposite to and between their public buildings. With maps of the district he showed the open belt of country, well wooded and picturesque, which surrounds the town, and which is to be left unbuilt on for ever. The factories were placed on the south-east of the town; the prevailing north-west wind thus carrying away the smoke.

Turning to Paris, the Roman cross roads had formed the basis of the modern town. In all the modern improvements, both of Napoleon and Haussmann, the vista had been the principal motive. In obtaining this the individual buildings were of necessity subservient to the general lines, and in this way

Paris had always been more fortunate than Vienna.

Mr. Abercrombie had many excellent slides of the buildings and streets. A discussion followed, in which Messrs. Barker, Agate, Worthington, Corbett, and others joined.

Liverpool Architectural Society: XVIIIth Century Architecture of Bath.

A paper on "XVIIIth-Century Architecture of Bath" was read on the 20th ult., before the Liverpool Architectural Society by Mr. Mowbray A. Green, of Bath, Mr. A. Thorneley presiding. Describing the condition of Bath in the end of the XVIIIth and the early part of the XVIIIth century, he said it was cramped, dirty, and ill-fitted to receive the gentle and noble people who came so willingly to submit themselves to the drastic treatment which the doctors prescribed. The city, standing upon an area of about 37 acres, was scarcely larger than it had been in medieval days, but it was full of interesting houses of the Elizabethan and Jacobean periods.

Of the builders of the early years of the XVIIIth century little was known, but in 1707 George Trins began to build just outside the north wall of the city, and there still remained some interesting houses, in one of which General Wolfe was staying when he received, in 1759, orders to proceed to Quebec. John Wood, a Yorkshireman, born in 1704, came to Bath at the age of twenty-one, with large ideas as to rebuilding Bath, and the description of many and various buildings involved in the lecture showed how much Bath owed to him architecturally. Speaking of Wood as he was in 1764, some three months before his death, the lecturer said, he had been a busy man, commercially successful, but one who left behind him such a record of buildings as few could boast of. Twenty-seven years previously he had found Bath emerging from the squalor of a mediæval city, and in the interval named he had seen erected some of the most palatial groups of which any city could boast. The planning of the part of Bath to which he devoted much attention marked the genius of a man who had laid out his schemes with a sense of nobleness and fine effect. Masterly and bold in design, he grouped up the façades of his buildings so as to produce harmony and a feeling of proportion, and he added to the interior that ingenuity of planning and decorative design which had made them so full of interest to people of the present day.

Aberdeen Architectural Association: Structural Ironwork.

Mr. Harbourn MacLennan delivered a lecture on "Structural Ironwork and Steelwork for Architects" before the Aberdeen Architectural Association in the Northern Arts Club, Aberdeen, on the 10th ult., Mr. James B. Nicol, President of the Association, occupying the chair.

Mr. MacLennan said:—"Before turning to the practical part of my lecture dealing with details of construction, illustrated by diagrams and working drawings, it may be interesting to give a brief outline of the rise of iron and steel construction (some might like to add to this the decay and fall thereof), as, if we are to believe the concrete-steel designers, the art of steel and iron construction as applied to buildings is on its last legs. I do not agree with this view. Concrete-steel construction has undoubtedly a great future before it, but I would venture to say that in the space of sixty years or so since iron construction was introduced there has not been sufficient time to develop this latter method either as regards the scientific disposition of material or as regards the strength and nature of the materials at command. Our knowledge of the proper proportioning of steel materials is as yet far from complete, as witness the recent disastrous failure of the Quebec Bridge, where the best engineering skill in America proved insufficient. With respect to the improvement on our present materials, signs of this are already to hand in the increasing use of nickel steel, which is some 50 per cent. stronger than ordinary medium steel, while retaining in great measure the qualities which have rendered mild or medium steel so adaptable to the needs of the engineer in the past.

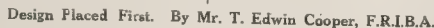
I am not concerned to uphold or belittle steel construction as against steel-concrete, or ferro-concrete, as it is usually called, because, I think, there is plenty of room for both: but

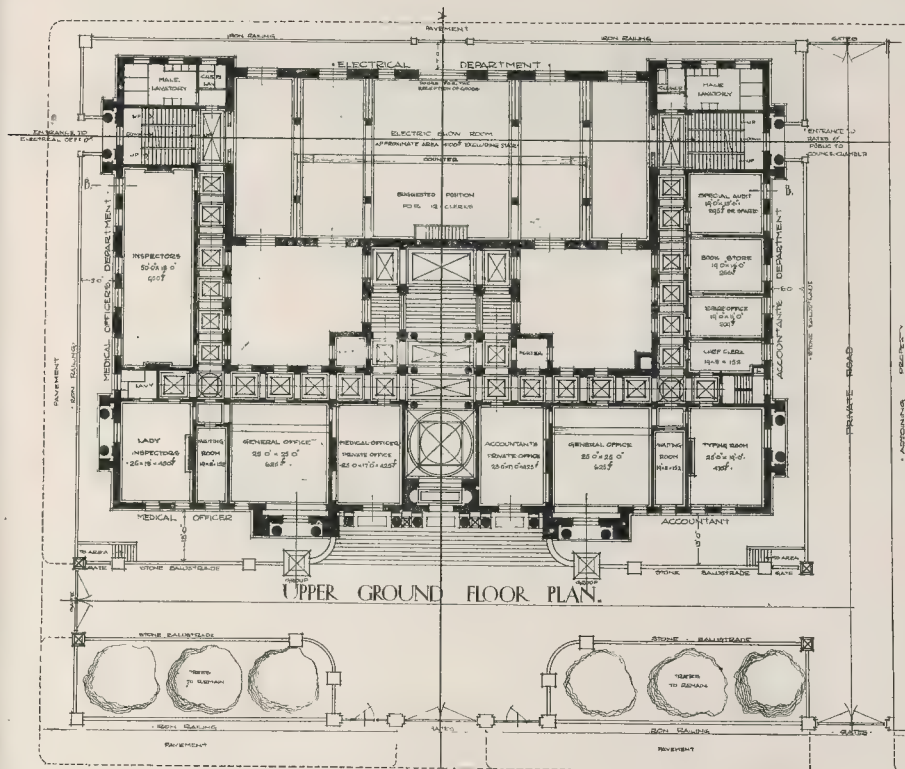
Present-day students who have innumerable handbooks to choose from do not realise the difficulties which architects had to contend with twenty-five years ago, when, as a rule, the best information to be had was a table of "safe" loads on iron beams, the safety of such being an elastic factor due

American designers, having new problems to tackle, have gone about their work in a manner somewhat different from that which obtains in our country, and their methods differ from ours in many details; but signs are not wanting that a certain similarity is growing up between the steelwork executed in both countries, and this is to be ascribed in some measure to the many excellent American textbooks on steel construction lately put on the market. The English text-book writer has to some extent neglected the architect's requirements, who has been compelled in consequence to turn to the engineer for aid. This is a matter which I hope will soon be remedied; the engineering profession owes a great debt to such Englishmen as Hodgkinson and Fairbairn, and such Scotsmen as Gordon, Rankine, and Clerk Maxwell, whose

In the discussion which followed the Chairman, Mr. Clyne, F.R.I.B.A., Mr. Barr A.M.Inst.C.E., and others took part.

It is easy to deplore such a state of things but more profitable to seek a cause and possibly a remedy that is within our power to adopt. It appears to us that this position is largely created by those who are not sufficiently competent or sufficiently mature and experienced to deal with the problem in a really satisfactory manner.



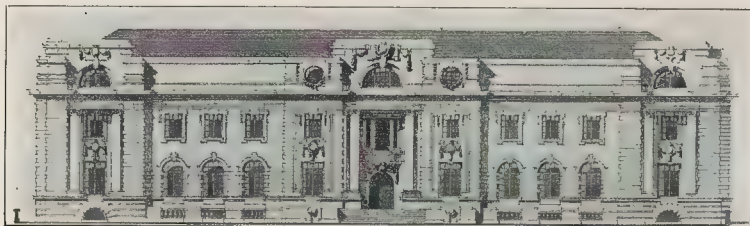


Design Placed First. By Mr. T. Edwin Cooper, F.R.I.B.A.

in the total number of competitors we eliminate all those who never had a chance of success the reader would, we fancy, be found a sufficient reasonable number against which no complaint could be made.

the acknowledged masters with so good a chance of success? Would the average young painter challenge Sargent to paint a head or the ambitious young professional billiard player challenge Stevenson on equal terms? And if he did, how

often would he win? Would he think the chance was good enough? Possibly he would if the judging of billiards or of the painting of a head was conducted on the same lines as the judging of architecture. As long as the present uncertainty prevails



Second Premiated Design, by Messrs. Wallis & Bowden : North Elevation.

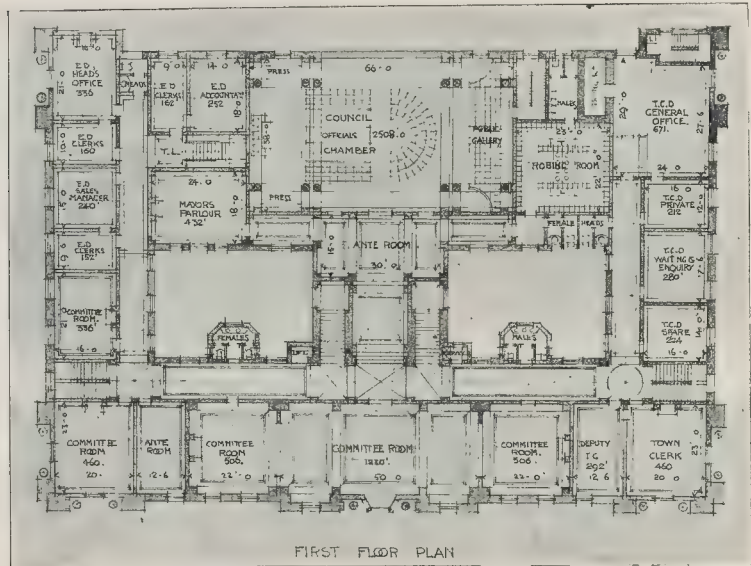
ough there are many causes of the failure of immature or incompetent designs, it is probable that the element of chance is the greatest. So many unsatisfactory awards have been made in recent years, so many bad designs have won, that the whole thing has to be regarded as a lottery in which one may one day draw a prize if he competes often enough. "You never know your luck!" is the usual way of expressing it.

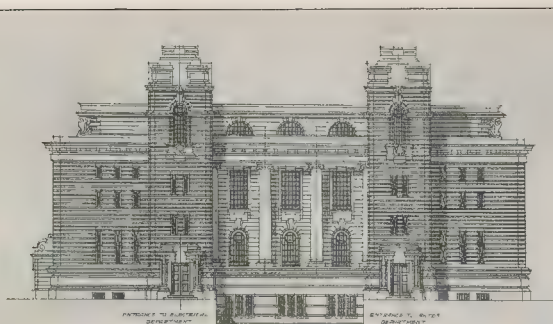
The point is, you should know your own luck. You should be quite sure that you have no chance whatever unless you have one of the best designs.

The present state of affairs is little more than a scandal. In what other profession, art, or craft, or calling—does incompetence or inexperience daily challenge

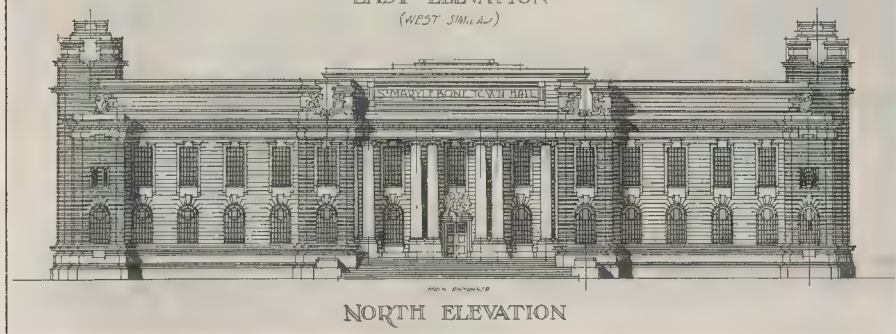


Second Premiated Design, by Messrs. Wallis & Bowden : East and West Elevations.



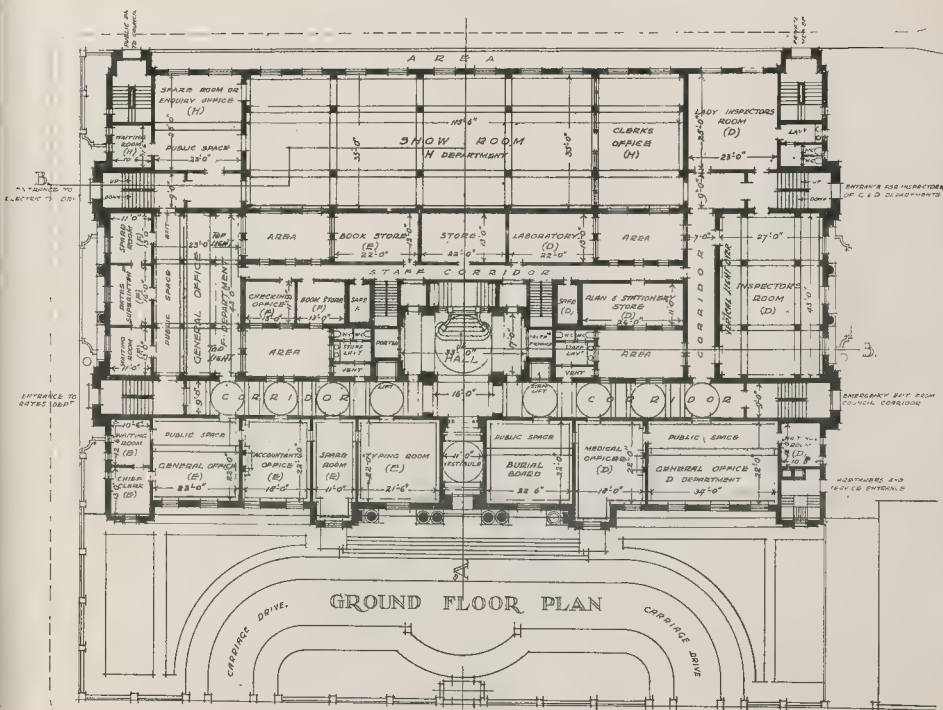


EAST ELEVATION
(WEST SIMILAR)

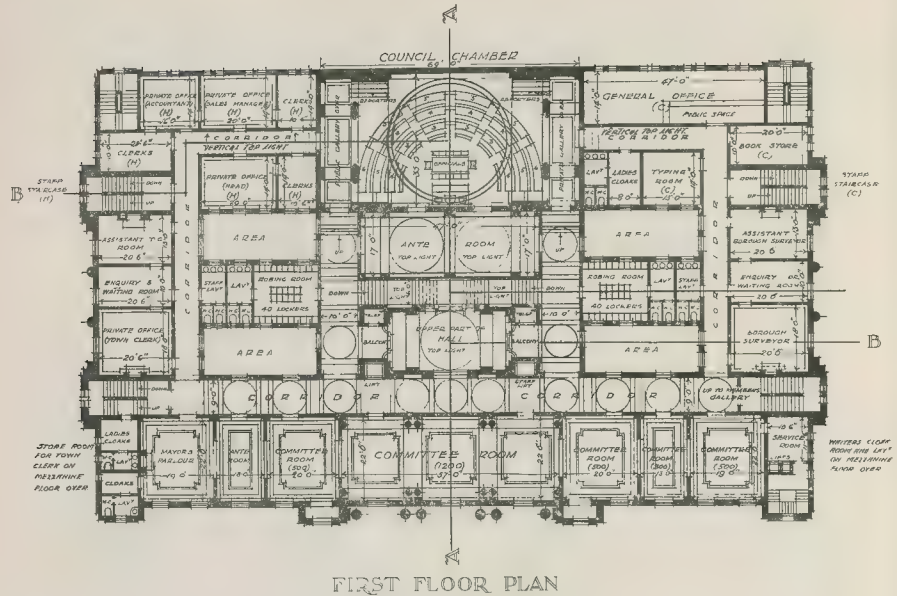


NORTH ELEVATION

Third Premiated Design, by Messrs. North & Robin.



Third Premiated Design, by Messrs. North & Robin.



FIRST FLOOR PLAN

Third Premiated Design, by Messrs. North & Robin.

made on some general consistent idea, with the result that quite one of the best designs has won.

Too often we see cases in which, even if the best design is selected for the first place, the other premiated designs appear to be selected at random and, at times, to contradict one another. Here we are pleased to see that the assessor has followed out his idea, apparently made up his mind as to the right treatment of the scheme, and then selected the best of those that adopt this general treatment, ignoring others which may possibly be more able designs in their way, but not in the way which the assessor thinks is the right one.

This is an intelligible position for the assessor to take up. It tends to emphasise the importance of obtaining the right idea, of concentrating on the general lay-out of the scheme; while it tends to discourage the useless elaboration of designs which have not been properly thought out in the hope of winning by the aid of attractive elevations or details.

We think that most of the competitors

after seeing the designs, will agree that the general treatment selected by the assessor is the right one. But, even though they have their own ideas as to the proper treatment of the scheme as a whole, we think they will all agree that out of those selected Mr. T. Edwin Cooper's is decidedly the best. It is not quite so easy, however, to see why the other premiated designs were placed in their particular order and why they were preferred to others on the same lines. Possibly there are determining factors which can only be appreciated after a more exhaustive analysis.

A point which appears to have governed the whole scheme was the need to provide adequate and equally distributed light to the unusually large electrical showroom with the clerks' office beneath it, and to do this without unduly sacrificing general convenience of arrangement. The most obvious way to avoid making these rooms too long and narrow, or too lofty, was to light them on both sides. One of the chief points of the winning design is that in this matter it has arrived at the most satisfactory

compromise between the claims of light and of the convenience of direct approach to the Council Chamber and direct communication between it and the large committee-rooms. This has been effected without unduly sacrificing the size of the stair to that of the lighting areas, while providing Councillors' robing-room and lavatory exactly in the right place.

It is interesting to note the different attempts to adjust these two conflicting interests of convenience and light. Messrs. Wills & Anderson, for instance, by disconnecting the front from the back block in the basement and ground floors obtain more equally distributed light to the large rooms, but, feeling the necessity of a direct approach from the entrance to the Council Chamber, they bridge over the central area on the first floor with a small ante-room.

The effect, however, is rather cramped, and it would perhaps have been better if they had definitely made up their minds one way or the other. This is what has been done in the design by Messrs. A. R. Jemmett & G. T. McCombie.



Fourth Premiated Design, by Messrs. Warwick & Hall : East Elevation.



Fourth Premiated Design, by Messrs. Warwick & Hall: North Elevation.

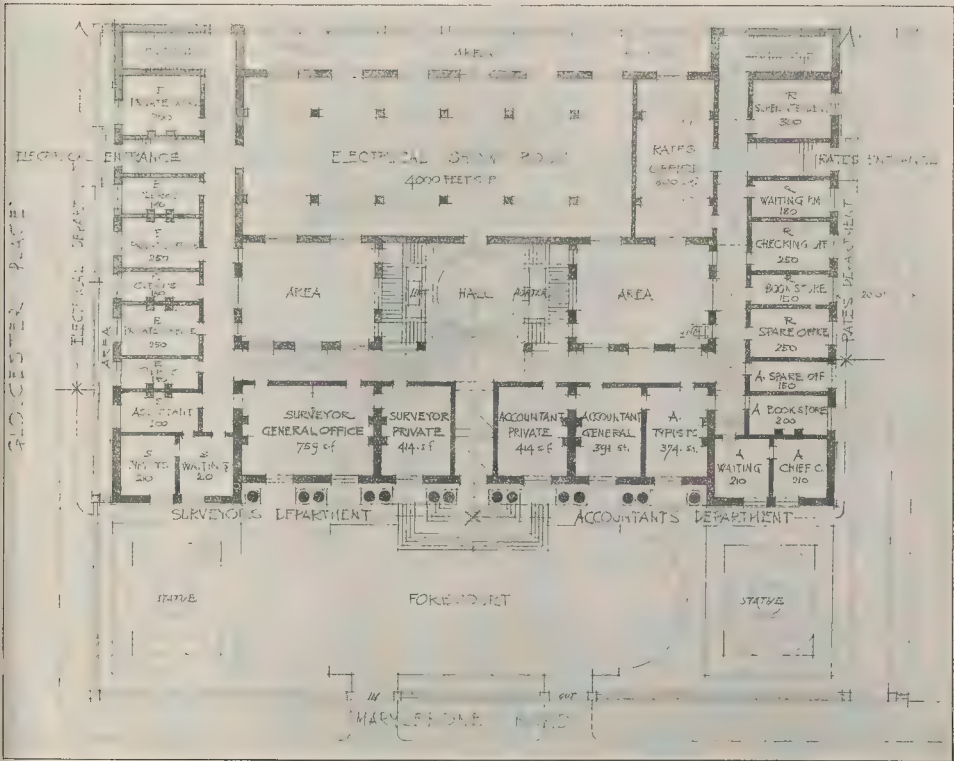
Here the desirability of light and air has evidently been thought more important than a direct access to the Council Chamber. The central block is therefore dispensed with and the two internal areas become one central service court with a drive in from the streets, giving access to boiler-house, stores, and housekeeper's apartments. This destroys the direct approach to the Council Chamber, though for reception purposes it still has an adequate connexion with the suite of committee-rooms.

No doubt it was considered that the interior light to the large rooms and the exterior of the building generally did not

justify so unusual a departure from generally accepted arrangements. One unsatisfactory feature of this competition is the absence of characteristic expression in so many of the otherwise most able designs. There seems to be a tendency to strive for the most imposing, almost we might say the most pretentious, effects, quite regardless of the fact that they may not be appropriate to the occasion and may not exactly distinguish the particular character of municipal offices as distinct from any other type of public building.

It may be one of the general disadvantages

of the competitive system that it encourages a tendency to shout in order to make oneself heard, but the more the essential elements of design are understood and acted upon by assessors the less this necessity will be felt. In this case the tendency leads to the production of designs which at first glance look more like the central halls of law courts or museums than municipal offices, with the result that they mislead and fail to express the characteristic sentiment of the subject. A building should not only impress the spectator, but impress him in the right way. Sheer size of columns or other features



Fourth Premiated Design, by Messrs. Warwick & Hall: Ground Plan.

not at all sure that there is any general fire on the part of those gentlemen who ought to be considered eligible to be placed on the established list, with the consequent sacrifice of income which would be demanded by regulations.

The Late E. A. Abbey, R.A.

Terms of his testamentary dispositions late Mr. Abbey has bequeathed Chelsea Lodge, Tite street, Chelsea, to the members of the Royal Academy for the use of the resident conditionally upon the house being named Abbey House, and that his bronze by E. Onslow Ford, his portrait of his wife and a work by Saint-Gaudens shall be placed there permanently, with the plate and effigy. He leaves to the Royal Academy Library at Morgan Hall, Fairfield, for the use of Abbey House or the Academy a sum of £6,000 for the maintenance of the house. Some of his own works are left to the British National Gallery, the Art Museum, Boston. The *New York Tribune* says it is stated that Mrs. Abbey will observe her husband's wishes, though the fact that she has survived him makes these bequests.

British Museum Appointments.

The Trustees have appointed Mr. Henry Beauchamp Walters, Bell Scholar in the Chancellor's Medalist, and Class I. Classical Tripos, Cambridge University, and author of many books upon Etruscan and Greek art, to be Assistant-Keeper in the Department of Greek and Roman Antiquities; Mr. George Francis Hill to be Assistant-Keeper in the Coins and Medals Department; Mr. Julius Parnell Gilson to be Keeper of Manuscripts. Mr. Hallett, the official guide of the Museum, has been appointed to conduct the conduct of parties of visitors at 3 o'clock daily.

London Museum.

A section of the Museum will be devoted to a permanent exhibition of models, drawings, and playhouses and theatres, with portraits, play-bills, and similar memorabilia. Mr. King has secured a copy of R. Morden and Lea's panoramic "prospect," 8 ft. in length, London and Westminster in 1715, as seen from intervals from the Surrey shore, and a section of curiosities of XVth-XVIIth centuries date recently discovered in Pater-noster-row; Mr. R. M. Walker, has lent his section of Battersea and Chelsea enamels china, where one case alone is valued at 25,000.

King Edward Memorial for London.

A meeting of the Advisory Committee of the fund for providing a memorial to King Edward in London has just been held at the Mansion House. The Committee had before it the suggestions and designs of Mr. Frank Mackenall, A.R.A. (sculptor), and Mr. Edward Lutyens (architect) for a memorial of his Majesty, in bronze and Portland stone, to be erected at the Piccadilly end of the Broad Walk in the Green Park. Mr. Lutyens explained by the two artists as to the site, cost, and extent of the memorial and their treatment of the work, the Committee unanimously expressed their general approval of the scheme. The Committee at their meeting also considered and rejected a proposal for a site at Hyde Park, which Professor Ashhead, of the University of Liverpool, had suggested as an alternative to the Broad Walk scheme. Sir Percy Strong was requested to see the Chairman of the London County Council and ascertain to what extent the Council would be prepared to co-operate with the Corporation and the Committee in dedicating the adwell Market site as a public garden and playground for the inhabitants of East London.

The Institution of Water Engineers.

The first (winter) general meeting of the newly-incorporated Institution of Water Engineers (established as the British Association of Waterworks Engineers in 1896) will be held at the apartments of the Geological Society, Burlington House, W., on Friday 4 Saturday, December 8 and 9. The proceedings will commence on Friday at 4 p.m. and on Saturday at 10.15 a.m. The following papers have been promised for reading a discussion, in addition to the other items in the programme, viz. :—(1) "Waterworks

Management," by Messrs. Easton Devonshire and William Matthews; (2) "Portland Cement on Public Works," by Mr. G. Thornhill Edwards; (3) "The New Waterworks for Skegness," by Mr. Percy Griffith.

The Institute of Metals.

The London Meeting of the Institute of Metals will be held at the Institution of Mechanical Engineers, Storey's-gate, Westminster, S.W., on Tuesday, January 16, and Wednesday, January 17, 1912. The meeting will commence on Tuesday afternoon, when the President-Designate (Professor W. Gowland, F.R.S.) will deliver his inaugural address on the subject of "Copper and Its Alloys in Early Times." The whole of Wednesday, January 17, will, if necessary, be devoted to the reading and discussion of papers. In connexion with the annual general meeting, the third annual dinner of the Institute will take place in the evening of Tuesday, January 16.

St. Peter's Church, Bethnal Green.

At a sitting in St. Paul's of the Consistory Court of London on November 16, Dr. Tristram, K.C., Chancellor of the Diocese, granted a faculty for the erection of a new choir vestry to communicate with the existing clergy vestry, and by means of a cloister or covered way, with the church, at an estimated cost of 500l. It is also proposed to expend 100l. in adapting a space between the choir stalls and lobby as a side chapel, and in setting up an oak screen or dwarf wall at the entrance into the choir, and also to make a new entrance on the north side of the church. The alterations will be carried out by the architect, Mr. E. T. Dunn, of Ilford, and in harmony with the present structure, which was built, in Hackney-road, in 1840-1, after designs by Vulliamy.

Cannon-street Terminus Hotel.

The South-Eastern Railway Company have taken over the terminus hotel, and intend to effect some extensive alterations and improvements of the structure. The project includes the redecoration, in a scheme of white and gold, and the re-lighting of the Great Hall and of the Pillar Hall, a masonic temple above the Great Hall, re-lighting of the corridors, and the addition of a restaurant and grill-room, with new entrances from the station and the forecourt. The Great Hall is reputedly the largest in the City.

Soho Works, Birmingham.

Mr. George Tangye, of Heathfield Hall, has presented to the Birmingham Corporation the unique collection of Boulton, Watt, and Murdoch relics, formerly in the Museum of the Soho Foundry, which he purchased some years ago. Amongst the models are Murdoch's rotary engine and pump, Watt's engine indicator, and the Newcomen engine in section; there are many drawings, letters, and MSS., including the letter-books of Boulton's and Watt's business correspondence, and an interesting letter written by Watt in 1787 to the Abbé de Calonne. The gift supplements many valuable presentations, of Wedgwood ware and pictures, to the Museum and Art Gallery, Birmingham, on the part of Mr. George Tangye and his brother, the late Sir Richard Tangye.

Craftsmen and State Aid.

Mr. C. R. Ashbee's new book, entitled "Should We Stop Teaching Art?" will be based on the recent findings of the Departmental Committee of the Royal College of Art. Mr. Ashbee will plead for the organisation of craftsmen throughout the country, and Rossetti, Sandys, Millais, and others.

COMPETITION NEWS.

New Municipal Buildings, Marylebone.

The following awards have been made by the assessor in this competition :—

1. No. 15, Mr. T. Edwin Cooper, F.R.I.B.A., 12, Gray's-Inn-square, W.C.
2. No. 79, Messrs. Thomas Wallis & J. K. Bowden, Queen Anne's-chambers, Westminster, S.W.
3. No. 39, Messrs. North & Robin, 99, Regent-street, W.
4. No. 13, Messrs. Warwick & Hall, 13, South-square, W.

An illustrated review of this competition appears on pages 628-634.

Nurses' Home, Bolton Infirmary.

This building will be a memorial to King Edward VII. The competition is confined to architects practising as principals within the borough of Bolton. Three premiums are offered, namely, 30l., 20l., and 10l. The assessor is Mr. John B. Gass, F.R.I.B.A., of Bolton, and designs are to be delivered to the Town Clerk by February 3 next.

Teachers' Training College, Glasgow.

The Provincial Committee have selected the following six firms to compete in the limited competition for the above :—

Messrs. H. & D. Barclay; Mr. Andrew Balfour; Messrs. John Burnet & Son; Mr. Henry Higgins; Messrs. Honeyman, Keppie, & Mackintosh; and Messrs. Macwhannell, Rogerson, & Reid, all of Glasgow.

We understand that they will each receive a honorarium for their services.

Public Hall, Leicester.

This competition was won locally by Messrs. Stockdale Harrison & Sons, architects, St. Martin's, Leicester, and tenders are now advertised to be in by December 8 next. The assessors were Mr. E. George Mawbey, Borough Surveyor, and Mr. S. P. Pick, County Surveyor, both of Leicester. We have received a circular letter convening a public meeting for last night (November 30) in opposition to the scheme, the principal objections taken to the present scheme being stated as follows :—

- (1) The unsuitability of the site.
- (2) The inadequate accommodation.
- (3) The objectionable acoustic properties.
- (4) The undesirable and out-of-date method of seating.
- (5) The safety of the public has not sufficiently been considered.
- (6) The hall, which is intended to be used for dancing, bazaars, exhibitions, etc., cannot be suitably seated for concert purposes according to modern ideas.
- (7) No estimate has been placed before the public showing the cost of maintenance and repairs, which will be unduly heavy owing to the temporary nature of the building.
- (8) The Corporation is exceeding its powers by depriving the public of open spaces.
- (9) That the present financial position of the town does not warrant the expenditure for such a purpose.
- (10) That there is no real demand from the general public for the hall."

BOOKS.

In the March and Borderland of Wales. By A. G. BRADLEY, with illustrations by W. M. Meredith, and maps. (London: Constable & Co., Ltd. 1.—Shropshire, Herefordshire, and Monmouthshire. 5s. net. 11. Glamorgan and Gower. 3s. 6d. net.) The author of these entertaining volumes explains in his preface that when the question arose of issuing a second edition of "In the March and Borderland of Wales" it was decided to divide the book, which consisted of two somewhat distinct districts. The lesser part dealing with Glamorgan has, therefore, been issued separately and concurrently with the Shropshire volume, and, in our opinion, wisely, the two volumes dealing with distinct districts and forming volumes easy to handle and peruse. These are not guide-books, but are the records of the "leisurely wanderings" of the author, and, though of more direct interest to local readers, they contain so much entertaining matter that they deserve to be read by a wider public. The author's method has been to visit various towns and villages in the districts dealt with and describe them topographically and from the point of view of the antiquary and archaeologist; and, in the hands of a careful and painstaking writer like Mr. Bradley, the method, provided the locality dealt with has sufficient history and character, cannot fail to have an instructive interest. The pages of these two volumes, describing now some architectural work, or some local historical fact, then some diverting experience or anecdote, bear evidence of considerable research on the part of the author, and we offer him our thanks for the

pleasure the perusal of his work has afforded us.

The illustrations by Mr. Meredith add to the interest and value of the volumes, though they are a little unequal in merit.

The Art of Polychromatic and Decorative Turning. By G. ASHDOWN AUDSLEY, L.L.D., and BERTHOLD AUDSLEY, Demy 8vo. With 21 plates. (London: George Allen & Co., Ltd., Rathbone-place. 4s. 6d. net.)

THIS volume is one of "Allen's Technical and Art Manuals," and is a "practical manual for the professional and amateur turner," the authors of which are architects by profession. They have written a clear and useful account of an interesting branch of the wood-turner's art, and the diagrams and illustrations are of practical value. Included in the volume are the following chapters:—"Coloured Woods Suitable for Decorative Turning," "Decoration by the Process of Studding," "Decoration by the Process of Lamination," "Decoration by the Process of Geometrical Inlaying," and the "Practical Application of Polychromatic and Decorative Turning."

The Principles of Planning Buildings. By PERCY L. MARKS. (London: B. T. Batsford. 12s. net.)

THAT this book has found an appreciative public is evident from the fact that a third edition, revised and enlarged, now makes its appearance. It contains much practical information as to the requirements, arrangements, aspect, and so forth, of different types of modern buildings that must be extremely useful to the general practitioner; particularly when he is suddenly called upon to display a knowledge of a class of building with whose requirements he happens to be unacquainted.

From this book he may obtain a general idea of what the author calls the "general scope of a building," its main characteristics, and the chief points which govern its general disposition. Such information being often most quickly conveyed to an architect by means of a plan which embodies it, the illustrations of plans of different classes of buildings are a useful feature which have no doubt contributed largely to the success of this publication.

It is this aspect of the book which we consider most valuable, for it is probable that there always will be a demand for such information, if reliable and up-to-date.

When, however, the author deals with general considerations, and such abstract questions as symmetry or axiality, his method and his results seem to us to be less satisfactory. Indeed it is a question how far this book may be said to redeem the promise of its title, which, after all, is a somewhat comprehensive one that might well lead us to expect a book of quite a different character.

The principles of planning are the principles of organic architectural design, and they have no necessary connexion with the requirements of any particular class of building. They are the guiding principles a designer follows, the method by which he works, the way he sets about it in order to obtain an architectural plan. An architect may be a most accomplished planner, without necessarily knowing the requirements and proper arrangements of a single modern building as built to-day. On the other hand, it is possible to have the requirements of every known class of building, down to the minutest detail, at one's finger-ends without knowing anything about architecture or understanding the most elementary principles of design.

The two things are separate and distinct, although often confused, and we frequently hear of architects being referred to as experts on some aspect or other of planning because they happen to know the arrangements of, say, a public bath or a brewery almost as well as does a bath superintendent or a brewer.

The requirements of a building are in reality the requirements of the people who inhabit it. They are formulated more by those who use a building than by those who design it. A knowledge of these requirements is not so much a knowledge of architecture as a knowledge of life and of human nature. However convenient it may be to have such information in a handy form in the bookcase, it cannot, after all, entirely take the place of information acquired first hand from the actual people themselves.

Such information must, of course, be obtained

before the architect can put his principles into daily practice, but it is more a matter of fact than a matter of principle, more in the nature of the material which we mould to our purpose by the aid of the principles of planning.

Our purpose is to create architecture, and the question of principles comes in when we ask ourselves how we shall proceed to use this material, this knowledge of life, in such a way as to produce it.

In this, which we hold is the crux of the whole matter, the author does not seem to afford us much help, or to be altogether in touch with the advance of modern thought. We cannot honestly say that we think his remarks are of any special value. With some we are unable to agree, while those with which we do agree must surely have been obvious truisms to all serious students for the last quarter of a century; although it is, no doubt, possible that there are still a few survivors from a former period to whom they may appeal with all the force of newly-discovered truths.

We do not wish to appear to quarrel with the author for not writing a book which he did not intend to write, but when he adopts so attractive, comprehensive, and ambitious a title, and states that "the leading idea is to show the principles of planning [the italics are the author's] in close theoretical and practical association," the title is only saved from appearing pretentious and misleading by assuming that the author attaches a different meaning to the word "principle" to that generally accepted.

The book, being published by Mr. Batsford, is all that can be desired in quality of paper, printing, and general get-up.

BOOKS RECEIVED.

CHEMISTRY. By Bertram Blount and A. G. Bloxham. (London: Charles Griffin & Co. 14s.)

PILGRIM LIFE IN THE MIDDLE AGES. By Sidney Heath. (London: T. Fisher Unwin. 10s. net.)

THE ART OF POLYCHROMATIC AND DECORATIVE TURNING. By G. A. Audsley and B. Audsley. (London: G. Allen. 4s. 6d. net.)

INFECTIOUS DISEASES AND THEIR PREVENTIVE TREATMENT. By E. C. Seaton, M.D. (London: Hodder & Stoughton. 7s. 6d. net.)

LEGAL COLUMN.

Land Valuation: Forms IV. and VIII.

The Court of Appeal have now delivered considered judgments in the two cases, *Dyson v. Attorney-General* and *Burghes v. Attorney-General*. The history of these two cases will be found in these pages—*Dyson's* case in the *Builder*, December 24, 1910, and November 10, 1911, and *Burghes's* case in the *Builder*, May 19, 1911. In *Dyson's* case objection was taken to Form IV. This form was issued under sect. 26, subs. (2), of the Finance Act, which provides that "Any owner of land, and any person receiving rent in respect of any land, shall, on being required by notice from the Commissioners, furnish to the Commissioners a return containing such particulars as the Commissioners may require as to the rent received by him and as to the ownership, tenure, area, character, and use of the land, and the consideration given on any previous sale or lease of the land, and any other matters which may properly be required for the purpose of the valuation of the land, and which it is in his power to give. . . ." and the section imposes the liability to a penalty if the return is not made within the time specified in the notice, not being less than thirty days.

In *Dyson's* case the points raised were threefold:

I. That less than thirty days were allowed him in which to comply with the notice.

II. That the returns were required to be made to some person other than the Commissioners.

III. That the requisition numbered (2) in respect of land, of which he was owner and also occupier, was *ultra vires*. This requisition was—"If the person making the return is also the occupier, state the annual value, i.e., the let to a yearly tenant, the owner keeping it in repair."

The Court unanimously held that the fact that at least thirty days had not been allowed rendered the notices invalid, and consequently that all the notices served upon

the plaintiff were merely wastepaper. This really disposed of the case; but the Attorney-General invited the Court to express an opinion on the other points. They held—in this respect reversing the Court below—that the order to deliver the forms to a specified officer did not invalidate the forms, but that the requisition contained in (2) was in the case of an owner in occupation, unauthorised, since it related not to information prescribed by the section, but was intended to extract an admission, and that its presence in the form when delivered to an owner in occupation rendered the whole form invalid.

The Court unhesitatingly held this to be a case in which the Court should exercise its discretionary powers to make a declaration that the forms were unauthorised, and they commented on the contract upon the inconvenience and expense imposed upon a member of the public, from the forms having been issued contrary to the Act.

Burghes's case turned on sect. 31 of the Act—"Every person who pays rent in respect of any land, and every person who as agent for another person receives any rent in respect of any land," shall furnish to the Commissioners the name and address of the person to whom he pays rent or for whom he receives rent. Burghes was a rent collector, and he was required to give the particulars in regard to "any land situate within or partly within the parish or place of Plaistow South." It was held by the Court of Appeal that, as the form related to no specific piece of land, this form was also mere wastepaper.

Two subsidiary points may be mentioned in connection with this latter case. The notice also contained a demand that the person should furnish "the descriptions and precise situation of the lands in respect of which rent is received." The Attorney-General admitted that the Commissioners had no right to demand this information, and the Court commented severely on the forms being allowed to issue by the Commissioners without the lands being specified. Secondly, it is to be observed that under sect. 31 the penalty is only threatened if a person "willfully fails to comply with the provisions of the section," not as in the case under sect. 26—"fails to make a return within the time specified."

The Master of the Rolls intimated that under sect. 31 he might have hesitated to make a declaration holding the form invalid, but the allowance of twenty-nine days in place of thirty being the only ground of complaint.

We have endeavoured fully to explain these decisions, as a very large number of property owners and land-agents are affected by these forms. It is, however, to be regretted that from the necessities of the case these judgments have come so late in the day, as some millions of notices, not in compliance with the Act, may have been issued involving owners of property in serious expense in obtaining professional assistance in answering questions which should never have been put. These two cases illustrate the importance to the public of access to the Courts being secured where Acts of Parliament have to be construed, and the dangers attending the uncontrolled action of officials.

Nuisance from Noise.

As very few cases are brought before the Courts in respect of nuisance from noise it is somewhat extraordinary that the case of *Becker v. Earl's Court, Ltd.*, which we noted in the *Builder*, November 17, should so soon have been followed by another case. Page and others v. Watt and others, heard before Mr. Justice Darling on November 24. The plaintiffs were the leaseholders and the occupiers of certain premises at Kingston-on-Thames, and they complained of nuisance from noise from a skating-rink next door. The nature of the noise complained of were somewhat similar to those in Becker's case, viz., a mechanical organ, the use of a siren and megaphone, and occasionally a brass band. On the granting of the license the defendants had undertaken to take certain precautions, and had done so, but it was alleged that these had not proved efficient in deadening the noise. The neighbourhood was not a very high-class residential district, the houses being small houses let to weekly tenants and having a railway and a tramway close to them; but the plaintiffs recovered damages, although an injunction was refused.

The damage to the leaseholder was the difficulty in securing tenants; but from the report of the case it is not clear what damages were proved by the tenants. In Becker's case, in the Chancery Division, it will be remembered, very strict evidence was required as to the injury to health complained of. It may be doubted whether noises of the character complained of in these two cases should be permitted at all in a residential district of any sort or description.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. Ward White, Chairman, presiding.

ENLARGING OF SCHOOLS.—It is proposed to enlarge the Berner-street School, to provide accommodation for an additional 348 places. At Brixton-hill Industrial School for Girls also to be enlarged, at an estimated cost of £500., to provide accommodation for 150 girls.

PARKS.—A sum of 100l. is to be spent in connection with the formation of an old English garden at Battersea-park, including drainage, water supply, and the formation of baths and a pond. The house known as "Higglewood" in Norwood-park is to be demolished and the site laid out as an addition to the park.

THEATRES, &c.—The following drawings have been approved by the Theatres and Public Halls Committee:—Hammersmith (King Rink, Brook-green-road—erection of a stand). His Majesty's Theatre—ventilation arrangements.

OFFICE AND GARAGE.—In a report of the Building Acts Committee it was stated that it is proposed to erect an office and a garage on the eastern side of Streatham-hill, Wandsworth, on the conditions that the building to be completed within eighteen months. **NEW TRAM BAYADE STATION.**—Owing to inadequacy of the accommodation at the station in High-street, West Norwood, it is proposed to erect a new station at an estimated cost of 15,000l. A site for this purpose is to be obtained, at a cost of about 500l., adjoining the tramways depot in Norwood-road.

CORRESPONDENCE.

The R.I.B.A. Examinations.

SIR,—In these times, when the desirability of registration of architects is more and more surely it is a pity that many unnecessary obstacles are presented to architects desirous of joining the Institute.

Being desirous of sitting for the direct examination for architects in practice, I inquired information and advice as to the Institute's requirements, and requested an interview with one of the head officers of the Institute. A message, however, was sent to the effect that the clerk in charge was quite competent to deal with all questions connected with the examinations. Surely this statement scarcely encourages practising architects to join an Institute whose officials hedge about by such circumlocution. Comparisons are odious, but one cannot help comparing this attitude with that of the Surveyors' Institution, where the humblest student may be sure of instant access to, and advice from, the Institution's officials.

F.S.I.

Licentiatehip R.I.B.A.

SIR,—The letter of "Enquirer" on the above subject and the necessary *ex qualifica* as imposed by the "powers that be" will, I am quite satisfied, appeal strongly to many of our younger practising architects, who would willingly join this Licentiate Class, and so have all the necessary qualifications and proved ability, yet are lacking in years.

I know of many instances, and, with your permission, will quote my own as an example, scribbling myself under a *nom de plume* that may be no indiscretion.

I have been in active practice as an architect for the last six years, and have carried several important public buildings, ranging in cost from 8,000l. to 13,000l. Within the last two years I have entered for seven competitions for various public buildings; I have won three out of these, being elected first in each instance, and have been pointed to carry out the work. I am told that three out of seven is not a bad rate.

I am at present engaged in preparing the working drawings, etc., for two public buildings of some importance, one of which I won the competition, the other was given to me on reputed merit alone.

Naturally readers will say, "Why not sit the examination?" My answer is this,

and I know there are many similarly situated, that I am forty-five minutes by rail from the nearest large town where I might expect to find the necessary tuition facilities; and I do not think the oldest and most experienced Fellow of the Institute will deny that to again pass the examination he would have to submit himself to careful and more or less prolonged study. Now, my time is fully occupied, and has almost always been with work which I carry out with the help of one junior assistant only; there are people who are dependent upon me and my efforts. How can I find the time or inclination for hard study, with the possibility of failure after several months' work?

I am twenty-eight, and very sore about it.

SECOND ENQUIRER.

Official Architecture.

SIR,—The injustice of the so-called temporary employment complained of by "Edenway" and other architectural assistants in H.M. Office of Works extends far beyond them. The Office of Works is riddled by temporary employees, many of whom have spent the better part of a lifetime there, and are entrusted with a large measure of technical and financial responsibility. In an Editorial Note you have already called attention to this so far as it relates to the clerks of works.

One would think that the First Commissioner of Works must be aware of this long-continued injustice. Ten years' service is better than any examination to determine if a man is suitable for permanent employment, and is also a fairly safe indication that there is sufficient work to warrant the Department in making a permanent appointment. The justice of this must appeal to the First Commissioner, so that the injustice of depriving men of well-earned pensions will be removed without resource to combinations and agitations.

With regard to the statement that official architecture is costly, I do not think that there would be much difficulty in proving that the Office of Works obtains better bargains in their buildings than the average outside architect; but I wish to emphasise the fact that this is largely due to the efforts of the men who are turned off at sixty without a pension.

X.

Cost of Joinery.

SIR,—I have read a letter signed "F. M." in your issue of last week with reference to the above. The statement "F. M." makes may or may not be so in London. This I do not wish to argue or discuss here, but, in my opinion, if the facts are as stated, would it not be fairer and more sportsmanlike for him ("F. M.") to privately and confidentially inform his late firm, with data, of these unscrupulous and dishonest transactions, to enable them to thoroughly thrash the matter out and put a stop to same?

I do not think in the long run that "F. M." would lose by this, and, undoubtedly, at the same time, building trade and joinery works' employers have to thank your correspondent for bringing this matter to light.

I only hope that should any of this kind of thing be happening in London (besides the case mentioned above) that "F. M.'s" letter may induce others, like himself, to go straightforwardly to the heads of the firms and inform them of these malpractices.

JAMES F. PARKER.

The Port of London Offices Competition.

SIR,—As one of those who, in season and out, both at the Institute and in the Press, have urged the limitation of unnecessary work in architectural competitions, may I be permitted to appeal to Sir Aston Webb in respect to the Port of London Offices Competition?

As the preliminary drawings will only be seen by those officially connected with the competition, there is no need for many drawings, and particularly for the perspective view, which will entail a collective expenditure of probably 1,000l. Further, one elevation and one section would be sufficient to indicate the external and internal treatment.

In the Marylebone competition Mr. Hare has gone on right lines in eliminating perspectives, but I venture to think he might have gone one further and spared the pro-

fession the 180 unsuccessful details which have probably cost their authors some 900l.

I would respectfully ask our assessors to bear in mind what I have before urged, viz., that for preliminary purposes plans alone are necessary.

L.

Shop Front in Dover-street, Piccadilly.

SIR,—In the article in your last week's issue on the works of Mr. Walter Cave, architect, I notice an illustration of a shop front designed by him in Dover-street, Piccadilly (now demolished). May I be allowed to point out that there is a very similar original old shop front, built in the George's time, still existing on the east side of the Haymarket, London, near Piccadilly-circus; it is now occupied as a tobacconist's.

Doubtless all *habitués* of the West-end know this delightful old shop, but many of your country readers may be unacquainted with it.

HORACE T. BONNER, A.R.I.B.A.

Memorial to King Edward VII.

SIR,—Amongst the various sites suggested I have not seen that one at present occupied by the statue of Achilles in Hyde Park as a likely one.

There could not be much objection or difficulty in removing that memento of the Crimean War to congenial surroundings, say, the War Office end of St. James's Park, and adapting the ground for a memorial to our "peace-loving King."

I venture to think the change would be welcomed and appropriate.

WM. RAINE SELWOOD,
Registrar, Wandsworth Technical Institute.

INTERCOMMUNICATION COLUMN.

Terrazzo Floor.

SIR,—A terrazzo floor laid in a large apartment a few years ago has recently risen considerably in the centre. An examination shows that the terrazzo and floating layer of cement and sand have parted from the concrete bed under, the surface of which appears to be in perfect order and not to have risen.

The concrete bed was composed of ashes and cement, and on breaking it up particles of coal were found in it.

It is alleged that the gases generated by the coal in the concrete bed have burst the terrazzo upwards, but it appears to the writer that any ordinary hair crack would be sufficient to allow any such gases to escape without lifting the floor, and that the effect of such gases—if any would be evident in the concrete.

Can any of your readers explain such a movement, and what effect particles of coal would have in the concrete itself? J.

Hot Water and Galvanised-Iron Cisterns.

SIR,—I should be exceedingly obliged to you or to any of your expert readers who would be kind enough to give me the benefit of their experience in connexion with the action of hot water on galvanised-iron cisterns.

My water supply is derived from a well and the hot water for the bath is collected in a galvanised-iron cistern. The constituents of the water are such that it has a deteriorating effect on the cistern, and in three years' time it works through. This is the length of life of a new cistern which I put in three years ago.

I am told by the builder that there is no alternative but to put in a new cistern, and, if such is the case, I must face the prospect of having to renew the cistern every three years.

I cannot but think there must be some other remedy, and, as I have said, I should be exceedingly grateful for any advice on the subject.

J. A. C.

LIBRARY OF THE VICTORIA AND ALBERT MUSEUM.

The Board of Education give notice that the Library of the Victoria and Albert Museum will be closed from December 12 to January 20 inclusive for cleaning, relighting, and general renovation.

EDITORIAL SUMMARY.

"False Economy" is the title of the leading article, which deals with the desirability both to the tenant and the landlord of destroying obsolete property.

A second article, on "Modern Architecture in the East," is given on p. 624, being a consideration of the factor of native craftsmanship in the design of modern buildings in India.

In "Notes" columns (p. 624) will be found observations on: "Official Architecture in Glasgow"; "The British School at Rome"; "Direction of Students"; "Danger of Control"; "Necessity of Freedom."

Some picture exhibition notices will be found on p. 625.

The Architectural Association Conversazione was held on Thursday last week, and a brief notice will be found on p. 626.

Under "Architectural Societies" (p. 626) brief reports are given of: "Manchester Society of Architects"; "Liverpool Architectural Society"; "Aberdeen Architectural Association"; "Leeds and Yorkshire Architectural Society."

An illustrated review of the Marylebone Municipal Buildings Competition Drawings is given this week (p. 628). In our next issue we shall have other observations to make and give further illustrations of some of the designs.

Book notices (p. 635) include: "In the March and Borderland of Wales"; "The Art of Polychromatic and Decorative Turnings"; "The Principles of Planning Buildings."

Legal Column (p. 636) includes comments on: "Nuisance from Noise"; "Land Valuation: Forms IV. and VIII."

In our Correspondence columns (p. 637) will be found letters on: "The R.I.B.A. Examinations"; "Licentiate R.I.B.A."; "Cost of Joinery"; "Shop Front, Dover-street, Piccadilly"; "Memorial to King Edward VII."; "Official Architecture"; "Port of London Offices Competition."

At the meeting of the Architectural Association on Monday a long and interesting paper was read by Mr. Arthur T. Bolton on "Jacobean Architecture," and a large number of lantern slides were shown. The paper is given in place of our usual Monthly Review (p. 639), where some illustrations in connexion with it will be found. One of our plates is also devoted to some of Mr. Bolton's illustrations.

The annual report of the London County Council in reference to school buildings is noticed on p. 650.

The Building Trade Section (p. 651) includes the following: "Allow or Provide?"; "Unemployment Insurance"; "Cement in Egypt"; "Forced Building Labour in the Middle Ages"; "Projected New Buildings in the Provinces"; "Applications under the Building Acts, 1894-1909," etc.

In Law Reports (p. 654) will be found a report of a case under the London Building Acts.

MEETINGS.

FRIDAY, DECEMBER 1.

Institution of Civil Engineers (Students' Meeting).—Messrs. J. and W. Legg on "Brake-lining Coefficients of Friction." Dr. W. C. Unwin, F.R.S., President, will occupy the chair. 8 p.m.

SATURDAY, DECEMBER 2.

Aberdeen Architectural Association.—Mr. G. M. Fraser on "John Smith, City Architect, and His Work in Aberdeen." 7.30 p.m.
Incorporated British Institute of Certified Carpenters.—Annual dinner, *Isologue Restaurant*, 27, Gornard-street, W. 7 p.m.

MONDAY, DECEMBER 4.

The Royal Institute of British Architects.—Business meeting. Exhibition of photographs of buildings in Italy, Greece, etc. 8 p.m.
Royal Society of Arts (Cantor Lecture).—Professor Vivian B. Lewes on "The Carbonisation of Coal"—II. 8 p.m.
Liverpool Architectural Society.—Mr. W. H. Ward, M.A., on "Renaissance Church Architecture." Illustrated by lantern slides. 6 p.m.

The Society of Engineers.—Mr. Henry Adams on "The Design of Tall Chimneys." 7.30 p.m.
Victoria and Albert Museum (University of London).—Mr. Banister Fletcher on "The Châteaux of the Loire and other French Renaissance Buildings." 5 p.m.

TUESDAY, DECEMBER 5.

British Museum (University of London).—Mr. Banister Fletcher on "Temples of the Ionic Order." Lantern illustrations. 4.30 p.m.
Institution of Civil Engineers.—Paper to be further discussed, "Electric Lighting of Railway Trains, The Brake Vehicle Method," by Mr. R. T. Smith, B.Sc. 8 p.m.

WEDNESDAY, DECEMBER 6.

Royal Archaeological Institute.—Professor T. McKenny Hughes on "Some Sources of Error in Assigning Objects Found in Sands and Gravels to the Age of those Deposits with Special Reference to the so-called Eolijths." With lantern illustrations. 4.30 p.m.
King's College (University of London).—Professor Elsey Smith on "Early Roman Churches." 5 p.m.
Manchester Society of Architects.—Mr. Paul Ogden on "Science and Proportion." 6.30 p.m.
Institution of Civil Engineers. Students' visit to the Liverpool Street Extension Works of the Central London Railway.

THURSDAY, DECEMBER 7.

Society of Antiquaries.—8.30 p.m.
Institution of Electrical Engineers.—Dr. R. Pohl on "National and International Standards for Electrical Machinery." 8 p.m.

FRIDAY, DECEMBER 8.

Aberdeen Architectural Association (in the Northern Arts Club).—Mr. G. M. Fraser on "A Historical Tour in Aberdeen." Illustrated by lantern slides. 7.30 p.m.
Glasgow Technical College Architectural Conference's Society.—Mr. John Crawford on "The Duties of a Foreman Mason."

SATURDAY, DECEMBER 9.

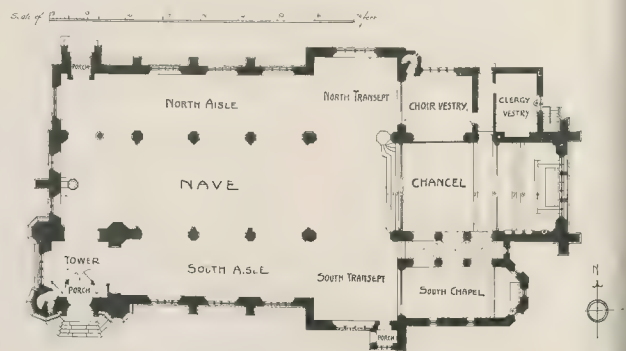
Incorporated British Institute of Certified Carpenters (Carpenters' Hall, London-east, E.C.).—Annual general meeting. 5.30 p.m.

ILLUSTRATIONS.

Church of St. Mary the Virgin, Dorchester.

THIS church has been in course of construction for the past eighteen months in a new district of Dorchester, and is now drawing near to completion, with the exception of the tower, which (but for its lower stage), together with the screens and reredos, has had to be postponed. It will be seen that the plan is cruciform, but without the obstruction to the interior which is inevitable with a central tower; the organ is placed in a spacious chamber over the larger vestry, while the heating chamber is below the lesser. The gallery over the screen is available for a band. The roof over nave and chancel has a continuous barrel vault, 132 ft. long by 40 ft. high, divided internally by the screen and externally by the flèche; the roof of the chapel is similarly vaulted, the arched passage between this and the chancel has a groined vault in stone. The archways of the tower are of the West-County pannelled type, while the jambs and pillars of all others are plainly splayed, the arches only being moulded; the walls are of brick faced externally with Swagone stone, and all dressings are of Monk's Park freestone, and the roofs are tiled. The chancel, which is a special gift, has black and white marble paving and steps. The floor of nave and aisles slopes upwards towards the east, thus making use of the foundations necessitated by the fall in the site.

Mr. C. E. Ponting, F.S.A., of Marlborough.



Church of St. Mary, Dorchester.

Mr. Charles E. Ponting, F.S.A., Architect.

is the architect, and the contractors are Messrs. Hoskings Brothers, of Newbury.

Our view of the interior is taken from the drawing hung in the Royal Academy this year.

The Red House, near Hitchin.

This is a sketch design by Mr. J. Algonne Hallam, representing a house with a good-sized living-room and a small dining-room. The intention was to design a quiet house not relying on detail for effect, and to reduce external paint to a minimum. The bricks would be 24 in. dull red, the roof covered with purple brown hand-made tiles, the casements iron copper plated with lead glazing. The front door would be of oak. The gables on garden elevation would be covered with oak weather boarding.

Jacobean Architecture.

Our illustrations of Bramshill, the Bodleian Library, Oxford, and the porch of St. Mary's Church, Oxford, are in connexion with Mr. Bolton's paper on Jacobean Architecture read before the Architectural Association on Monday (p. 639).

FIFTY YEARS AGO.

From the *Builder* of November 30, 1861.

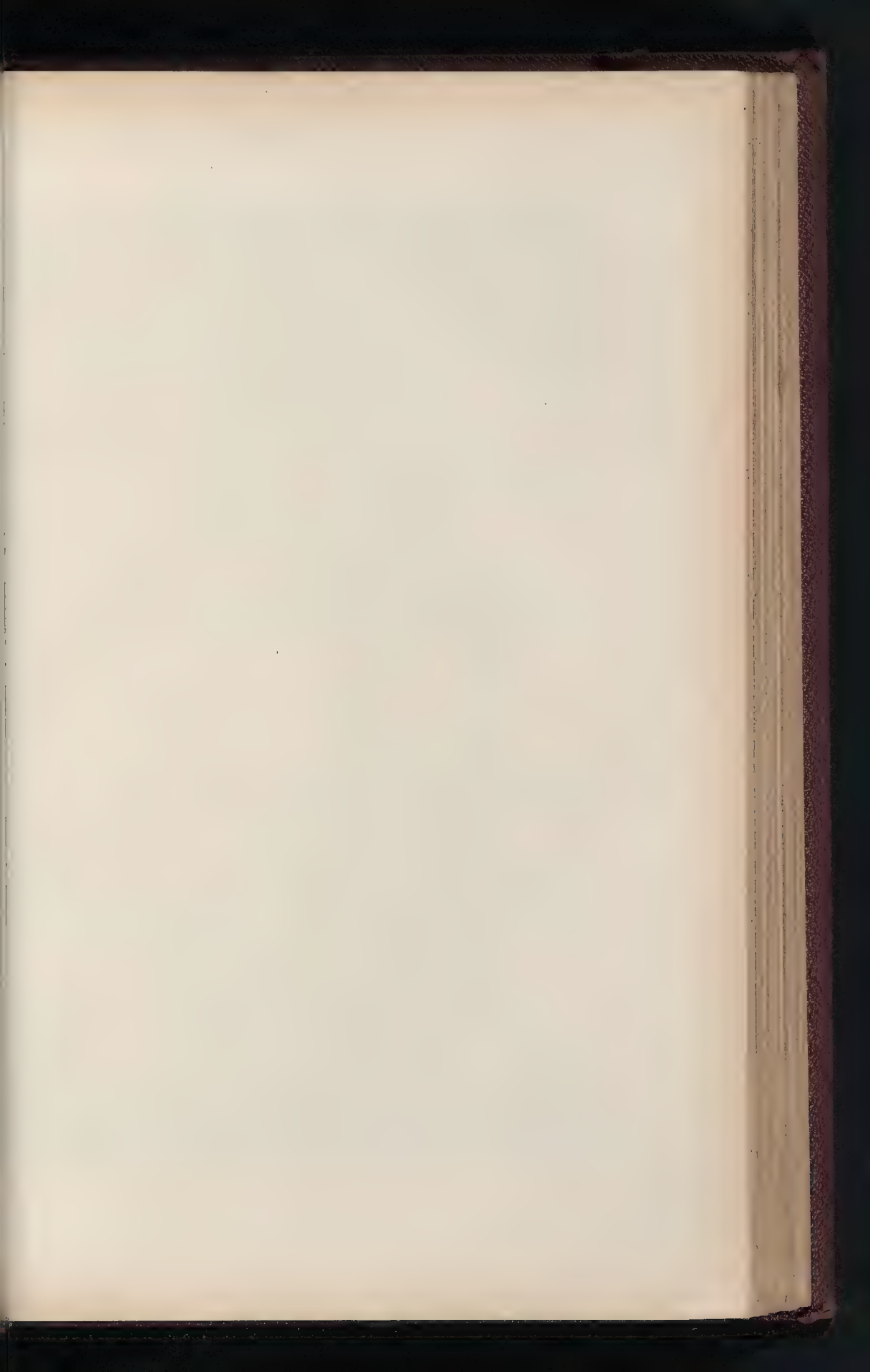
Terrible Disaster in Edinburgh.

EDINBURGH has just been the scene of a horrible catastrophe. One of those gigantic turrets in the High-street—that grand old street which connects the Palace of Holyrood with the castle—has fallen, and in its fall has buried the bodies of its ill-fated inhabitants. Up to the period at which we write, twenty-nine lives have been lost, fourteen persons have escaped with injuries more or less severe, and ten or twelve are missing.

The house whose sudden fall occasioned such a fearful loss of life is supposed to have been nearly 300 years old. The timbers were decayed and rotten, particularly the joisting. To all external appearance, indeed, it seemed more substantial than many of the old houses beside it; for, by one of those modern refinements in shop alteration, the original plaster front had, to some extent, been replaced by a front of ashlar. But the general rickety condition had long been palpable.

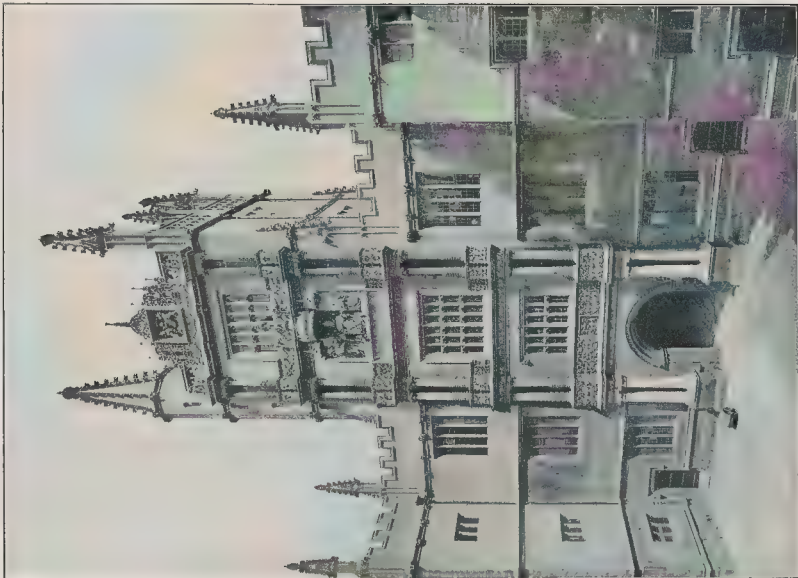
NATIONAL GALLERY OF BRITISH ART, MILLBANK.

An exhibition will be opened on December 14 for three months of the collection of works by English Pre-Raphaelite artists belonging to the Corporation Art Gallery, of Birmingham, which is in course of being rebuilt. The collection comprises Millais's "Blind Girl," Holman Hunt's "Christ in the Temple," and "Two Gentlemen of Verona," and Ford Madox Brown's "Last of England," with drawings by Rossetti, Sandys, Millais, and others.



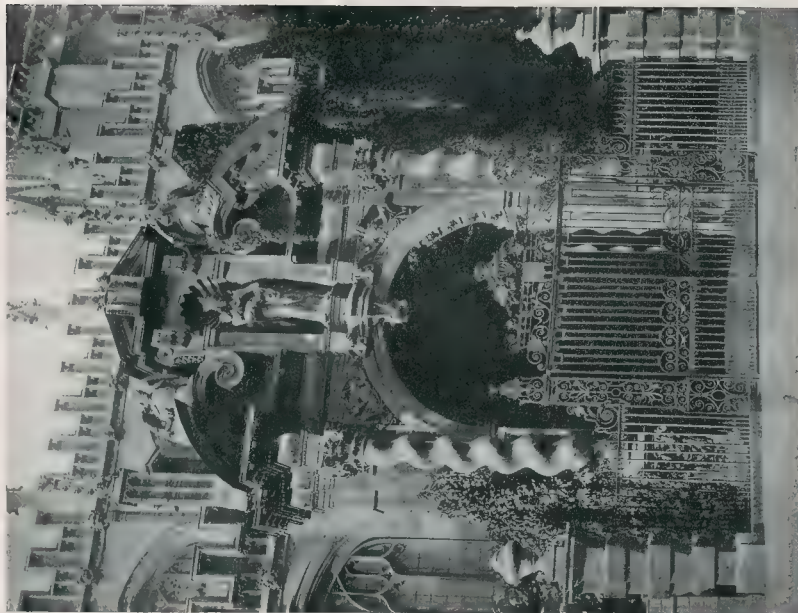
THE BUILDER, DECEMBER 1 1911





THE SCHOOLS (NOW THE BODLEIAN LIBRARY), OXFORD.

From Mr. GORCH's "Architecture of the Renaissance."
By permission of Mr. BATSFORD.

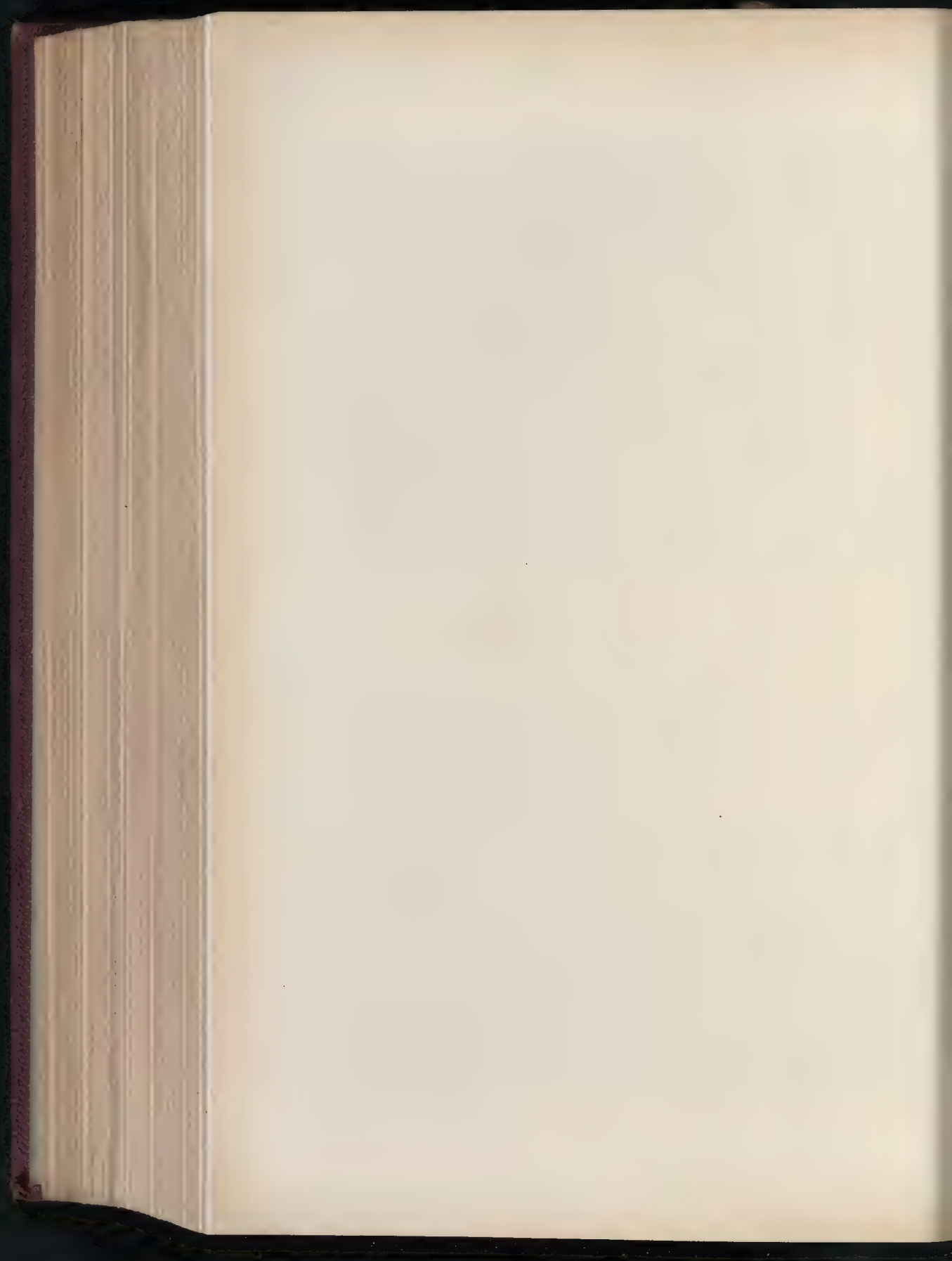


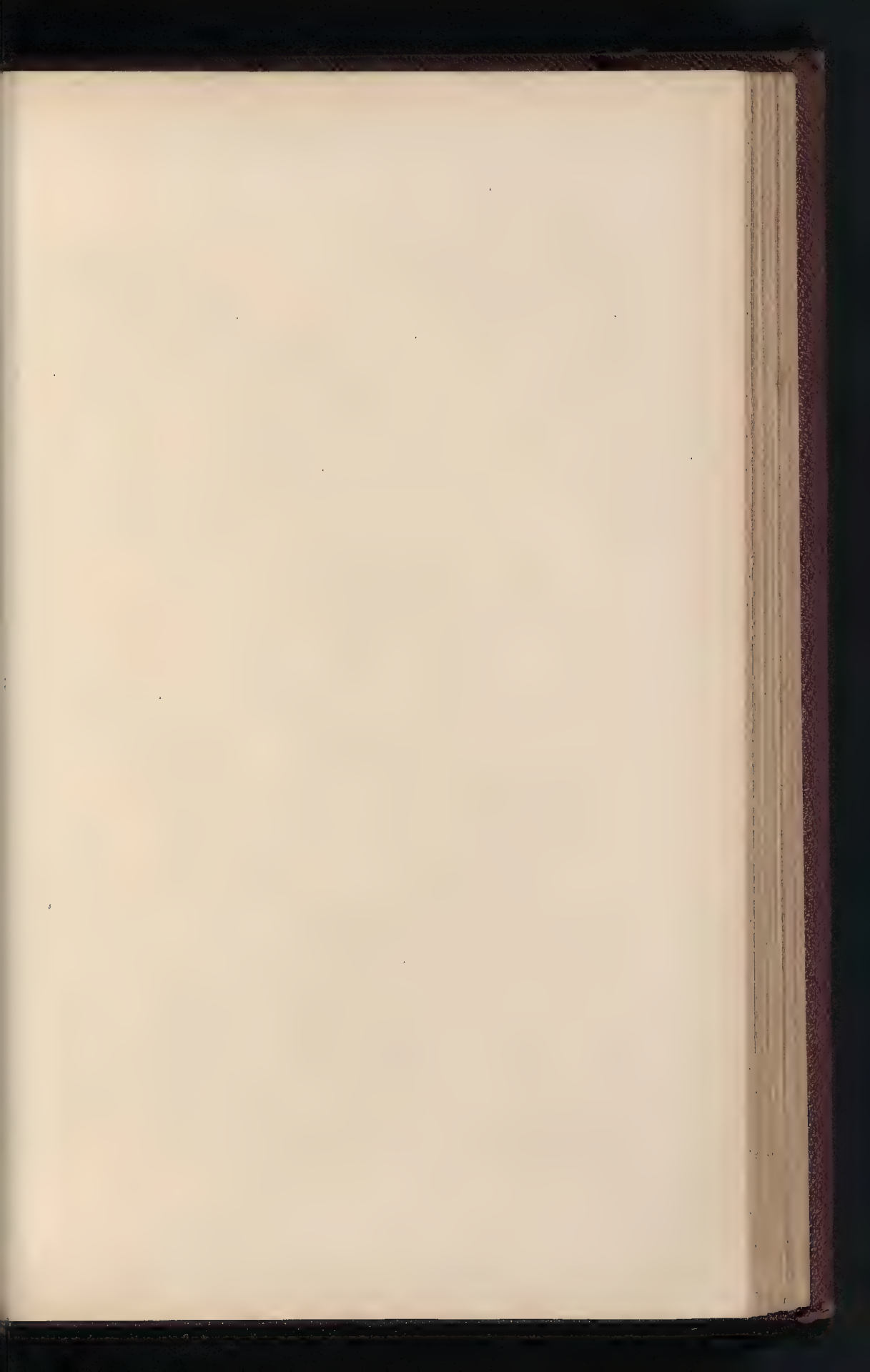
Spence & Co., Ltd., Publishers, 45 & 46 Hatfield St., E.C.4.

PORCH OF ST. MARY'S CHURCH, OXFORD.

From Mr. J. SPENCER GARDNER'S "English Ironwork."
By permission of Mr. BATSFORD.

ILLUSTRATING MR. BOLTON'S PAPER ON "JACOBÆAN ARCHITECTURE."



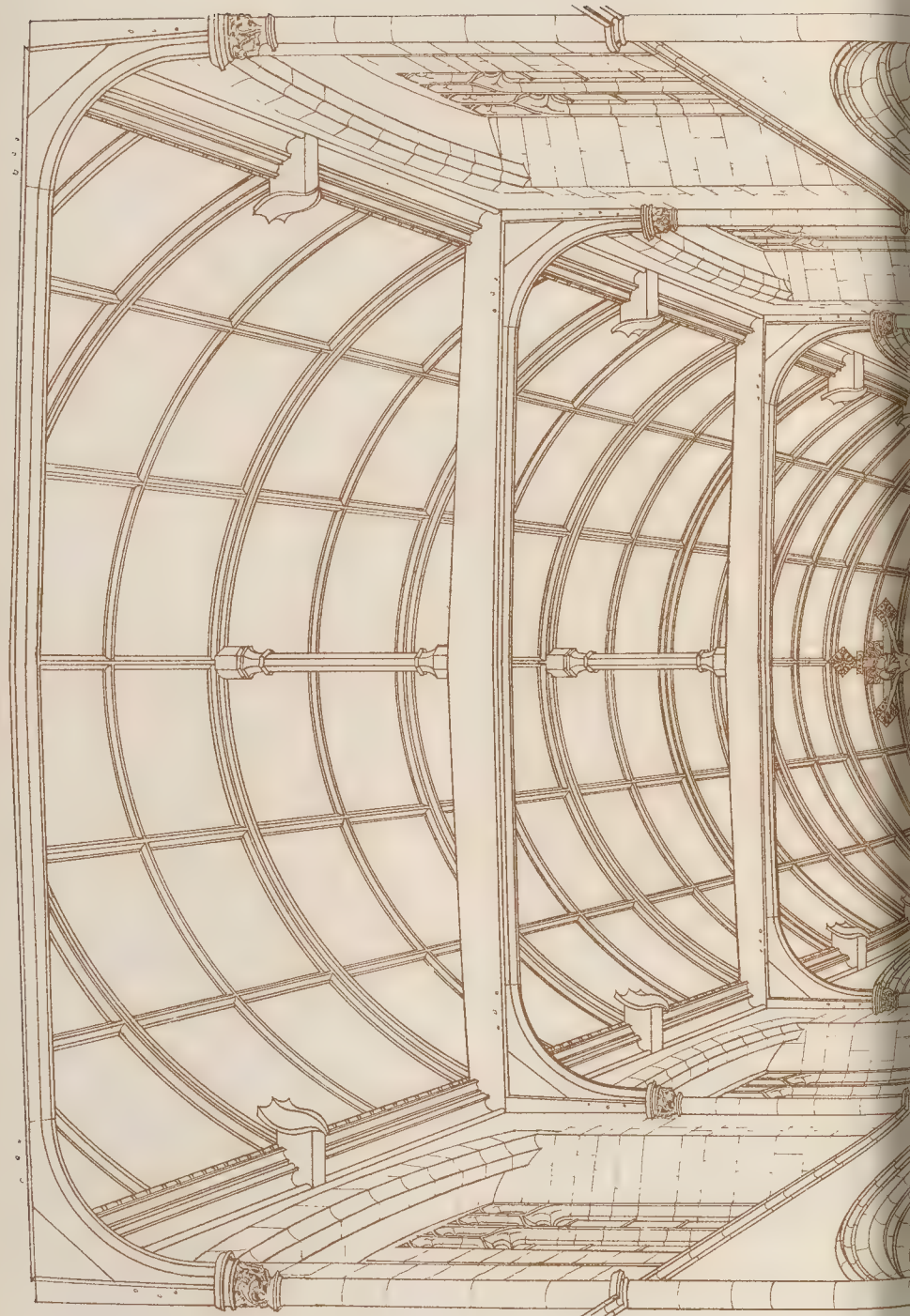


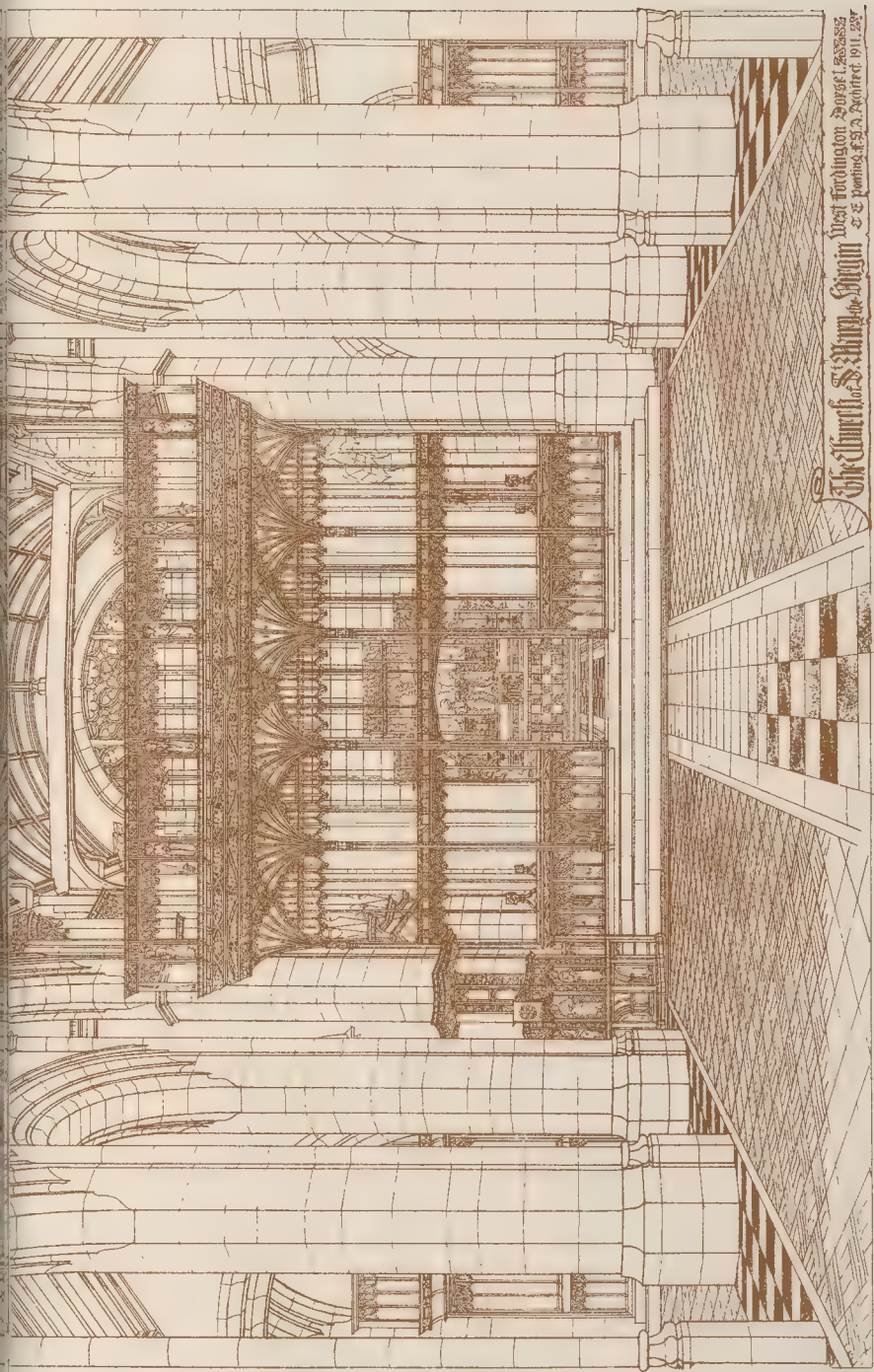
THE BUILDER, DECEMBER 1, 1911.



The Church of St. Mary the Virgin, with foundation stones laid by the Bishop of London, 1847.

A detailed architectural line drawing of the interior of a large, vaulted hall, likely a cathedral or church. The drawing shows the intricate ribbed structure of the vaulted ceiling and the supporting piers. The perspective is from a low angle, looking up towards the apex of the vault. The drawing is oriented horizontally on the page.



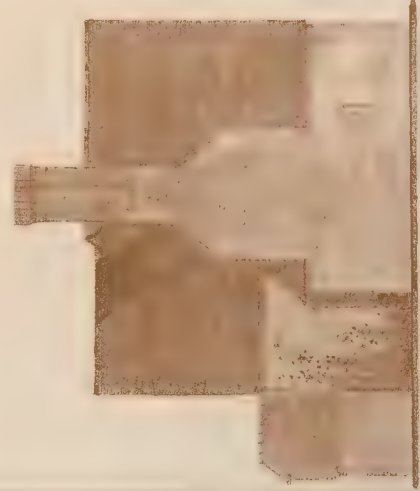
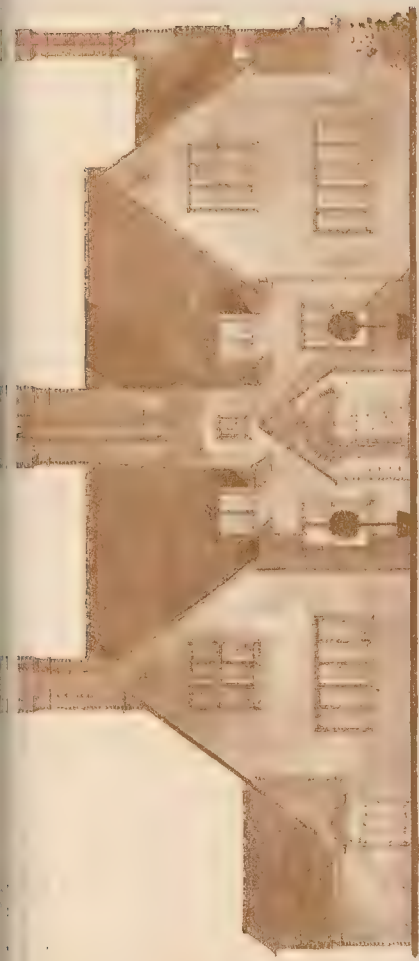


Royal Academy Exhibition, 1911.

CHURCH OF ST. MARY, DORCHESTER.—MR. CHARLES E. PONTING, F.S.A., ARCHITECT

The Church of St. Mary, Dorchester

PHOTO. THE DORCHESTER & WEST DORSET DISTRICT COUNCIL, 1911.



THE RED HOUSE, NEAR HITCHIN MR. J. ALGERSON, HALLAM, ARCHT.

SOME THOUGHTS ON JACOBEBAN ARCHITECTURE.

At the meeting of the Architectural Association on Monday a paper was read by Mr. A. T. Bolton, entitled "Some Thoughts on Jacobean Architecture," which we are enabled to give in full together with some of the illustrations the lecturer showed.

Mr. President, Ladies, and Gentlemen, respecting to deal with so difficult a subject as Jacobean architecture I shall not have reverted to an original conclusion of A.A. meetings, which was, I think, that those who might know a little should endeavour to enlighten those who might be assumed to know even less. Unless I have always found the subject of Jacobean architecture very obscure. Though I have consulted a great variety of books in various libraries, I have rather ventured, as far as has been possible, to personally or revisit some of the chief things of the period. Houses in the line of their use cannot be very accessible. I am glad of this opportunity of making acknowledgments of some very kind lessons accorded to me. I have also to thank *Country Life* for a loan of sixty slides from their well-known illustrations of old houses, and Mr. Batford for the selection of thirty-five plates from Messrs. Gotch and Talbot Brown's book read here this evening.

Books a list might be made, but Mr. Field's lucid "History of the English Renaissance" and the great folio of Messrs. Talbot Brown have practically covered the older works by Nash, Addison, and Hall. To such authorities I can only express obligations, and differ necessarily at one's own risk. The researches of Mr. Wyatt Papworth between the foundation, and useful additions have been made by Mr. Harry Sirr in the *J.B.A. Journal*, and by Mr. Walter G. R. Lacey, the curator of the Soane Museum, in the useful notes he has compiled for students from Thorpe's book. I shall hope to set out all the available facts, and then leave it to form your own conclusions.

Following further discoveries, many points of discussion must remain open, but the evidence seems reasonably to support deductions that seem likely to be may well be drawn.

Domestic Architecture.

Domestic architecture is essentially a dated subject. Those of you who have entered into the history of a house extending two or three centuries will agree that the customary absence of records, either of original or reconstruction operations, renders

many common assumptions and historical deductions very unsafe. Broadly speaking, we shall find that each generation makes its own alterations, and that sales, with the accompaniment of new ownership, are pretty certain dates of successive upheavals.

As an example it is amusing to see a house classified as of an H plan if you happen to discover that the wings are additions to a house, originally square, by some later owner.

The hardest case of all is that of a house started on a basis of alteration or addition to an existing structure, and developing, in the course of building work, into a reconstruction so complete that the original house has been lost sight of and forgotten.

It has, however, lived on in the restrictions that it imposed on its successor.

There are also cases where the client has evidently not been satisfied, and reconstructions have taken place even before completion.

A good many facile deductions based on plans of old buildings rest, I am inclined

to believe, on similarly insecure foundations. It is as well to bear in mind our own experiences in house-building, and to allow for the prevalence of human nature in all epochs.

The compromises of to-day were certainly equally enforced in the past, but we run to extremes when we exaggerate the roll of the paymaster. I think various allegations as to the non-existence of architects and a good many fanciful theories as to the genesis of old buildings should be profoundly modified by considerations of this order.

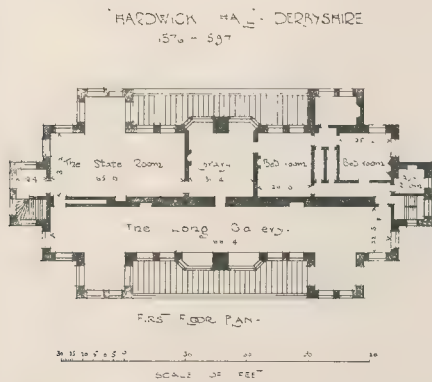
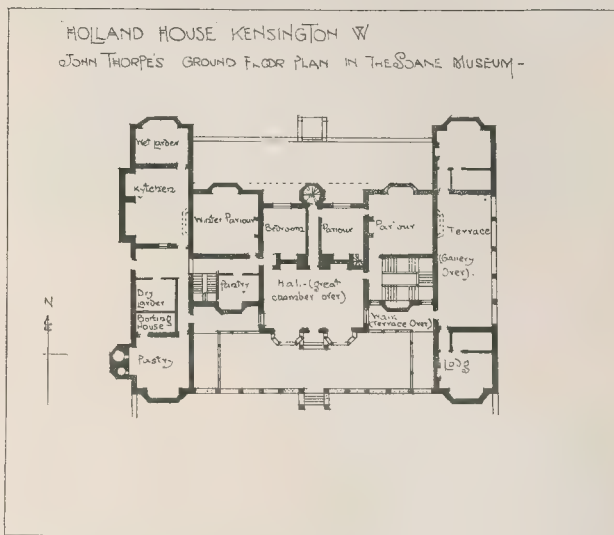
Arguments based on the correspondence relating to Burleigh House, for instance, should allow for the fact that no Elizabethan exterior is more incoherent or unsatisfactory. Burleigh, in fact, was exceptionally deficient in architectural control. The best feature remaining of the Elizabethan interior, the great staircase, an interesting variation of the Italian type of stairs with ascending vaults, shows that in parts, at any rate, architectural skill of a high order must have been enlisted.

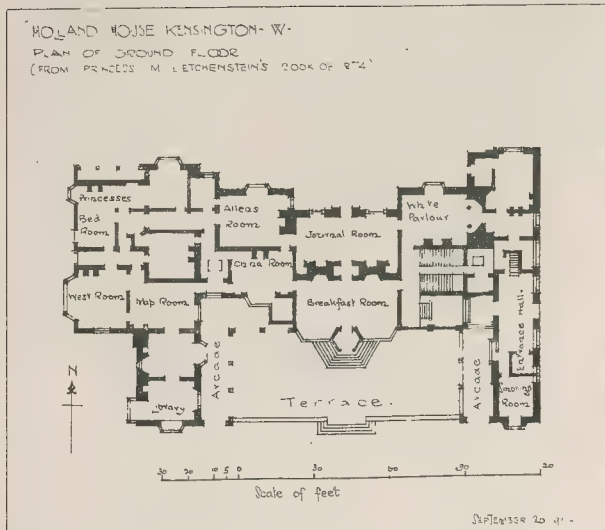
Let us keep in mind all through the point of view of the working architect, who knows very well the decisive influence of the architect's presence at his building.

We know that these ancestors had special riding allowances, and, as Mr. Blomfield puts it, "much of Inigo Jones's time must have been spent in the saddle." The same must have been true of the Thorpes and those others who so far are only names to us.

There is no sense in looking for our signed sets of contract drawings and details at that time of day. You will find the 280 pages of Thorpe's collection and the Inigo Jones's Burlington-Devonshire set of drawings very illuminating as to the methods of these men; but these documents are not the whole story. Even now we know how far-reaching are the decisions on the ground and the bearing of actual set-out and *viva-voce* instructions to men with whom we have worked before. Critics to command our attention must view their problems with the eyes of an architect and with that intuitive perception of style that springs from familiarity with a man's work.

You would, all of you, distinguish without hesitation the work of Inigo Jones from that of Wren, for instance, and the work of the Thorpes and others might in time be made equally distinct.





What is Jacobean Architecture?

What do we mean, then, by Jacobean architecture? I propose mainly to adhere to the reign of James I. and its sequel under Charles I., but in no case to cross the gulf of the Civil War. In view of this, I have with reluctance omitted to deal with the beautiful College of Clare at Cambridge. The Palladian work of Inigo Jones is also outside the subject.

The twenty years from 1640 to the Restoration made many travellers, and when the exiles returned a process of refashioning old homes began that only want of money could avert. Wren, who had stayed at home, found it expedient to go abroad, but, as is well known, his tour was cut short in France. I take that story of Charles II. ridiculing his ideas as to the height of rooms as a hint of the pressure put on architects to abandon the sound English ways of Elizabeth and James.

The Guildhall in "the ever-faithful city" of Worcester has always impressed me as striking evidence of the change forced on by the war.

In this frame of mind attention was concentrated on the purely Palladian work of Inigo Jones. This increased in strength in the following century, when his work began to be published in the light of current XVIIIth-century practice. It is only in the latter part of the XIXth century that efforts have been made to disentangle the work of the master from that of his disciples.

We ought to be able now to view the matter without bias, taking, perhaps, a further step in the direction of distinguishing his essays in the earlier manner. The complete portrait of Inigo Jones can only be arrived at by realising that he could not for all time be a bondsman in the house of Palladio.

Jacobean architecture for our purpose, therefore, is that from 1600 to 1649, just the first half of the fascinating XVIIth century. Apart, however, from that, I think all of us do distinguish between Elizabethan and Jacobean work that is, between the preceding half of the XVIIth and the following first half of the XVIIIth centuries.

Off-hand most architects would state a distinct preference for the former, and admit a belief that Jacobean work was a decadence from a more vigorous and interesting class of work.

Social History of the Times.

Possibly this may be unconsciously influenced by the political history of the time. The average Englishman thinks the reign of James I. stands in need of some apology, that it was a falling off from the glories of the Elizabethan age, a slackening of the

native pulse and a lowering of the national ideal. Certain actions, such as the execution of Sir Walter Raleigh, have become fixed in the public mind as disgraceful, and have been regarded as typical of the epoch as a whole.

Probably the truth may be found in recognising that it was a transition age, with all its accompanying difficulties, weaknesses, and occasional acts of baseness. Those of you who can read Green's "Short History" with pleasure and interest will recall the main outlines of the situation. Perhaps you will agree that after the vigorous personal government of Elizabeth, where the caution of the woman was aided by the astuteness of statesmen of exceptional powers, a man of unusual genius was needed to preside over this inevitable transition.

This is, of course, if you agree that "There's a Divinity that shapes our ends, rough-hew them how we will," and that the growth of England was bound to be in the main as we know it has been.

In that case you will admit perhaps that James I. could have with more reason than Hamlet exclaimed, "The time is out of

joint. O cursed spite That I was ever born to put it right!"

I seem to remember reading long ago some essay—I think by Professor Elmes, father of the architect of St. George's Hall—in which James was written of as the British Solomon, and an elaborate effort was made to establish his reputation for wisdom.

Common opinion, however, maintains that the seeds of future trouble were sown in his reign, and holds him responsible for a system of favourites at once showy and unreliable, and also for the education of his son Charles I. on lines which led him straight to the scaffold.

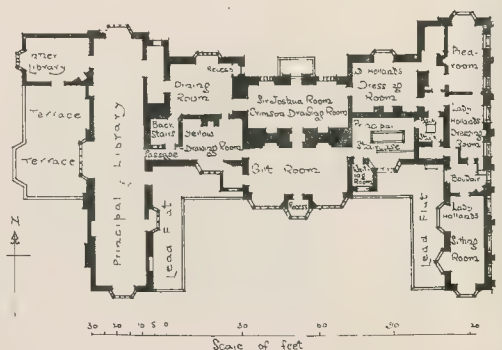
To James is assigned the origin of the proverb that "those who live in glass houses should not throw stones," the circumstances being that Villiers, Duke of Buckingham, had erected for himself a building so windowed as to be known as "the glass house." Having fomented a disturbance, and the mob retaliating by breaking his windows, he complained to the King, who countered him with this characteristic utterance. We cannot acquit James of fostering the pedantry that was the curse of his age. He should have come under that great schoolmaster who had the courage to declare in an age of classical quotation that he expected a gentleman to have forgotten his classics.

In Thomas Fuller's memorable account of the wit combats at the Mermaid you will remember that Ben Jonson figures as the heavy Spanish galleon and Shakespeare as the nimble English galley, such as achieved the defeat of the Armada. The truth seems to be that very few people struggle with the complicated, allusive writings of Ben Jonson. He entirely missed the sure touch of Nature that pervades the writings of Shakespeare, preserving and handing them on from one age to another, through a constantly-expanding audience.

Of the darker side of James's character we get glimpses in the literature of the period. To Laud accompanying Prince Charles on his madcap voyage to Spain in 1623 he gave instructions that, as the Spaniards might resent a recent Royal reference to the Pope as Antichrist, he was to set forth "that his Majesty had written nothing in that point conclusively, but by way of argument." His Chancellor, Bacon, knew what he was about when he wrote to the effect that dissimulation was allowed to kings as a part of policy.

Confronted with a real revolution of thought, as set forth in his Chancellor's "Novum Organum," James could see nothing more in it than that "it was like the peace of God, which passeth understanding."

HOLLAND HOUSE KENSINGTON - W.
PLAN OF FIRST FLOOR
(FROM PRINCESS M. LETCHENSTEIN'S BOOK OF 1874.)



two turning points of Bacon's life in the first quarter of the century—appearance against Essex, a former friend, and his abasement before Buckingham which preceded his impeachment and execution in 1621. A Jacobean Plutarch would have drawn Seneca and Bacon both to illustrate the failure of the highest intellectual gifts unbalanced by character. The pregnant wit of the "Essays" is made the reader. Imagine one of them dealing with the story of King Lear. The politics of the King would be illustrated best, the relations between fathers and sons touched on with the most pithy wisdom, the Edmund's moral, "Thus the just of our pleasant vices make whips to us," would be duly enforced. It is to assert, however, that the terror and of the tragedy would be wholly

is unquestionable that Shakespeare's underline passing events, that in "Lear," for instance, there are reflections on King James's Court; but it is very curious to identify passages without the very wide historical reading. Broadly speaking, the masques were for the Court and the plays for the people, but popular plays were commanded for performance at Court. Some of the duller historical details doubtless "walked" by means of a fine interpretation that is lost upon

There is an instructive portrait of James I., somewhat different from other contemporary versions to be seen in the great houses of this date. In spite of the, of the threatening storm-clouds hanging overhead during this half-century, the darker aspects of the life of the mind and other assumed signs of decadence, and this paradox, that in architecture, painting, and not to mention other arts and sciences, we stood, as it were, on the verge of a veritable golden age. You will find this most interesting in a close student of the XVIIth century, the late Mr. Shorthouse, whose novel "Inglesant" will be known to many

place could have been found which is more to interest and delight a man of less than Oxford did at the time. It was still at the height of prosperity which it had enjoyed under Henry and Laud for so many years, but it was soon to be so sadly overcast.



Aston Hall : The Great Gallery.

The colleges were full of men versed and intelligent in all branches of learning and science, as they were then taught. The halls and chapels were full of pictures and of rich plate, soon to be melted down; the gardens and groves were in beautiful order, and the bowling-grounds well kept. . . . Music was studied deeply as a science, antiquity and every foreign country being ransacked for good music, and every gentleman pretending to some knowledge of it. . . . Every kind of curious knowledge was eagerly pursued; many of the Fellows' rooms were curious museums of antiquities and relics, and scarce books and manuscripts. . . . The niceties of algebra and the depths of metaphysics were inquired into and conversed upon with eagerness, and strange inquiries upon religion welcomed. A violent controversy was going on among the physicians, and new schools had risen up who practised in chemical remedies, instead of the old-fashioned vegetable medicines. I must ask you to allow that the shifting direction of Tudor, Elizabethan, and Jacobean foreign and social policy has its reflection in our architecture. Italy, France, the Spanish Netherlands, the liberated Netherlands, Spain itself, and more transiently Germany, each and all were shifting centres of influence.

"To think an English courtier may be wise and never see the Louvre." As the course of the Reformation and counter-Reformation fluctuated, so importations of divergent tendencies came and went. It was not only by the diffusion of ideas and of books and prints, but also by the actual immigrants, largely workers and workmen, that these forces were felt. All the while, however, England was finding herself not only politically, but also artistically, and as a man grows, absorbing or rejecting those elements which the state of her development dictated. The English as a race being at once unaccommodating and assimilating, the alien artists were absorbed or pushed out. Once more we see William the Englishman taking the place of William of Sens, but it serves no purpose to doubt their existence or deny their influence. Architectural historians have been perfect pendulums on this question. At one time everything is ascribed to Italians, Spaniards, or Flemings, while at another all must be native, making it, I think, pretty clear where the truth lies. The fruit-grower is not concerned to deny that his trees have been grafted.

Architectural Position at Accession of James I.

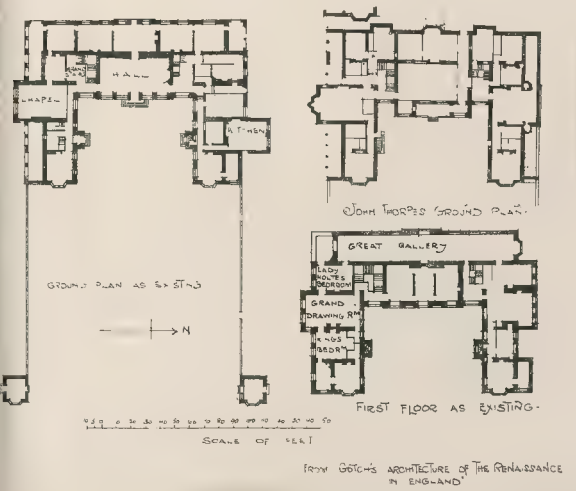
We will now turn to consider the architectural position at the accession of James I. (1603). The flood tide of Elizabethan house-building was slackening, and we might call to mind the Shakespearean comment in the second part of Henry IV., which has a supposed reference to the transfer of the players to Bankside, and the building of the Globe Theatre in the winter of 1598-9:— "When we mean to build, We first survey the plot, then draw the model; And when we see the figure of the house, Then must we rate the cost of the erection; Which if we find outweighs ability, What do we then, but draw away the model In fewer offices; or at least do so: To build at all? Much more in this great work

should we survey The plot of situation and the model; Consent upon a sure foundation; Question surveyors; know our own estate, How able such a work to undergo, To weigh against his opposite; or else We fortify in paper or in figures, Using the names of men instead of men, Like one that draws the model of a house Beyond his power to build it, who half-through Gives over, and leaves his part created cost A naked subject to the weeping clouds, And waste for churlish Winter's tyranny."

This passage comes home to us when we remember that architect and surveyor were largely interchangeable terms. It gives us also an observer's impression of the abandoned Elizabethan houses to be seen in desolation and incompleteness.

By the end of the XVIth century a vast fund of experience had been accumulated. Able workmen abounded, and the need of the moment was for some directing mind to focus the confused and scattered elements into a lucid whole, formulating a line of action along which future progress could be assured. You all know how the need was met, and

ASTON HALL - WARWICKSHIRE.



FROM GILES'S ARCHITECTURE OF THE RENAISSANCE IN ENGLAND



Aston Hall: Fireplace in Great Gallery.



Aston Hall: Corner in Entrance Hall.

that in Inigo Jones an architect appeared whose work was destined to bridge even the gulf of civil war and to determine the future course of English architecture.

Work of the Thorpes.

You ought not, however, I think, to regard the Elizabethan and Jacobean ages as unprovided with skilful architects. Quite a list of names of men, whose biographies we should be only too glad to have, has been collected. We may, however, deduce from the Thorpe collection of plans, drawings, and designs that in the Thorpes, father and son, we have a type of the high degree of zeal and intelligence that the age produced. Peacham's reference in the "Gentleman's Exercise," first edition 1612, is:—"John Thorpe of the Parish of St. Martin's in the fields, my especial

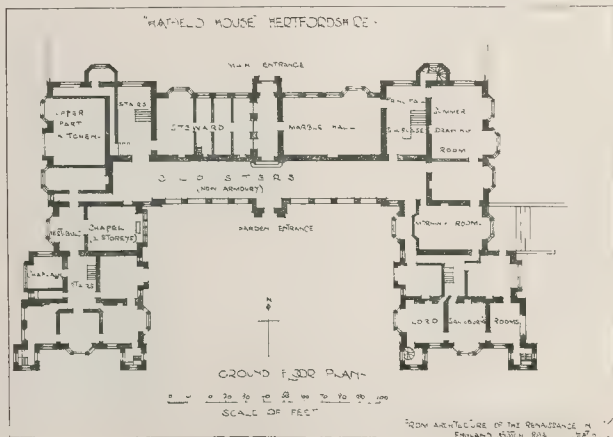
friend, and excellent geometrician and surveyor, whom the rather I remember because he is not only learned and ingenious himself, but a furtherer and favourer of all excellency whatsoever, of whom our age findeth too few. And lastly the aforementioned Master John Thorpe his sonne, to whom I can in words never be sufficiently thankfull."

The impression produced by a careful study of the Thorpe drawings is that in them we have the record of studies made and designs conceived in the true spirit of the working architect.

Thorpe was interested in many things, and, above all, desirous of extending his outlook. He seems to be groping after the development that Inigo Jones was to achieve. It seems possible, assuming, as is most likely, that we are dealing with two Thorpes,

that it was the son who was in Paris in 1600 and received Sir Henry Neville's recommendation for promotion in England. Drawings of Paris buildings, dated 1600 are in the collection. The tendency, however, is to look to Antwerp and Amsterdam rather than Paris. The older Thorpe's weakness is an undue love of ornament and profuse picturesqueness of features, such as is also seen in the books of Du Cerceau and most of all in those of Vriese, with whose works Thorpe seems to have been very familiar. Du Cerceau flourished between 1520 and 1584, but neither birth nor death are known. After a journey to Italy, he settled down, about 1549, as head of an atelier of engravers at Orleans, and, beside a series of books, probably issued quantities of prints for designers, such as those *taille douce* which Wren collected during his brief visit to France in the next century. Du Cerceau was a pirate so far as most of his books were concerned, but his *magnum opus* "Les Plus Excellents Bastiments," which was on hand from 1550-76 (when the first volume appeared, followed by a second in 1579), has, I think, some bearing on the question of the Thorpe collection. The châteaux and Royal Palaces are represented by a plan and an elevational perspective or bird's-eye drawing. Some of these are said to be drawings obtained at the building which Du Cerceau visited, on the ground that he could not have measured them in actual cases, and also because some of the drawings are evidently of an earlier date than others. May it not have been the case that Thorpe vaguely contemplated a similar book, and took some steps in the direction of collecting the materials, but that, being a working architect, and having no school of engravers behind him, his collection remained as mere data for his own use?

What we seem to want is that some representative body interested in architecture should undertake to facsimile for students and general use such collection of early drawings as those of the Thorpes and of Inigo Jones. With the best will in the world on the part of owners the must otherwise be largely inaccessible. You



undoubtedly aware that this has been
sively done in Italy from the drawings
great Italians, which are thus made
ble to all. It is beyond the resources
individual architect. It is essential
should be complete, and not partial.
ardson attempted it with Thorpe's
tion, going as far as to issue a
ectus, before the days of photography,
his tracings for lithography exist at
Kensington. Our modern facilities
ch that we want rather the will than
eans to carry out so scholarly an under-

Holland House.

land House, perhaps begun 1605, in-
nd 1606, and finished in 1607, appears
Thorpe's collection in a form that shows
it was an alteration of a square house,
e's Castle," by the additions of wings,
es, and other features, comprised by
e in his note on his drawings as "Sir
Coop at Kensington, perfected per
J. T." These alterations seem to date
en 1612, when James I. stayed at the
during the fatal illness of Prince
and 1614, the death of Sir Walter
James I. did not like the house; he
the wind blew through the walls so
e could not be warm in bed." Three
ies of occupation of a house so close to
pital have naturally left many scars of

it in the first place of brick and a soft
much repointing, cement repairs to,
uch cutting out of the stonework has
place. It must be looked at with eyes
ar with Knole, Kirby, and Aston Hall
preciate its original condition. As at
ld, the façades have little relation to
other. The south front is the most
ful; like a Jacobean epitaph, it welds
and varied fancies into an expression
e coherence. There are sixteen gables,
owers, and a half-octagonal central
in combination with bay windows
cades that seem innumerable. In the
ne of a winter's day, strengthened
far-reaching shadows, the composition
gaitly and sparkle seems a fair
tem counterpart of the Villa Medici
me.

largeness of scale the arcade seems
from the necessity of lighting the
ws in the back wall. The fretted
ots have naturally had to be renewed,
othing is so easily lost as the vivacity
e original design in work of this
ter. The straight east front, with
gables, is in three stories, and seems
been regarded by Thorpe as an open
for the exhibition of the Doric, Ionic,
Corinthian Orders, each banded as his
dictated on a different system of mis-
t ingenuity. Whatever may be said
his Jacobean method elsewhere, it is
lly misplaced on a brick background
already presents a fretted face.
on the entablatures reach the angles
re cut off square, the gables have neither



Hatfield House, Herts (1607-11).

ends nor centre. Inside the house, the Great
Chamber, or Gilt Room, is of considerable
interest, as the white-painted and decorated
panelled walls remain as hastily prepared for
a ball to be given at the time of Henrietta
Maria's marriage with Prince Charles in
June, 1625.

We know that in 1623 Inigo Jones had
orders to prepare two chapels, one at Denmark
House and the other at St. James's for the
Infanta's use, and then he went to Southamp-
ton to prepare for her reception, being made
a Burgess of that city on the occasion.

From this and the fact of the unques-
tionable Inigo Jones character of the two well-
known gateway piers his connexion with this
work has been assumed.

Francis Cleyn, a painter and decorative
artist from Denmark, employed by Charles I.
as Designer of Tapestry at Mortlake,
seems to have been engaged upon it,
and he has produced a quaint and interest-
ing, if spotty, effect. The imitated
marbles, green, black, and red, of the wooden
mantelpieces and frieze are an interesting
indication of hurried preparation. The car-
touche shields in the angles of the cornice of
the room seem rather an Italian reminiscence.

The late Mr. Watts, R.A., has painted on
the large panels of the mantelpieces in the
shadowed gold work four figures in the style
of those existing in St. Catherine Cree.
Otherwise, the Gilt Room is said to be un-
touched, apart from the ceiling, which fell,
and has been replaced by a copy of one
from Melbury.

The staircase has been altered, and also the
Chapel, but there are some other oak mantel-
pieces of the period. The Gallery is now the
Library, and all lined with books. The ceil-
ing has been transformed into bays with top-
lights. Much of the interest of the fine and
historic interiors is naturally of a later date.

In forming an idea of London in the
Jacobean age, bear in mind that brick build-
ing did not become general till after the Fire
of London. Lincoln's Inn-fields and Covent
Garden Piazza were both novelties, and the
great stone and brick houses along the Strand
and Whitehall Palace itself were on the lines
of Hampton Court, Old St. James's, and
Lambeth Palace—country houses in town.

Sir Paul Pindar's House.

Sir Paul Pindar's house, the front of which
is familiar to you all, in the Victoria and
Albert Museum, is therefore of exceptional
interest. The Museum authorities, doubtless
for good reasons, have dated it 1600 instead
of "about 1625," as formerly. Sir Paul
Pindar is supposed to have been born 1565
and died 1650. A native of Wellingborough,
he was educated at the University, but pre-
ferred commerce, and, entering the city, was
sent to Venice at the age of eighteen as factor
for the firm. He was there eighteen years,
and in the crisis of 1601-2 is said to have
been Cecil's agent. For two years Consul at
Aleppo, 1609-11, he was Ambassador nine
years in Constantinople, but he was in
England in 1616, and again in 1620, when
he was knighted. His final return was
1623. A man of vast wealth, he had large
financial dealings with Charles I., and
was, besides, a generous contributor to the
work of St. Paul's. After his death his
affairs were found in hopeless confusion.
From this brief notice you will see that this
house front is of the greatest value, as one
which was considered adequate for a
millionaire at that epoch.

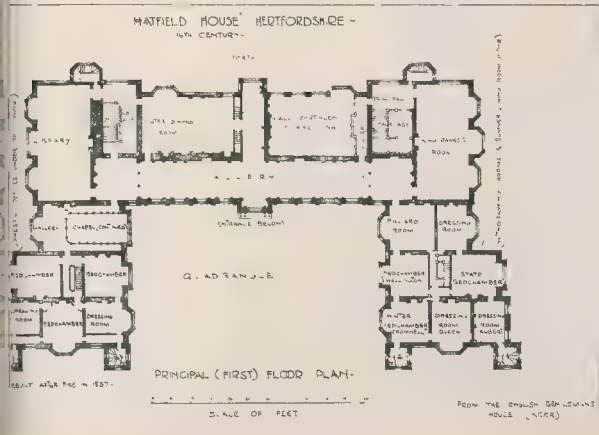
Aston Hall.

Aston Hall, 1618-35, and Chilham Castle
are near in date, but far apart in architec-
tural character. Aston, in feeling, is more
Elizabethan than Jacobean, particularly in
its interior work. It hangs back in the stage
of bossy, fretted profuseness from which the
new work of the century was freeing itself,
and, except in the gallery ceiling, shows little
assimilation of the lessons that were being
derived through the Italians from classic art.*

Inigo Jones's Work.

There are two plans of Aston in J. Thorpe's
collection. One would like to take Kirby Hall
as John Thorpe's masterpiece. We shall re-
turn to it later on. Turning now to the rising
sun, and taking the dates of Inigo Jones's life
as ascertained by the best authorities, we
get the following:—Born in 1573, on his
father's death in 1596 he proved the will on
April 5, 1597, and went to Italy up to 1604,
and may have been at the Danish Court in
the service of King Christian prior to that
date. He is known to have been in England
for the Masque of Blackness, presented by
Anne of Denmark, wife of James I., on
Twelfth Night, 1604-05. In August, 1605, he
took part in the production of three plays at
Oxford before the King. King Christian of
Denmark was a visitor to England in 1606.

* It is much to be wished the Birmingham
Corporation might realise their unique oppor-
tunity for creating a typical Jacobean Museum.
Stuffed birds are barely adequate exhibits in
such surroundings. The XVIIIth-century house
at Ypres is the model suggested.



Inigo Jones was a King's Messenger to France in 1609. He was appointed Surveyor to Henry, Prince of Wales, from January 16, 1610, up to his death on November 6, 1612, and was a good deal occupied in the production of the famous Court masques, supplying scenery and devices to Ben Jonson's librettist. Over the ordering of these performances a violent quarrel between them broke out, leading to much satire aimed by Ben at his former associate, and various deductions have been based on these libels.

Francis Bacon's account in the "Praise of Henry, Prince of Wales," contains the following:

"He had, by the excellence of his disposition, excited high expectations among great numbers of all ranks, nor had, through the slackness of his life, disappointed them."

He was much devoted to magnificence of buildings and works of all kinds, though in other respects rather frugal, and was a lover of antiquity and arts. He showed his esteem of learning in general more by the countenance which he gave it than by the time which he spent in it. . . . The instructors of his younger days (which rarely happens) continued high in his favour."

Jones, being neglected at Court between 1612 and 1621, went to Italy a second time in the summer of 1613, but was in London on a flying visit in January, 1614, and definitely returned home in the autumn of that year. He was appointed Surveyor-General of Works in 1615.

Bramshill.

Of the early Jacobean work attributed to this stage of his career, Bramshill is the most important. A little book by the late Sir W. H. Cope gives us all that he could collect about the house. It is certainly built over an old building to the extent of being tied in plan by the preceding structure. Begun in 1605, it was completed in 1612, according to the date on a stackpipe with the initials E. Z. There is no documentary evidence to connect the house with Henry, Prince of Wales. The Prince's helmet is in the hall, and the crowning feature of the frontispiece bears very much the appearance of the Prince of Wales's feathers.

The house is not in J. Thorpe's book, but the Zouches were allied with the Freshams, for whom J. Thorpe is considered to have done Lieveken new building.

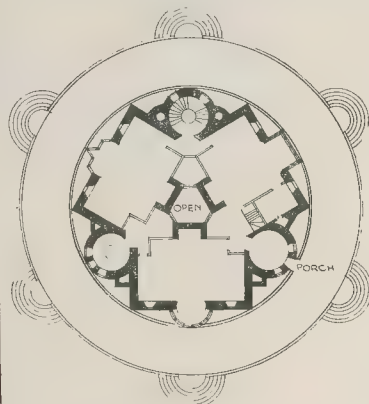
It appears to be the case, however, that when the building was nearly finished and was proposed that the Prince Henry should occupy it, some one was called in who advised the reversal of the main entrance from one end of the plan to the other. So it is about that the famous frontispiece was seen as an afterthought and cutting across hall windows.

Now there are two ways for the architectural student of looking at this frontispiece and the easiest is to be shocked at the wild and barbarous detail. The second and more difficult way is to realise that it is a work of character, and would produce its effect, independent of the said detail.

After that you can settle down to find out how the effect is produced. In the meantime our friends the artists will continue to find a subject.

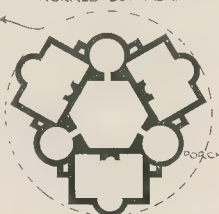
As regards frontispieces, a prevalent feature in Jacobean times, we may as well agree at once that they are the XVIIth century counterpart of the portico of the XVIIIth. After all, which is the most reasonable and least burdensome for English buildings? It is the sad case of the top hat on more. Why they do these things requires

IDEA FOR A HOUSE BASED ON A TRIANGLE AND A HEXAGON AND ENCLOSED IN A CIRCLE •

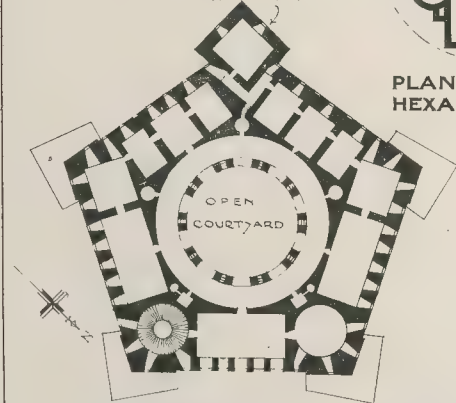


BASTION CARRIED UP AS CAMPANILE

SKETCH IDEA ON THE MARGIN OF THE WORKED-OUT PLAN.



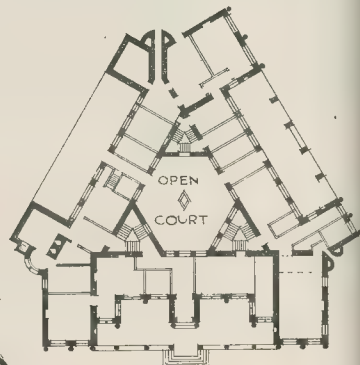
PLAN WITH LARGER HEXAGON IN CENTRE



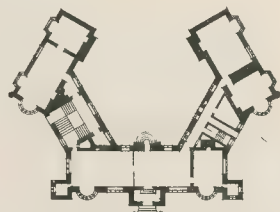
THE FARNESE PALACE OF CAPRAROLA NEAR ROME • 1547-1549 • VIGNOLA ARCHT

30 20 45 0 30 40 50 120
SCALE FOR ALL PLANS.

IDEA FOR A HOUSE BASED ON A TRIANGLE WITH A HEXAGONAL CENTRAL COURT •

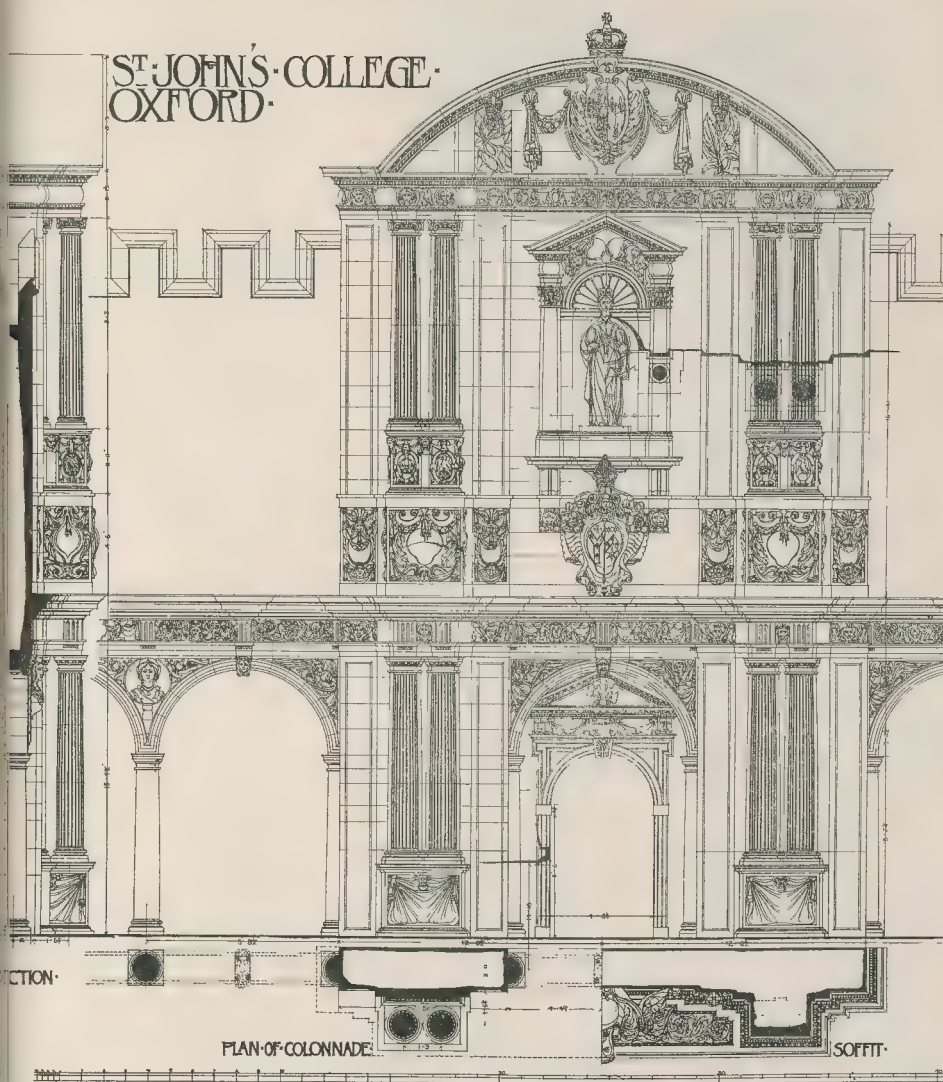


THESE 3 UPPER PLANS FROM JOHN THORPE'S BOOK OF DRAWINGS IN THE SOANE MUSEUM - (ALL ARE DRAWN TO THE SAME SCALE).



CHILHAM CASTLE • KENT • AS BUILT 1615-16 ATTRIBUTED TO INIGO JONES

ARTHUR BOLTON FROM ARCHITECT: VICTORIA MANSIONS 29 VICTORIA ST SW



Measured Drawing by Mr. J. B. Fulton, A.R.I.B.A.

of world-wide extent; China to Peru, it. Is there not a Chinese poem recording the heroic friendship that no shabby could dissolve? The further interest in the hill is that the back is a fine example of many-gabled, earlier treatment, as we call it, while the front is balustraded and the roof hidden. This façade is in long, thin lines and flat surfaces, with only two small masses, in the return of which are recessed loggia.

An intelligent student will be reduced to a choice between these two. The hill illustrates, as well as Hatfield, a tendency to discard entablatures and obtain effects independently, either by masses or by vertical breaks. We have this revived in our own day. When we pay the heavy price the succeeding century paid for their crowning cornices, our aesthetic interest is aroused. With the of Longleat, 1580-88, and Woolaton, in mind, we cannot doubt that this have been deliberate.

in, in Leicestershire, illustrated in

Country Life for October, 1911, is a miniature Hatfield in this respect.

Hatfield.

Hatfield, 1607-11, while far more coherent than Burghley, suggests that the worthy superintendent of the works had been supplied with a plan and only two elevations, and that in working out the other two as he proceeded he dropped into the gable style in which he had probably been brought up.

The Building Committee of the four noble lords, for one of whom Audley End was being erected, who met on the site April 15, 1607, may safely be assumed to have had some drawings before them to deliberate upon.

This is apparently the only work in which the previous holder of Inigo Jones's office of Surveyor-General of Works appears on the scene. In 1609 Cecil, growing greatly dissatisfied with the building operations, sent Simon Basil down to investigate, and it throws a considerable light on the matter to know that the building owner was specially desirous that two of the parties concerned should be made to set their hands to

a contract. This has a very familiar ring, and we can, from our own experiences, form a very fair idea of the situation.

Simon Basil must have been of some reputation, and yet nothing seems to be known of him or his work. Owing to the omission of Hatfield in Thorpe's collection, it is hazardous to express any opinion on the authorship of the design of the main façades. It does not appear to me that the omission in the building accounts for the period in respect of payments for architectural services is conclusive evidence against any architect being employed. There were various ways of acknowledging their services in those days.

The plan of Hatfield is of very great merit. It seems to be a development of Hardwick Hall, but while the latter is a more coherent design, it is in respect to Hatfield as a summer villa or casino compared to a house. The point about Hatfield was well put by an intelligent servant: "This house is not like old houses I have been in before, where there are rooms for show, which are never used, but here the whole house is in constant occupation."



Burford Priory: End of Chapel from House.

Unfortunately, the plan is not fully worked out architecturally; the chimneys illustrate it, rising up in long ugly lines like XIXth-century party-wall stacks, showing a want of that combination and grouping for which a skilful architect will always provide.

The worst injury after 300 years' occupation is in the reglazing of the two lower floors, including the unfortunate screenwork in the arcade of the cloisters. Naturally, to our notions of old work, there is too much paint, gilding, and polish; but in this I am not sure that we do not differ from the Jacobean themselves. Knole staircase painting, for instance, has the appearance of being original. They did not appreciate oak as we do, and they had at times a very naive taste in gold and crimson plasterwork.

Charlton, near Greenwich.

From a visit to Charlton, near Greenwich, I could not gather that there was much evidence of Inigo Jones's work. There was a hall mantelpiece which seemed to have some character. The idea seems to have arisen from the fact of the house being built for the Prince of Wales's tutor, Sir Adam Newton, 1607-12. Very able instructors were gathered round this promising and too short-lived Prince, as a brief note on Solomon de Caus, who was mathematical tutor, will show. Born 1576, in Normandy, he died in Paris, 1626. His book on perspective, dedicated to the Prince of Wales, and dated Richmond, October 1, 1611, states that he had been two or three years in his service. He seems to have excelled at gardens and waterworks, such as fountains, etc. An estimate for work of this character by him at Richmond was reported on by Inigo Jones and Francis Carter. He built a gallery at Richmond, 1611-13, completed at a later date, probably by Jones. The south front at Wilton, burnt 1647 and reconstructed by Inigo Jones, illustrates his style. He left England to lay out the gardens of Heidelberg Castle for James I.'s son-in-law, the Elector Palatine, and in 1620 published his designs of that work.

The leading idea at Charlton is the Great Chamber, then coming into favour and destined to supersede the older gallery, and, on the outside, a combination of a great mulioned bay with returned and mitred entablatures as a crowning feature.

Many of the numerous alabaster and marble mantelpieces in the house may have been directly imported.* English alabaster was exported, and brought back worked in combination with Black Belgian and other marbles. Some day an industrious person will compile an Eliz.-Jac. chimney-piece catalogue, and a good many replicas will then, I imagine, be discovered.

* Cf. contemporary complaints as to imported materials for Gresham's Royal Exchange; time of Elizabeth.

Knole, Kent.

The Jacobean work at Knole, Kent, 1603-05 (and later) is in the nature of an alteration of an older house, a refashioning to date of an old double quadrangular plan. As the work was for the Earl of Dorset, for whom, as Sir Richard Savile, John Thorpe had designed Buckhurst, and as it shows in the gables and treatment of the south side traces of his manner, it is fairly safe to accept that attribution.

The Venetian Ambassador's Room, lit by a single window of the Palladian motive, lined with white woodwork and having a chimney-piece of a well-recognised type, should, however, one would think, be ascribed to Inigo Jones. I could not at the time learn anything as to its date or authorship.

Chilham Castle.

Chilham Castle is known by the church registers and by the date 1616 over the doorway to have been occupied but not completed in that year. Two entries relate to workmen engaged on the new house. "Simon Rennet, one of the workmen under Mr. Smith in Sir Dudley Digges his work was buried here the 28th of August, 1616. His dwelling was at Chiswick, in Middlesex." "Humphrey Battle was buried the 30th Sept., 1616. He was a labourer with Mr. Smith." The third entry relates to the birth of a daughter—"Mistress Ann, the daughter of Sir Dudley Digges, Knt., baptised 3rd July, 1616." In deeds of that date Sir Dudley Digges is described as "of Chilham Castle." Sir D. Digges, knighted in 1607, was, it is worth recalling, an Ambassador to Russia, and was authorised to advance to its Emperor 10,000*l.* from the funds of the East India Company, which he founded in 1612.

Mr. Smith was doubtless the builder, and it looks as if he was from the neighbourhood of London. The workman from Chiswick is curious, in view of the mention of Putney on the monument of Sir Dudley Digges's sister, Margaret, wife of Sir Antony Palmer, "whose goodness where shee lived and died, since it cannot be buried in Putney, needeth noe epitaph." Her death at Putney, in the thirty-third year of her age, was on September 22, 1619. Allan Cunningham mentions a tradition that at one period of his life Inigo Jones had a house at Staines.

Sir Dudley Digges came from Digges Court, Barham, and his town house was in Philip-lane, St. Mary, Aldermanbury. Inigo Jones made designs for the Star Chamber in 1617, and tradition has also connected him with the Rolls Chapel, and he laid out Lincoln's Inn fields in 1618. Digges was made Master of the Rolls in 1638. The decisive stage of Jones's career began in 1619 with the White-hall designs, but the Star Chamber design of two years previous is quite Palladian. There is, however, in the Burlington-Devon-

shire collection an admitted drawing of semi-Jacobean character signed by Inigo Jones and dated 1616. It is a three-story narrow entrance bay, ending with a pediment abutting on a pierced balustrading, Jacobean in character. The ground floor has an arched entrance, and the windows of the first and second floors have mullion and transom closed by a kneed architrave with bracketed consoles. These windows being vertically connected, a certain French aspect is imparted to the design. It is decidedly an experiment in style.

As to Chilham Castle, if we now turn from scanty records to the building itself for evidence, we gather the following observations. The structure is differentiated from a simple tradition of house by a unity of conception arising from the deliberate adoption of a complicated hexagonal plan, having an evident intention of creating a court effect at the back, visible by means of the open sixth side of the hexagon. The plan, moreover, shows the study of the outcome of the use of the hexagon, because the extended front and the management of the right and left wings are calculated to obviate any defects of the bare geometrical form. We have here, therefore, something much more complex than the triangle of Longford Castle, or the symbolic trinity of Rushton Lodge, or the geometrical fancies of John Thorpe's book. It is certainly significant that the pentagonal fortress palace of Cardinal Alexander Farnese, which circumscribes a circular court, was completed in 1559. The position is between Viterbo and Rome, about 9 miles from the former, approached by a road overhanging the Lago di Vico.

Inigo Jones in Italy in 1604 would doubtless hear all about it, even if he never saw it, as one of the remarkable works of the last half-century, and many have been led to experiment with a further development of its plan. Vignola's masterpiece of Caprarola is, of course, a purely classical building, with level skyline and flat roofs, and the utmost connexion is only that of a geometrical suggestion of plan. In Du Cerceau's book a French pentagonal château, Mors, which seems a clumsy derivative from Caprarola. It is suggestive that the father and grandfather of Sir Dudley Digges were mathematicians, the latter with a taste for applied geometry. It may have been easy, therefore, to interest the builder in Chilham in such a unique plan.

The house has been extensively altered both inside and out, and the history of its requires to be traced with some care. The entrance doorway is untouched, and, apart from the tapering of the pilasters, fashionable in Elizabethan and Jacobean times, quite Italian in character and well proportioned. The original oriel over is, however, known now only by old prints, and an elevation of 1784, drawn by a Mr. C. Graves and bound up in T. Hearne's MSS. book "Antiquities of Chilham, 1791."

The accompanying plan and dimensions the book agree with the further particulars that the windows on the returns were, three lights each, but with one transom in height. Graves's drawing thus gives us completely Jacobean treatment—an English bay in plan and elevation, the centre oriel having moulded corbels that look, however, rather Italian in sectional profile, and start from a console or capital just above the present entablature of the porch.

At Bramshill the oriel is of five lights with a single light on each side—seven in all. It also has three lights in height, while the adjacent windows of the façade have only two tiers. It is difficult to avoid the conclusion that the entrance bay of Chilham is a faithful revision of the famous frontispiece at Bramshill.

The original bay windows throughout the house have all been altered, and all but one of the Jacobean stacks have been rebuilt. The Great Chamber has been divided up into three rooms, and its ceiling lowered. Ten feet has been added to the length of the drawing-room wing. The outline of the lead roofs of the towers has also been tampered with. The Gothic restorationists of 1862 had little mercy on Jacobean work, whether in houses or churches. Jacobean interior work still remaining at Chilham there are two ceilings on the first floor of the two end rooms of the house. One of them suggests that the craftsman was

bled with his pendants, unless we are to suppose that they have been subsequently clumsily repaired. In both rooms the niches are of oak. The two lofty chimneys in oak in the same rooms with marble used jambs to the wide openings below are in detail and free from the overdone character of so much of the woodwork of the period. This incised marblework is to be found in Sir Antony Palmer's monument in the church at Chilham, as already mentioned. There is a similar fireplace opening the present servants' hall, but in a bad condition.

Of other remaining Jacobean work there is the main staircase, which is, it must be confessed, of a puzzling nature. The arcade of three arches on the first floor is of a pleasing proportion for internal woodwork, having under Doric columns on very tall pedestals; mounting each capital is a caryatid figure in Jacobean fantasy, with the usual strapwork ornamentation filling up the spandrels of the arches. The enormous handrail cut of oak beams no less than 10 in. square is, however, moulded in a very crude fashion, and rakes awkwardly into the columns and their bases. The balustrades, 3 in. square, are also elementary in their turned section. At first sight it looks as if the staircase had been altered, as the upper flights to the second floor are curiously supported by a Doric pillar carried up from one of the lower newels, but this is found elsewhere in early staircases.

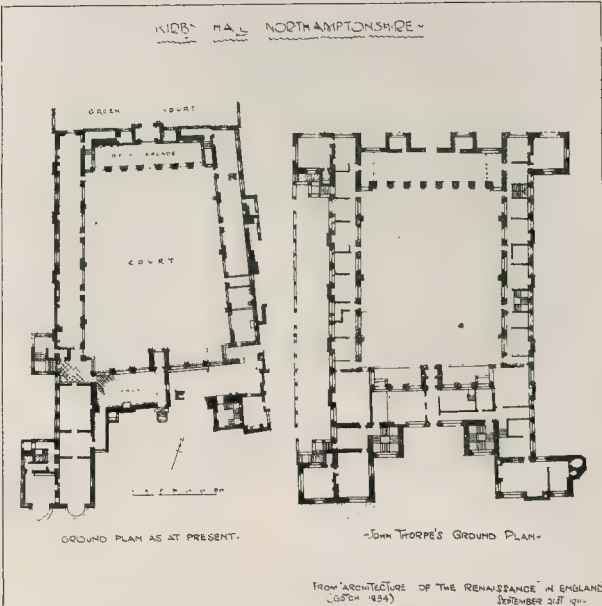
The monument in the adjacent church to Sir Dudley Digges, who died 1638, and to Mary Kemp, may, in conclusion, be referred to because it brings on the scene that familiar Inigo Jones's, Nicholas Stone. The relationship between these two men has not been fully unravelled, but we know that it must have been very close. There is a strong probability that Jones may have given a sketch for this monument, the idea of which expresses the sculptor's power of execution, as in the case of the famous Water Gate of York Palace.

St. John's College, Oxford.

To take next the case of the famous second quadrangle of St. John's College, Oxford, including the lovely garden front. There is, as far as I can find, no real grounds to doubt Inigo Jones's authorship. Messrs. Willis and Clark, in their "Collegiate History of Cambridge Colleges," accept it, as also Orlando Jewitt in his paper on late Oxford buildings, *Archaeological Journal*, 1851. The evidence, in fact, seems as close to the one as anyone can reasonably expect. Archbishop Laud had the work done in 1619, and his chaplain and biographer, Peter Heylyn, D.D., in his "Cypricus Anglicus," published in 1668, only sixteen years after Inigo Jones's death, describes the work as follows:—"Some have ascribed before enriched the College with public library, which made one side of his new building. That on the north consists together of several chambers for the commodation of the Fellows and other students. That on the east of a fair open walk below, supported upon curious pillars, and bearing up a beautiful gallery, opening out of the Library for meditation and discourse. Confronted on the other side with a like open walk below, and a suitable brick over that, raised up against the western wall of the ancient buildings. The whole complex fashioned in an excellent symmetry according to the exactest rules of modern architecture, not only graceful in itself and useful to that private house, but a great ornament also to the University.

On the 23rd of July in this present year 1631 he laid the first stone of this new building, and not intermitting it (but only during the unseasonableness of the following winters), till he brought it to an end according to the first design and proposition."

This account follows directly upon that of the works at St. Paul's, where Inigo Jones's name is twice given; first, with the title Surveyor-General to his Majesty's Works, and the second time with that of "Chief Surveyor of that Fabrick." He is recording that Inigo Jones laid the fourth of the foundation-stones of the great portico, which the king, in particular, paid for, as a substituted place of resort for the great nave, known as the Walk.



"The fair open walk below, supported upon curious pillars" at St. John's College has analogies with the arcades of the great Hospital at Milan by Filarete, and appears to be distinctly Italian. If you recall that St. John's is only eighteen years later than Wadhwan, you will be better able to estimate the personality of the designer. It is surely significant that the statues of Charles I. and Henrietta Maria in the centre niches of the frontispieces should be by Le Sueur, who also supplied the two Royal figures in the undoubted Inigo Jones screen, formerly in Winchester Cathedral. I have troubled you with this at length because of what follows. The Whitehall designs of 1619 are usually taken as marking out Inigo Jones as a pure Palladian, and from this standpoint other work attributed to him is judged. Eleven years later, however, he gives us this lovely creation, English, but with a fine shading of Italian ideals, as unique in its kind as some of Shakespeare's "sweetest wood notes wild." I expect you never find yourselves in Oxford without a visit, however brief, to see once again this beautiful garden façade, admittedly the finest that Oxford can show.

If you will reason out the design you will be struck with the boldness with which the apparent simplicity is reached. Much of the effect is certainly due to the large expanses of unwindowed wall. Practically the ground floor is given up to storage and to an internal cloister, and the long Gallery over is treated with a wonderful reserve, a concentrated strength on essentials, like the bays and gables, as foils to the rigid simplicity of roof and parapet of exceptional length of line.

Ecclesiastical Work.

There seems no reason to refuse the authorship of the Porch of St. Mary the Virgin to him as well. Purists may say what they like, the fact stares us in the face that this little work is a gem of its kind. One of those things that only a master can achieve with success. The chapel of Burford Priory, about 1635, seems to me work of an allied intention, but I have never heard of any attribution to Inigo Jones. The highly interesting church of St. John, Leeds, 1631-3, and St. Catherine Cree, 1628-30, illustrate the tendencies of the ecclesiastical architecture of the age.

The London church is much more advanced, having round arches with coffered soffits rising direct from the capitals of Corinthian columns, as is also the case with the cloister arcade at St. John's College. The clear-

story inside is divided into bays by pilasters, from which a vaulted ceiling of very slight rise springs. The outside of the church follows the usual lines of an old mediæval city church, but the semi-Perpendicular tracery windows are more or less framed by semi-classical mouldings having the character of architraves. As usual, the church is disfigured by bad colouring and glass, but to anyone freed from Gothic revival blinkers it will prove to be a highly interesting interior.

I could not find that Laud's biographer is definite on the subject of this church. On page 212, under date 1630, he says:—"St. Catherine Cree Church in London being ruinous and in great decay, had in some places been taken down almost to the ground, and rebuilt again by the parishioners at such time as Mountain was then Bishop, who suffered it to be made use of for religious offices without any new consecration of it, which, coming to the knowledge of Bishop Laud, he caused it for a time to be suspended from all Divine Service, sermon, or sacrament till it was reconsecrated by himself, which offices he solemnly performed on Sunday, January 16th." From this it does not appear that the popular idea that Laud was responsible for the church is correct. It does not affect Inigo Jones's authorship, however, as Bishop Mountain was in touch with him over St. Paul's, for whose recasing he had already obtained great blocks of Portland stone. The Royal Commission of 1620 for the repairs was, however, fast becoming a dead letter, and the Bishop being too sluggish for Charles I., was translated to Durham, to make room for his more active colleague of Bath and Wells.

Like the well-known doorway, however, to St. Helen's, Bishopsgate, the church of St. Catherine Cree seems to show the hand of Inigo Jones. The ecclesiastical policy of Charles and Laud, steering between Rome and Geneva, required precedents of a recognisable English character. These semi-Gothic churches are more typical of the age than St. Paul's, Covent Garden, where the design is related to that of the Piazza, in which it stood. In any event, we have in the chapel of Lincoln's Inn, 1617-23, existing, but added to, and in the church of St. Albans, destroyed in the Great Fire, examples of Inigo Jones's handling Gothic architecture. Please remember always that the splendid fan-vaulted staircase hall of Christ's College, Oxford, bears the date of 1640. Peshall says that Dean Fell with help of an artificer named "Smith of London" carried out the work.



Kirby Hall, Northants (1638-40).

A contemporary account of the capture of Basing House, where Inigo Jones was one of the prisoners of war, refers to him as contriver of the "Queen's dancing barn." Henrietta Maria's private chapel at Somerset House probably most closely reflected Inigo Jones's ideals of church architecture, it being, of course, well known that he was a Roman Catholic.

Part of the price paid for the Gothic revival has been ruthless destruction of the church fittings of this period. As a pupil I remember that, on being shown two choir stalls and canopies of Early Renaissance character in the library at Lichfield Cathedral, I innocently asked what had become of the rest of the stalls.

Crocombe Church illustrates the rich effect of a church still retaining work of this date. The Laudian font, now happily replaced in its original position in Canterbury Cathedral, is a highly interesting example. There is a fair number of pulpits with sounding-board canopies, and a few screens to be seen in our village churches, but they must be only a fragment of the church gifts of their generation.

Kirby Hall.

When we come to Kirby Hall, 1638-40, we find Inigo Jones completing the work of his predecessor, John Thorpe, 1570-72. Walking across the fields from Gretton Station we descend upon the house and see its long lines of grey walling, broken by masses of full-foliated trees, rising from grassy meadows, as a hare couched in bracken. There is a good deal yet to be learnt about the building process at Kirby. It looks very much as if Jones undertook there what he had already done in 1624 at Castle Ashby, i.e., to build a connecting block between two extended wings, completing a quadrangle in each case. Kirby, however, is the more extensive undertaking, and one that is more sympathetic to the older building.

If, as it seems reasonable to suppose, Jones built the entire side of the quadrangle, then he repeated the tall pilaster buttresses with only a changed proportion in the die of the pedestal, and a different system of ornamentation of the shaft. The carving of the caps and pilasters may well be local interpretations of a fine sketch.

I do not think that any drawings convey the effect of this quadrangular design. The impression it produced on me was very different to that which I had expected from its appearance on paper.

The pilasters are really buttresses 2 ft. 3 in. wide and 14 in. projection, and the wide spacing of about 39 ft. centres increases this effect. Also the sole connecting cornice is profiled with very square, strong projections, which give it an adequate emphasis, in spite of its elevational tenuity. This is an old Greek idea. Compare the architrave of the Temple of Diana at Ephesus, where no frieze intervened below the cornice.

I was not satisfied that Jones simply cut in the windows. There is a straight joint on the right-hand side at the angle running apparently straight up. Moreover, the outside elevation of this back block is clearly

all of this date, and is a very simple and strong piece of work.

The planning is an improvement on Thorpe, and the loggia with the stairs at each end must have been very effective.

In the garden court beyond are two quite Palladian doorways that only Jones could have done at that date. There are two side archways with niches in two tiers which are very interesting, recalling the so-called Arch of Janus at Rome. The well-known, highly-elaborated porch, leading from the hall into the quadrangle, presents an involved problem. The gable and ground-floor stages are clearly of the Thorpe date, but I am not satisfied again that Inigo Jones simply cut in the window. There are two points:—(a) The first-floor Orders do not line with those of the ground floor, and (b) the shaft of the column of this upper Order disengages itself from the wall in the same curious way as at Castle Ashby in the undoubted Inigo Jones's work. It is possible that the old gable was taken down and reset. Close examination of the masonry might clear up this point. A student could have a happy time measuring at Kirby.

Of Stanway Gatehouse, Gloucestershire, we have unfortunately no adequate record. On the evidence of the work it has been attributed to Inigo Jones. It is certainly very interesting in the photograph.

Inigo Jones's knowledge of Italian art can only be compared with that of Alfred Stevens, and in both cases it was a real absorption of the spirit and mastery of the principles, and, in both instances, the outcome was personal work and a lasting influence.

Essential Qualities in Work.

If, therefore, an architect of such profound Italian knowledge played with the current architecture of his own and the immediately-preceding age, we may well consider very carefully its underlying ideas. After all, no body of critical dogma has lasting value that is unrelated to actual examples. What we think we know derives from deductions based on works that have commanded admiration and retained it.

It behoves us to revise our creeds in the light of such examples, and see if by chance our exclusions are not becoming more important than our preferences.

Many years ago an A.A. visit led a student to take rough measurements, and then to draw up a more classical rendering of a certain fantasy of Jacobean date. On submitting the design to his learned master, he was told that such examples were incapable of refined treatment, because in so doing the essential picturesqueness was eliminated. You will, however, agree that this is a far-reaching dogma, because, if so, there is obviously a quantity obtainable only by a violation of the canons. Or, in the alternative, the canons are based on insufficient premises.

Whichever way you regard it, there remains this valuable conclusion, that we must search out the essential quality which charms in despite of our prejudice. In this spirit I suggest to you that much of the Jacobean fantasy in ornament is only a shading, or

texture, if you like that much abused word, over the surface of the architecture.

It plays the part of the apparently excessive lines of a mezzotint, preventing by a play of light and a fretted surface a severity of mass inconsistent with the fancy or gain of the general conception.

It is often asserted that the design of the Houses of Parliament lacks blank spaces of walling as a relief. If so built it would be a different, but not a better, building. The idea is borne out in all the great styles, by the Egyptian incised surface figuring, by Mexican and Indian and Far Eastern examples, quite as much as by the Saracenic geometrical patterning.

The Spanish plateresque is cousin to the Jacobean, and the Jesuit, in his way, was aiming at an expression of the same feeling.

I hope I shall not run too counter to your up-to-date ideals, but it is borne in upon me that as architects we may be too much led by the self-consciousness of modern schools of ornament.

The conditions of architecture are its own. Long training in actual handling of work in stones, bricks, and plaster, and other more or less rude materials, can alone give that instinctive feeling that differentiates old ornament from the clay-modelled decoration that we so often see stereotyped on our buildings.

After all, sun, wind, rain, and frost are our agents and our masters. In the long run Nature will have its way, and it lies with us to agree with forces that we can never escape.

Work at Oxford.

The architects of the Perpendicular work in England knew what they were about when they used throughout a system of panelling that we often hear unheedingly stigmatised as mechanical. I think the continued attempt at this effect in the rebuilt Jacobean quadrangle of the Bodleian at Oxford is most instructive.

The first stone of the west side of the Bodleian quadrangle was laid July 16, 1610, and it was finished 1612. The first stone of the other three sides was laid March 30, 1613. The tower, with its tiers of Orders, was entirely new, and the whole work seems to have been completed 1618. On this occasion King James came in for a compliment so golden that even his eyes blinked. The Royal image in the niche hands his recent book to Fame inscribed, "Hæc Habeo quæ scripsi," and another to Alma Mater, inscribed, "Hæc Habeo quæ dedi," the whole being solid gilt in its pristine magnificence. Thomas Holt, of York, who died in 1624, and was buried in Holywell Churchyard, is stated to have been the architect, the builders being J. Acroft, of Halifax, who died 1613, and J. & M. Bentley, who were also employed at Merton. Holt was entered in the University register as a private person, age forty, October 30, 1613, described as "Faber Lignarius." Col. Nov. His daughter married Dr. Sam. Radcliffe, Principal of Brasenose. It seems questionable to take the Latin as equivalent to a carpenter. The same desire to retain the Perpendicular panelling is found in the frontispiece of Merton, 1609-10, by the same architect and builders.

Wadham, which also boasts a sufficiently similar frontispiece, is an entirely new college, begun April, 1610, and completed July, 1613, and, as it has been little altered since, it best represents the collegiate ideal of its date. Mr. T. Jackson, R.A., in his very full and interesting account, discredits the attribution of the work to Thomas Holt, and believes that, William Arnold, probably a brother of the keeper of the building accounts, John Arnold, was the working architect. He heads the pay list with 1l. per week, which Mr. Jackson takes as equivalent to 5l. of our money. Nicholas Wadham and Dorothy, his wife, founders, were of Somerset, and masons were brought from that county for the work, probably owing to the rush of work at Oxford at the time.

The famous Dr. Wilkins was Warden during the Commonwealth, and entered Christopher Wren on June 25, 1649. The architecture of the College is somewhat dull, and the treatment of the Orders heavy and mechanical. It has none of the audacity and sparkle that distinguishes the work, only eighteen years later, at St. John's.

THE BUILDING TRADE.

"ALLOW" OR "PROVIDE"?

QUESTION that often arises in dealing with the settlement of accounts for building work is, how far the architect is justified in paying for items included in the contract and fixing the amounts allowed in the contract for these items.

Two words quoted in our heading, a bill of quantities have a difference in connexion that is not always fully appreciated, and this lack of appreciation is sometimes responsible for trouble that easily be avoided, and we are prompted with the matter from having had to do to our notice an instance of this, upon which our opinion has been asked. The bills of quantities for certain work in an item, "Allow for payment" of certain sums which were not mentioned, but necessitated inquiry (in this case a public body) on the part of the tenders as to what those payments were likely to be. Acting upon the information then given, the builder put sums opposite these items. When these items were due to be paid it was found in one instance in particular, the sum allowed was greatly in excess of the sum needed. The client, acting on the architect's advice, paid this sum himself, and the architect deducted the amount the builder allowed in his price from the contract, thus depriving the builder of the large amount of profit which the item carried. The builder protested that this was unfair, and demanded that he should be paid the difference between the sum paid by the client and that allowed in his priced quantity, or, in other words, to deduct only the sum paid by the client.

The item clearly states "Allow for payment" the onus of arriving at the sum to be paid rested with the builder, who thus placed upon himself the liability to pay for this particular item. He was, consequently, entering into a speculation, and as the client was concerned, and might be liable to pay a sum larger than the one he had put against the item in his priced bill. Had the item been put in as a provision and a definite sum mentioned, the usual procedure would necessarily have been followed, as by stating a definite amount, element of speculation would be removed, apart from the fact that this item is provided for in every building contract. To select a particular item, and with it in the way above mentioned, is obviously unfair, and we think the client has some difficulty in establishing a case to act by law. To our mind it is a question that should be looked at from a legal aspect, whatever the legal position be. Had the position been reversed the builder would have been equally justified in claiming an extra upon the item, but we do not think that the client would have gained such a claim, and we should hold that he would have been quite justified in making it.

The case certainly suggests that the client, when he mentions the client, it is clearly understood that he is acting through his architect or under his advice has looked at the bills, and, finding an item highly profitable, has taken advantage of the fact. The action is a justification for what is demanded upon by some architects as an objectionable demand on the part of a contractor. It is provided that a workman shall not be deemed to have failed to fulfil the statutory conditions by reason only that he has declined (i.) an offer of employment in a situation vacant in consequence of a stoppage of work due to a trade dispute; (ii.) an offer of employment in the district where he was last ordinarily employed at a rate of wages lower, or on conditions less favourable, than those he habitually obtained in his usual employment in that district, or would have obtained had he continued to be employed; or (iii.) an offer of employment in any other district at a rate of wages lower, or on con-

ditions less favourable, than those generally observed in such district by agreement between associations of employers and of workmen, or failing any such agreement than those recognised in such districts by good employers."

Thus, before one single workman can be held entitled to a payment of 7s. a week for a limited period an inquiry has to be set on foot in which the workman has to prove his employment for the statutory period, his unemployment since his application, the amount of benefit already received, his capacity for work, and his inability to obtain it. Whilst this latter point involves a consideration of the various offers of work made to him—as to which his *ipse dixit* is likely to be the only evidence—his habitual conditions of employment, or the standard of wages and conditions of employment prevailing in any district where he has attempted, or says he has attempted, to obtain employment.

Under Clause 63 there are certain disqualifications, but by whom the evidence of these is to be offered is not quite clear. These disqualifications are:—

(i.) That the workman lost his employment by reason of a trade dispute or lock-out directly affecting him.

(ii.) Losing employment through misconduct or through voluntarily leaving employment without just cause.

(iii.) Having been convicted of an offence punished by imprisonment without the option of a fine.

(iv.) Being inmate of a workhouse, etc.

Furthermore, it may be pointed out that if unemployed benefit is refused or stopped the matter may have to be considered by three tribunals.

May it not well be asked: Is this legislation of a practical character? The legislature nowadays sets up an expensive steam hammer to crush each individual walnut.

The setting up of a standard of wages for those whose services are required, and who may be ground down by competition, has become a recognised principle of late years, but the setting up of a standard rate of wages and conditions of employment in the case of unemployed workmen is undesirable when recognised by statute. It is a gigantic system of protection devised in the interests of those who desire to abolish competition of any sort in the labour market, and it is likely to have as unfortunate influence on the unemployed themselves. In other walks of life persons thrown out of employment take what occupation they can get to tide over evil times, and are thankful to do so, but in the case of workmen—often higher paid than clerks and other employees—the legislature is encouraging the idea that, unless they can obtain work on unvarying conditions with trade union rates of pay, they are justified in remaining idle and in accepting benefits provided, in part at least, by the State.

Unless some simpler principle can be devised for unemployment insurance, and one less likely to hinder employment, it is clear that this portion of the Insurance Bill can never be extended to other trades than those at present selected for experiment. Meanwhile, the selected trades are being placed under severe disabilities.

At the conclusion of the Committee stage, some alterations were made in the sixth schedule of the Bill which especially affect the building trade.

In the sixth schedule originally "building" was defined as follows:—"That is to say, the construction, alteration, repair, decoration, or demolition of any building or any part thereof," a definition which in the main very much followed the terms of the Factory Act. There was some discussion on this definition, and finally the clause was amended by omitting the words "any building or any part thereof," and inserting the words "buildings including the manufacture of any fittings of wood of a kind usually made in a builder's workshop or yard."

Under sub-section (i.) it is not clear how long the qualifying period of work—twenty-six weeks—is to continue as a qualification, whilst sub-sections (ii.) and (iii.) in a way place the workman on the horns of a dilemma; he has to prove that he has been continuously unemployed since his application and that he is unable to obtain work; therefore, once having put in his application which may entitle him to 7s. a week, in the interval he is hardly likely to be willing to take any small casual employment that may be offered. The proviso to the above clauses is, however, that which will involve the most difficulty in practice. This proviso, as amended in Committee, now reads:—"Provided that a workman shall not be deemed to have failed to fulfil the statutory conditions by reason only that he has declined (i.) an offer of employment in a situation vacant in consequence of a stoppage of work due to a trade dispute; (ii.) an offer of employment in the district where he was last ordinarily employed at a rate of wages lower, or on conditions less favourable, than those he habitually obtained in his usual employment in that district, or would have obtained had he continued to be employed; or (iii.) an offer of employment in any other district at a rate of wages lower, or on con-

UNEMPLOYMENT INSURANCE.

THE extreme difficulty of devising a practical scheme for insuring unemployed persons became apparent when Clauses 62 and 63 of the Insurance Bill came to be considered by the Grand Committee. Under the provisions of the Bill, for a workman to qualify for unemployment benefit, he has to prove:—

(i.) That he has, since the commencement of the Act, been employed in an insured trade during each of not less than twenty-six separate calendar weeks.

(ii.) That he has made application for unemployment benefit, and has been continuously unemployed since the application.

(iii.) That he is capable of work, but unable to obtain employment.

(iv.) That he has not exhausted his right to unemployment benefit.

Under sub-section (i.) it is not clear how long the qualifying period of work—twenty-six weeks—is to continue as a qualification, whilst sub-sections (ii.) and (iii.) in a way place the workman on the horns of a dilemma; he has to prove that he has been continuously unemployed since his application and that he is unable to obtain work; therefore, once having put in his application which may entitle him to 7s. a week, in the interval he is hardly likely to be willing to take any small casual employment that may be offered. The proviso to the above clauses is, however, that which will involve the most difficulty in practice. This proviso, as amended in Committee, now reads:—"Provided that a workman shall not be deemed to have failed to fulfil the statutory conditions by reason only that he has declined (i.) an offer of employment in a situation vacant in consequence of a stoppage of work due to a trade dispute; (ii.) an offer of employment in the district where he was last ordinarily employed at a rate of wages lower, or on conditions less favourable, than those he habitually obtained in his usual employment in that district, or would have obtained had he continued to be employed; or (iii.) an offer of employment in any other district at a rate of wages lower, or on con-

The Chairman,

in putting the vote of thanks to the meeting, said that Mr. Bolton had put before them a picture of that interesting development of English architecture when it was emerging from the Gothic medieval period into one concerning which we had fuller details. It would be most enlightening if we could have a list of architects, as Mr. Ambler had suggested, and perhaps Mr. Bolton could tell them if such a list existed. It would be interesting to the student to have such a list when travelling about the country and puzzled by the mixture of fine work sometimes found in one building. For instance, at Burleigh there was the staircase—a fine architectural feature and a most remarkable piece of design, reminding one of the period of Henry III. and Henry IV. of France. In the same way, close by in the Manor House—a house with a most interesting plan—the windows almost throughout had pediments of pure François Premier character. He did not think there were any other windows like them in England, and he certainly had never seen drawings or photographs of English work which resembled them.

The vote of thanks having been heartily agreed to,

Mr. Bolton,

in reply, said that at the present time the proposed list of architects was practically hopeless.

JOHN SMITHSON - MARR.

bur. at Bolsover 16 Nov., 1694

Huntingdon Smithson
of Bolsover, Co. Derby.
b. 1638, an architect

Isabella, dau.
of Thos. Hall, of
Barlow, Leics.

Margaret Smithson.
bur. 31 Aug., 1632.

William Smithson.
bapt. 1 Aug., 1637.
bur. 27 Feb., 1689.

John Smithson
of Bolsover, gent.;
ob. 1716, at 78.

Mary Hayford,
of Wortley Force.
mar. at Peinston
16 Nov., 16—

Charles
Smithson.
bapt. 15 July,
1642.

Huntingdon:
b. 1679; d. 1721.

Ann:
bapt. 1685-6;
mar. Jervis Norton.

Isabella:
bapt. 1691; d. umm. 1711.
(She bequeathed the sum
of 2,000l. to the poor of
Bolsover.)

Three children
died in
infancy.

They had a good many names, but, beyond a certain point, you could get no further. One found that Simon Basil, for instance, on such and such a day had an order to go to Hatfield; but where he was born, whether married, and so on, could only be dug out by chance. It was only by chance that the valuable reference to John Thorpe which he had given had been found. The late Professor Aitchison had an extraordinary knowledge of this kind, gained by reading all sorts of out-of-the-way books, but it was never systematised. Mr. Harry Sirr had worked out valuable facts about the Thorpes and Smithsons. The Civil War caused an enormous gap, and but for the war we should know a great deal more about Inigo Jones than we do, and some of the best facts about him were the ill-recorded memories of those who outlived the war. As to accounts, all those about Hatfield were known, and those of Wadham were given by Mr. Jackson in his book, and in other cases the college accounts were full as a matter of L.S.D. As to Jacobean decoration, he had shown on the screen the gilt chamber at Holland House and also the staircase at Knole. He did not see how architecture could be studied properly without some reference to political and historical questions. For instance, you could not understand how designs for Whitehall came to be prepared, and then were not carried out unless one looked to some extent to history and the social and political aspect of the time. There might be some who wished to teach architecture as a matter of construction without any reference to history and politics, but it would not suffice throughout the Renaissance period, at all events. As to Du Cerceau, if they started discussing him they would not get away that night. As to Smithson, he belonged to the Elizabethan rather than to the Jacobean period. It did not follow that Robert Smithson was the architect of Wollaton House; there was reason to think that the designs were made by John Thorpe, and that Smithson carried them out. The epitaph seemed to mean that he was an agent for the family—House being used in that sense. He did not think he had said it was easy to distinguish between Elizabethan and Jacobean. It was possible to distinguish between the

work of Thorpe and Inigo Jones. In different localities the work varied. Looked at however broadly there was a distinct difference, and of this he had tried to render some account.

We have received the following communication from Mr. Louis Ambler, who took part in the discussion on Mr. Bolton's paper:—

"THE THREE GENERATIONS OF SMITHSONS, ARCHITECTS IN THE REIGNS OF ELIZABETH, JAMES I., AND CHARLES I.

My authorities for the particulars of the above are the following:—

1. The inscription on Robert Smythson's tombstone in Wollaton Church, Notts, viz.:—

"Here lyeth y^e body of Mr. Robert Smythson, gent., Architect and Surveyor unto the most worthy House of Wollaton with diverse others of great account, he lived in y^e fayth of Christ 79 years and then departed this life y^e XVth of October A^{no} D^{omi} 1614."

(In those days "i" and "y" were used almost indiscriminately, and the same person's name was sometimes spelt with an "i" and again with a "y.")

The pedigree of the Smithson family (of Bolsover, within 20 miles of Wollaton) in the Harleian Society's publications, Vols. 39 and 40, "Familie minorum gentium":—

3. Horace Walpole's "Anecdotes of Painters in England," third edition, 1797: "John Smithson was an architect in the service of the Earls of Newcastle. He built part of Welbeck in 1664, the riding school there in 1623" (a footnote says, "as appears by his name over the gate"), "and the stables in 1625; and when William Cavendish, Earl and afterwards Duke of Newcastle, proposed to repair and make great additions to Bolsover Castle, Smithson, it is said, was sent to Italy to collect designs."

4. The collection of Smithson's drawings belonging to Colonel Coke, of Brookhill Hall, including some plans of Bolsover, Welbeck, Worksop Manor, Clifton, Wollaton, and other houses in Notts, many of them signed or initialed "Jo. S." (John Smithson).

5. The inscription on Huntingdon Smithson's tombstone in Bolsover Church, viz.:—"Reader, beneath this plain stone buried (lie) Smithson's remainder of mortality. Whose skill in architecture did deserve A fairer tombe his memory to preserve; But since his nobler gifts of piety To God, to men justice and charity, Are gone to Heaven a building to prepare Not made with hands, his friends contented are."

He here shall rest in hope till th' world shall burn, And intermingled ashes with his urn.

Huntingdon Smithson,

Gent.

Obit. *ix*bris. 27, 1648."

(November).

6. Walpole confuses John and Huntingdon Smithson, father and son, to some extent, saying that the former "died in 1648, and his son, a man of some skill in architecture, was buried in the same grave," where John Smithson was buried in 1644. Samuel Pegge, the antiquary, in his letter to the Duke of Portland, September 25, 1785, describing Bolsover Castle, says that Huntingdon Smithson, who was living at Bolsover in 1601, was its architect.

Most probably he was associated with his father in the work begun by Elizabeth, Countess of Shrewsbury (Bea of Hardwick?), shortly before her death in 1607, and continued by her second son, Sir Charles Cavendish and completed by him in 1616. This was the rebuilding of the main structure on the old foundations and the external pavilions. Sir Charles died in 1617, and his son William (afterwards Earl Marquis, and Duke of Newcastle) built the detached pile, now in ruins. On a stone in the building is engraved "H. S. 1629," no doubt referring to Huntingdon Smithson, the architect.

The above paragraphs 2, 3, and 6 are from notes by Mr. Walter L. Spiers in Vol. XVI., third series, *R.I.B.A. Journal*, and 4 is from a volume by Mr. J. Alfred Golch in the same

SCHOOL BUILDINGS.

THE annual report of the London County Council, just issued, states that, while of secondary importance compared with the teaching staff, the question of the condition and sufficiency of the school buildings must always be one which calls for the continuous action on the part of the Council authority. With the changes in educational ideals and the movements of population which are ever taking place school buildings rapidly become out of date, or, in some cases, even unnecessary, and therefore the local authority in a town of the size of London must always have before it difficult and costly building problems. The point has often been raised as to whether it is advisable to build any school which will last for more than, say, twenty years, since in two decades opinions change so rapidly in regard to structural ideals that a school building of this age is, as a rule, looked upon with disfavour. Thus, twenty years ago, schools were built in such a way that as few classrooms as possible had a southern aspect, presumably because it was thought that in summer in such rooms the heat would be oppressive, whereas if rooms faced east and north they could always be kept warm by artificial means. Public opinion has now changed completely on this matter, and the extreme importance of securing as much sunlight as possible for the children is generally recognised. Consequently, it is now the custom to plan the schools in such a way that a maximum amount of direct sunshine is brought into the teaching rooms. Similarly, during the time which has elapsed since the School Board began to plan school buildings forty years ago ideals in regard to sanitation, lighting, ventilation, heating, cloakrooms, size of rooms, provision of halls, teachers' rooms, etc., have completely changed, and at no time during the history of education have opinions been changing so rapidly as at the present. It is obvious, therefore, that the Council is faced with a very serious problem in dealing with old buildings which it inherited from the School Board. There are in the county a number of schools which were erected before 1880, and, while many of these have been improved from time to time, there are still over 100 which for one reason or another must be regarded as unsatisfactory. The policy recently adopted by the Board of Education of restricting the number of pupils on the register of any one teacher to sixty has resulted in the loss of some 13,000 effective school places. This, coupled with the desire to render the old schools brighter, healthier, safer, and more comfortable for teachers and pupils, has created great activity in connexion with school buildings. In the new schools completed during the year the outstanding feature is the size of the classrooms, which are planned to accommodate not more than forty pupils in the case of senior departments, and not more than forty-eight in the infants' departments.

When the plans of new schools are under consideration the question of the necessity for erecting a domestic economy centre, or handicraft centre, on the same site is carefully inquired into, and if there is found to be need for such accommodation the erection of the necessary buildings is included in the contract for the main school. Where it is likely that a school will require to be enlarged in the near future it is the practice to build the walls of the requisite size for the number to be accommodated in the completed school. In such cases cloakrooms, teachers' rooms, lavatories, etc., are also built complete, and this provision for future requirements, while it adds to the initial cost, is really a considerable saving to the Council, as when the additional classrooms are erected the further cost is only about 7/10s. per place.

Thus, by the action of the authorities, the present ideal of school planning has been evolved. The large schoolroom, previously encumbered with desks, and occupied probably by two, three, or four classes, has given place to the hall; sufficient classrooms are provided so that each class in the school shall have its separate classrooms, the amount of floor space provided for each child has been raised from 8 sq. ft. to 10 sq. ft. for seniors, and 9 sq. ft. for infants, and the amount of cubic space from 80 ft. to 100 ft.; and adjuncts have been provided in the way of art and science rooms.

Ill-Regulated Ornamentation.

It is certainly true that the study of Elizabethan and Jacobean architecture has been judged by the excessive attention given to its often ill-regulated ornamentation; as, for instance, in Mr. C. T. Richardson's book. There is nothing in the repeated and monotonous patterns, the majority of which are remarkable more for their complexity than for their interest or their refinement. The same work in many cases that verges on the lower forms of Oriental and savage art.

It is impossible to dwell in or near this cheerful house without the life becoming dead, and even diverted from its course, by its imperious influence. The cold and serious power of the classic architecture added to the rich libertine fancy of the Elizabethan, treading unrestrained and unveiled the maze of nature and of phantasy, leaving the classic purity of outline with exquisite tracery of fairy life.

Every door and window and pilaster is encased and clinging the arabesque carvings of scrolls and fruit, of graceful figures in fantastic forms and positions, all of infinite variety, all full of originality, of life, of power, and of character, all of exquisite workmanship.

The effect of the whole is lightness and brightness while the eye is charmed and the sense lulled with a luxurious satisfaction at the ending wealth of beauty and lavish ornamentation. But, together with this delight to the eye and sense, there is present to the mind something not altogether painless, of oppression, of the mating of incongruous elements, arousing, as it were, an uneasy consciousness, and affecting the soul somewhat as the overpowering perfume of tropical vegetation affects the senses.

It is how the author of "John Ruskin" expresses the effect of work such as that in the great gallery of Knole, and the Jacobean houses, which, as you may see, supplied the basis of his description of the ideal Renaissance Palace.

The author does not fail, however, to lay the key in answer to the abuse of the style.

"I speak too harshly of these things," he writes. "I see nothing in them but the highest of humanity, differing in its outward aspect in different ages, but alike in meaning and audible voice. This house is itself a representation of the world of the past, and reality combined, of the material and the spiritual, of the animal mingled with those half-faint and fitful glimpses of the unknown life, the verge of which we stand."

Naturally, if we adopt only a standard of decorative design, such as we see in, say, the College Chapel, screen at Cambridge, the level of the original examples, such as we may see at Perugia and Verona, is debased, then the great body of Jacobean work must strike us as coarse and debased.

General Considerations of Jacobean Work.

Jacobean work varies enormously, fluctuating between the fretted, bossy, intricate, and over-decorated types that prevailed in Elizabethan times, and better models inspired by the strong tendency towards ideals of classic

at Aston Hall, 1618-35, the gallery ceiling rises far apart from the remainder of the room, and even from the frieze immediately below it.

The same is true of the panelling and woodwork of these great houses, which at times, with multitudes of arched panels, now again seems an anticipation of the simple and clear work that would later on supersede it.

In the complete picture of the Jacobean house we used to reassemble the furniture, the tapestries, pictures, and dress of the period. The Burleigh portrait of Elizabeth I. gave us a clue to the all-round decorative aspect of the age. We are now brought to surroundings of a patterned carpet, reflecting in a northern clime the sun of the springtime of the Renaissance.

Naturally, we may well be careful in ascribing ignorance to some of these Jacobean architects as the motive of their handling of classical detail. There will be found in the rest of it a wit and humour of treat-

ment which implies knowledge, observation, and thought, and is as legitimate as any other form of fancy or burlesque.

It stands to reason that it can only be attempted with success by those who are masters of their subject-matter. The actual degree of refinement is in the discretion of the artist, and it will be a reflection of the taste of the age. It has ever been the special prerogative of genius to clothe truth in the garments of motley.

The great mantelpieces, the friezes set out with symbolic figures, the great wall and altar tombs with their strangely-involved eulogistic inscriptions are all expressions of the mood of the moment, outlets for the pedantry and bombast of the age. There are, however, instances where these brave shows touch high levels and awake deep feelings, as though they were already tinged by the scaffolds of the Civil War.

We do an injustice to this half-century if we are alive only to its materialistic pomp. The age itself awoke with a start at the sudden drama of the fall and execution of Strafford, to the fact that no temporising policy could now avert the dire calamity of civil war. Up to this point leaders had changed sides with amazing levity, and under strong suspicion of personal gain. Sir Dudley Digges and Lord Strafford were instances, but now the trumpet had sounded, the lists were closed, and the fanatics on both sides forced on the fatal issue. The Jacobean age closes with the violent deaths of Buckingham, Strafford, Laud, and Charles, with a Court in exile, a ruined nobility and gentry, and a broken and scattered school of artists.

The misery and bloodshed of the Civil War affects us like the closing scene of a great fire, when the stately building falls with a crash, and the whole sky is reddened with the reflected glare.

The conclusion of the whole matter is that we inherit from this half-century some unique and lovely English homes, and derive therefrom a pleasure that is certainly no mere outcome of sentimental associations. Places like Fountains Hall, Abbot's Hospital, Kirby Quadrangle, St. John's, Warwick, Moyn's Park, and the garden front of St. John's, Oxford, to enumerate those most likely to be known to you all, produce an impression that no prejudgment can efface.

The forces behind nationality are exceedingly strong, because they are anchored in a past which we cannot absolutely lay bare and can only dimly appreciate. In a true sense the dead speak and live with us, and our work must be conditioned by what they have done. If, in the end, it is to fall into its place as links in the long chain, neither of whose ends are visible."

Mr. Laurence Weaver, F.S.A.,

in proposing a vote of thanks to Mr. Bolton, said he had been very much impressed by the evidence in reference to Inigo Jones—not that it was new—working in the vernacular manner such a long time after his full Palladian outbreak at Whitehall. It was perhaps rather a shock to some of them to realise so effectively that Inigo Jones was doing the traditional work, and doing it in such an efficient way, long after his Palladian work put everything else in the background. He appreciated what Mr. Bolton had said as to the interaction of architecture and history. If we thought of buildings from the point of view of people who lived in them we should have a fresher interest in the buildings themselves.

Mr. W. Curtis Green,

in seconding the vote of thanks, said that Mr. Bolton appeared to him as the ideal student, for he did not think too much about the superficial aspect of a thing, but tried to or did get behind it to what lay beyond. Mr. Bolton had what, for want of a better word, might be called a sense of architectonics, and he had told them that he tried to minimise the importance which ornament so often took in our view of what was good or right in architecture, and remarked that ornament often concealed architecture, and that we needed to clear our minds of Gothic and Classic arch and lintel, round and pointed, and get to the building itself, to the idea of architecture, and that we could only do by studying fine architecture. Mr. Bolton mentioned Du Cerceau's book and writings, and he (the speaker) was rather surprised that the lecturer did not go further into the comparison between

Jacobean and François Premier work, and draw some analogies between the two; and in this connexion he would suggest that our English work of some part of the Jacobean period was comparable with the François Premier work. Professor Blomfield said in his recent book that in considering this Jacobean work a cool and critical study of these buildings showed that they were not the last word of consummate art, but the half-articulate work of beginners trying to express themselves in unfamiliar language.

The object of such an interesting and delightful paper as Mr. Bolton's was to show how to study old work—to show the necessity of soaking ourselves in old work, and, as far as possible, that soaking should be in one period, one building, or one group of buildings, so that we may, however many months we might have of it, thoroughly master one great period of design, and then we should be in a position to appreciate and to understand any period. We should begin then to understand where the source of inspiration came from in the men who did the work, and we should begin to get the source of inspiration for our own work in our own time within ourselves, and within the people for whom we have to work and with whom we work.

Mr. Yates

asked if Mr. Bolton had come across any painted decorations in addition to the case he mentioned at Knole. We knew that about 100 years before the Jacobean period there was a lot of painted decoration, brought to a fine state of perfection, in the screens of Norfolk and Suffolk, but the art seemed to have disappeared in England, and he could give no reason for it.

Mr. Laurence Weaver

said there was a coloured ceiling at Pinkie House, Musselburgh—a house built in 1613 by the Lord Chancellor of Scotland. It was said that this ceiling of the long gallery was the result of English influence.

Mr. G. S. Mileham

said the period under discussion was of the greatest importance, because it was the first time that architecture had become really a part of the life of the village as well as the life of the monastery.

Mr. Andrew Oliver asked if Mr. Bolton had come across any of the old building accounts of these great buildings.

Mr. Bolton: There are the volumes of the Hatfield accounts, the State papers.

Mr. Louis Ambler,

in supporting the vote of thanks for the admirable and scholarly paper, said could Mr. Bolton give them the date of Moyns Park? The whole of the design appeared to be Tudor, not Jacobean, although there might be Jacobean additions and alterations. Taking the whole subject of Elizabethan and Jacobean, he understood Mr. Bolton to say that we could certainly distinguish between them. Personally, he was not able to do that, for he found that in different parts of the country that what we might take at first glance to be Elizabethan appeared on further examination to be Jacobean and vice versa. He thought it was largely a matter of locality: in the North the Elizabethan style, as we know it, was not so much developed at the same early period as it was in the southern counties. Take, for instance, Fountains Hall, which was built in 1611. What was to differentiate it absolutely from the Elizabethan buildings of, say, 1580 or 1590 in southern counties? Take Hardwick Hall, which was built about 1590 to 1597, as Mr. Bolton truly said, it was extremely like Hatfield, except it had not the wings; the centre was very similar to Hatfield, which was built twenty years later. The Inigo Jones influence did not appear to have made itself felt in the northern counties until after 1680. He had rather hoped that Mr. Bolton would have mentioned the names of more architects who had been connected with certain buildings. Mr. Bolton had given some information on the point, but he did not mention the Smithsons, who were well known in the Midlands, being three generations of architects—Robert Smithson, born in 1535 and died in 1614, who on his monument was described as architect and surveyor to the House of Wolston; John Smithson, who was the architect of Bolsover Castle and portions of Welbeck; and his son, Huntington Smithson, who continued the work, the former being buried in 1634 and the latter in 1648, both in Bolsover Church.

It seems obvious that some questions may arise in connexion with this definition. The Solicitor-General expressed the opinion that drainage work would come within the term "building," and also the fitting of a corrugated-iron roof; the masons employed on the mouldings would be included, but not brick-makers. The men engaged in the manufacture of the iron roof would be included under paragraph 4, "Mechanical Engineering."

"Saw milling, including machine wood-work," was brought within the category of insured trades, and the definition of "mechanical engineering" was amended so as to read, "mechanical engineering, including the manufacture of ordnance and firearms, iron founding, whether included under the foregoing heading or not."

It seems to have been admitted that the drafting of these definitions would require further consideration, and it is to be hoped that it may receive it, as it would be regrettable were this part of the Bill to occasion litigation of the character that has arisen, both under the Factory Acts and the Workmen's Compensation Act of 1897 in connexion with similar definitions. The rates of benefit have been equalised in all insured trades, and raised to 7s., with some special provisions in the case of workmen under eighteen years of age.

FORCED BUILDING LABOUR IN THE MIDDLE AGES.

THE impressment of men for the purpose of serving in warfare is well known, but it is probable that few builders are aware of the fact that the impressment of carpenters, bricklayers, masons, and other builders' workmen was more or less common in England in the Middle Ages.

The following three mediæval documents show very clearly that the greater number, if not all, of the builders' craftsmen in the Middle Ages were liable to be pressed involuntarily into service.

Our first document is of the time of Richard III., and of the year 1483. This is to be found on page 116 of the British Museum manuscript Harl. 433, and is a copy of a warrant from the King. It is addressed to mayors, sheriffs, and others demanding assistance for Thomas Nevill to "take" bricklayers and labourers to serve the bricklayers:—

"Richard &c. To all Mairs, Sherifes, bailieffes, constables and all other our officers true liegemen & subgettes, greeting. Forsomuche as we have commaunded & appointed our well beloued seruaut, Thomas Neuyll, to doe make for vs certayne brickwerke at our towne of Cardinale & other places. We desiring the best performing of the same have yeven unto our said seruaut power, licence & auctorite by these our lettres, to take as many artificers expert in breke leyne and labourers to serve them for our vases as vnto hym shal be thought necessarie & expedient for the speedy avancement of our said vases. We therefore wolle & desire you and also charge you that vnto our said seruaut in due execution of the said auctorite ye will be helping favouring & assisting in all that ye gladly may. And if any persone, or persones, wolle of wilfulnesse withstande or disleue the same, that than ye wolle committe them to our wards, to go to remedy vnto the tyme they be conformable to do vs service. And in yevening your assistance to him ye shall mynystre vnto vs full good pleasure. Yeven &c. the XXth day of Septembre, anno primo."

Our next document is from a Record Office MS. [Eucher, Acc. 477-12]. The date of this authority to "arrest and take up" workmen is 1538. The holder of the commission was a carpenter (as we know from the mention in the same volume of his employment as such). His authority to take workmen was probably understood, though not expressly stated as being such, to be limited to the taking of carpenters alone:—

"Also to John Maphorne for his costes & expensis ryding to Eton Bridge, Lyngheld, Blechyngton, Dorkyng, Rygate and Hovey, with the Kinges commission to rest [arrest] and take up workmen by the space of XIII daies, at vid. the day our beside his daies wages for hymself & his horse. . . . Vis. Vid."

Our third and last proof of the fact of the more or less common custom of impressing men for building labour is taken from the last-mentioned MS. In this case it will be seen that the holder of the commission to arrest and take men was a mason. We may reasonably

suppose that in this case the authority was restricted to the taking of masons only:—

"Also to Thomas Forard, freman, for his costes & expensis ryding with the Kinges commission in Glostershire, Wilsbere, Herefordshire & Wossershire to rest & take up workmen by the space of XXX daies, at VIIIId. the day for hymself & his horse ouer & byside his daies wages. . . . XXs."

CEMENT IN EGYPT.

THE consumption of cement in Egypt is covered partly by domestic production partly by importation. The latter, as with other building materials, has greatly increased since the beginning of 1911. Business in Egypt has improved most happily; and with this improvement comes an increased activity in private building. In addition, however, there is in course of erection a large number of public buildings of importance. The length of time required for their construction will determine the supplies required.

The following table gives an idea of the cement imported from about a dozen different sources. The tons are probably metric, of 2,204 lb. average each. The present Egyptian pound of 100 piasters is worth a little more than 11. sterling:—

Source.	1908.		1909.		1910.	
	Tons.	£s.	Tons.	£s.	Tons.	£s.
Great Britain.....	28,650	50,523	12,822	24,919	35,924	64,417
Germany.....	135	253	636	1,151	5,192	10,324
Austria Hungary.....	545	788	203	444	2,545	4,867
Belgium.....	29,960	45,468	29,383	45,338	33,266	44,886
Spain.....	—	—	10	21	—	—
Denmark.....	—	—	—	—	9	18
France (mainland).....	20,595	30,754	9,194	15,287	8,694	12,318
France (Mediterranean).....	178	294	125	241	—	—
Holland.....	—	—	—	—	134	202
Greece.....	183	309	—	—	—	—
Italy.....	389	571	151	278	343	597
Roumania.....	450	878	—	—	—	—
Russia.....	3,606	6,402	6,161	11,287	1,258	1,838
Total.....	84,691	136,253	58,745	98,866	87,503	137,383

According to the above, the importations from Great Britain, France, and Germany have undergone considerable "adjustment"; the Belgian having remained at nearly the same level.

The total importations rose from 58,745 tons in 1909 to 87,503 tons in 1910; the value, from 98,866 £. to 137,383 £. The first half of 1911 shows steady progress.

The increase of the English and German figures is partly on account of the fact that these two countries were promised rather too hastily the orders for 4,500 tons of cement for the Egyptian railways.

England delivers principally artificial Portland cement in sacks and barrels that, as a rule, including packing, figure up to 135 piasters, delivered in Alexandria. Germany sends also artificial cement in sacks, and can deliver just about as well as other countries, and on very favourable conditions. For instance, the municipality of Alexandria has bought this year 200 tons of German cement at 160 piasters.

Belgium delivers both artificial Portland and natural cements; the former is much liked in Egypt, and is a sharp rival of the English material. The price runs from 170 to 190 piasters per ton, delivered at warehouse. These materials (about half the Belgian cement importation into Egypt) have pushed into the backgrounds the cheaper, natural cement from Belgium.

The French importation sank from about 20,000 tons in 1908 to 8,134 in 1910; principally because the rivals delivered on more favourable conditions, while the French exporters often sell free Marseilles port or f.o.b. steamer Marseilles. The freight from Marseilles to Alexandria is higher than that from Antwerp to the same port; and the prices average 25 piasters higher than for other cement of equal quality.

Of the other countries delivering cement only Austria-Hungary is worth mentioning; very good material is sent from Spalato.

For the Government buildings only artificial Portland cement is used, and it must conform to the "British Standard Specifications." The tests are made by the State Laboratory at Cairo.

As regards the domestic manufacture—the first company to name is the Société Anonyme des Ciments d'Egypte," turning out in Massarah about 10,000 tons a year. This cement, which is also used by the Egyptian Government, is principally consumed in Cairo and the vicinity. In Alexandria it has not been able to oust foreign competition. The company has been recently reorganised and its capacity increased. The raw material comes from the Mokattam stone quarries. A new Portland cement factory, that of A. Fusignani & Co., is in process of formation in Alexandria. It is intended, with a capital of 20,000 £, to produce about 15,000 tons a year. The raw materials will be drawn from Austria.

GENERAL BUILDING NEWS.

NEW COUNCIL SCHOOL, BEDLING.

The designs for this school were prepared by Mr. D. Pugh-Jones, F.S.I., county architect, and the estimated cost of the work 7,180 £. The new buildings provide accommodation for 382 scholars, and the contract was carried out by Messrs. Hamilton & Millard.

Caerphilly. Mr. D. Pugh-Jones has been responsible for over thirty new elementary schools, besides other various school works.

GENERAL POST OFFICE, GLASGOW.

Large extension works are to be carried out at this office, and the estimated cost of the work is 80,000 £. The architect is Mr. W. Oldrieve, F.R.I.B.A., of H.M. Office of Works, Edinburgh, and the contractors are Messrs. George Newton & Son.

TRADE NEWS.

The Foxton Council School, Cambridge, recently been fitted with two of D. O. Boyle's hygienic ventilating school grates, supplied Messrs. O'Brien, Thomas, & Co., Upper Thames-street, London, and Excelsior Works, South Bedfordsey.

Under the direction of Mr. S. Segar, architect, Newton Abbot, the "Boyle" system ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets has been applied to the additional ward Newton Abbot Workhouse.

Addington Schools, Surrey, are being supplied with Shorland's warm-air ventilating patent Manchester grates by Messrs. E. Shorland & Brother, Ltd., of Fallowfield, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London Council, the following applications under London Building Acts were dealt with, names of the applicants being given in parentheses:—

Lines of Frontage and Projections.
City of London.—Erection of wooden cases at No. 35, Queen Victoria-street, C. (Messrs. Oppenheimer, Blandford, & Co., Consent).

Clapham.—A projecting wooden window at No. 246, Cavendish-road, Balham (Mr. Potterton).—Consent.

Holborn.—Projecting illuminated sign front of No. 16, New Oxford-street, Holborn (Messrs. F. Sage & Co., Ltd.).—Consent.

Paddington, South.—One-story shop basement at No. 33, Queen's-road, Bayswater

srs. Veale & Gibbs for Dr. J. Harley).—sent.

Paddington, South. Vaults in front of No. 2, Queen's-road, Paddington (Messrs. Veale & Gibbs).—Consent.

Grand.—Projecting illuminating sign in front of the Boulogne Restaurant, No. 27, Ward-street, Strand (Mr. G. K. Bird).—sent.

Wandsworth.—Projecting sign in front of No. 135, Putney Bridge-road, Wandsworth srs. Nevill & Co.).—Consent.

Woolwich.—Balconies in front of six houses on the southern side of Glenshiel-road, Eltham (T. H. Hutchings).—Consent.

Width of Way.

Finsbury, East.—Erection of a building on northern side of Banner-street, Finsbury srs. M. King & Sons).—Consent.

Greenwich.—Erection of two-story buildings in the forecourt fence on the northern-eastern side of Hoskins-street, Greenwich (Mr. A. Griffin).—Consent.

Greenwich.—Erection of buildings and a court fence in front thereof on the northern side of Hoskins-street, Greenwich, on site of Nos. 1 to 4, Webbs-cottages (Mr. Griffin).—Consent.

Waltham.—Alteration in the position of the way leading from Great Queen-street to the yard, Holborn (Messrs. Gordon & Ton).—Consent.

Waltham, West.—Erection of a warehouse along the site of Nos. 3, 4, 5, 6, 7, and 8, Bennett-street, and Nos. 10, 12, and 14, Bedford-street, Blackfriars (Mr. A. Sykes for J. Sainsbury).—Consent.

Width of Way and Lines of Frontage.

Hackney, North.—One-story addition to a building on the western side of Brunswick-road, Hackney (Messrs. J. D. Mathews & Son and Messrs. H. J. Davenport, Ltd.).—Consent.

Peckham.—Erection of a chapel building on the site of Nos. 37, 39, 41, and 43, Peckham-rd., Peckham, and Nos. 4 and 6, Philip-street (Mr. A. E. Mullins for Mr. J. Buckland).—sent.

Lines of Frontage and Deviations from Certified Plan.

Waltham.—Covered way at the premises of London General Omnibus Company, Ltd., to Micklethwait-road, Fulham (Mr. J. E. J. for the London General Omnibus Company, Ltd.).—Refused.

Lines of Frontage and Construction.

Greenwich.—Addition at the rear of No. 36, New-road, Greenwich, abutting upon Newing-road (Mr. F. C. Soar).—Consent.

Hackney, North.—Retention of a wood and shed adjoining No. 19, Northwood-road, Hackney (Mr. A. H. Ellis).—Refused.

Grand.—Wood and glass showcases at No. 1, Oxford-street, Westminster (Mr. F. T. for Messrs. Louise & Co., Ltd.).—sent.

Width of Way, Lines of Frontage, and Construction.

Paddington, South.—Temporary wood and iron building at the rear of Nos. 511 and 513, Liverpool-road, Islington, to abut upon Paradise-avenue (Mr. H. Goodchild).—Consent.

Formation of Streets.

Wandsworth.—Formation or laying out of a street for carriage traffic to lead from Ham road to Clarendon-road, Putney (Mr. Pain-Clark for Mr. C. Pettitward).—sent.

Deviation from Certified Plans.

Waltham, West.—Re-erection of Nos. 32 and 33, Devonshire-mews, East, St. Marylebone (Mr. A. F. Faulkner for Mr. W. Willett).—sent.

Width of Way, Construction, and Alteration of Buildings.

Paddington, South.—Iron and glass verandah with a flat roof at the rear of the "Golden Hotel," Notting-hill-gate, to abut upon northern side of Uxbridge-street (Mr. J. J. for Mr. W. Magee).—Consent.

Use at Rear and Alteration of Buildings.

Waltham, West.—Additional story at No. 3, Brunswick-mews, Great Cumberland-place, Waltham (Mr. J. Hudson).—Consent.

Waltham.—Staircase between the ground and first floors of Nos. 187 to 193, Knightsbridge (Mr. A. Burr for Mr. J. C. Humphreys).—sent.

Buildings for the Supply of Electricity.

Hammersmith.—Addition to the boiler-house at the Hammersmith Metropolitan Borough Council's electricity generating-station, Fulham Palace-road, Hammersmith (Mr. H.

Mair for the Hammersmith Metropolitan Borough Council).—Consent.

The recommendation marked † is contrary to the views of the Metropolitan Borough Council concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ALDERSHOT.—Church, Queen's-road; Rev. F. O'Farrell, Aldershot.

Aston (Birmingham).—Factory; Messrs. Harrison & Cox, architects, 109, Comore-road, Birmingham; Mr. W. H. Gibbs, builder, King's Heath, Birmingham.

Baghill.—Extensions to isolation hospital (2,670l.), Pontefract Joint Hospital Board.

Barnham Heath.—Addition to County Asylum (4,800l.); Mr. F. W. Ruck, County Surveyor, Week-street, Maidstone.

Birmingham.—Picture palace, Coventry-road; Messrs. Bridgewater & Porter, architects, Temple-row West, Birmingham. Stables, etc., Lodge-row; Mr. Victor Peel, architect, 13, Temple-street, Birmingham. Additions to works of Messrs. Pontifex, Ltd.; Messrs. E. Harpox & Brother, architects, Corporation, Birmingham; Mr. F. J. Briley, builder, Hay Mills, Birmingham.

Blackhall Mill (Durham).—Twenty-five houses; Mr. George Symon, Surveyor, Blaydon Urban District Council.

Cambridge.—Church (5,000l.); Primitive Methodist Trustees, Cambridge.

Cardiff.—Fire-station, Westgate-street; Mr. W. Harpur, Surveyor, Cardiff Town Council. Chendle. Extensions to works, Bird Hall-lane, for the Oil Engineering Company.

Clacton.—Church buildings; Vicar, St. James, Clacton.

Coventry.—Adaptation of premises, Hill-street, for children's home; Mr. J. Arch, Clerk, Coventry Board of Guardians.

Crossness.—Engine house at pumping-station (63,600l.); Messrs. Dick, Kerr, & Co., Ltd., builders, Cannon-street, E.C.

Croydon.—School, Stamford-road (12,100l.); Mr. E. J. Saunders, builder, Wellesley-road, Croydon.

Cwmnantgwyn.—School; Western Valley School Managers.

Darley Dale.—Church; Mr. D. Wildgoose, architect, Matlock.

Dover.—Mission hall; Vicar, St. Mary's Church, Dover.

Dowlais.—Electric theatre, corner of High and George streets, for the Victoria Cinematograph Company, Ltd.

Dundee.—Additions to warehouse, Cowan-street, for the Dundee Canister Company, Ltd. Durham.—Parish hall, Crossgate; Vicar, St. Margaret's Church, Durham.

Edinburgh.—Additions to works, Warriston-road, for Messrs. MacLagan & Cumming.

Fareham.—Extensions to Holy Trinity Church; architects, care of the Trustees.

Farnborough.—Additions to cinematograph theatre, Lynchford-road, for the Farnborough Electric Theatre Company.

Fazeley.—School; Mr. J. Hutchings, architect, County Offices, Stafford.

Felixstowe.—School (3,650l.); Mr. W. E. Watkins, Secretary, Education Committee, East Suffolk County Council, Ipswich.

Felling.—Drill hall; Commandant, Felling Detachment, 9th Battalion Durham Light Infantry (Territorials).

Forde.—Adaptation of workhouse into asylum (66,000l.); Mr. G. A. Hutchins, Surveyor, Montgomeryshire County Council, Welshpool.

Gloucester.—School, Inglesstone Common; Mr. R. S. Phillips, architect, The Cross, Gloucester.

Great Yarmouth and Gorleston.—Pumping-station; Mr. John W. Cockrill, Architect, Yarmouth Town Council.

Hanley.—Factory; Mr. C. G. Cowlishaw, architect, 22, Stafford-street, Hanley; Mr. T. Godwin, builder, Raymond-street, Hanley.

Heckmondwike.—Extensions to schools; Vicar, St. Saviour's Church, Heckmondwike.

Johnstone.—Masonic temple, Collier-street; Messrs. William Jeffrey & Sons, builders, Johnstone.

Lancaster.—Additions to workhouse; Mr. S. E. Berry, architect, Lancaster.

Largs, N.B.—Block of houses; Mr. Kay, architect, Hamilton, N.B.

Launceston.—School; Mr. R. Jacob, builder, Bugle.

Lincoln.—Carnegie library, Free School-lane; Professor R. Blomfield, architect, New Court, E.C.

* See also our list of Competitions, Contracts, etc., on another page.

Mansfield and Rainworth.—Schools; Mr. T. Collinge, Town Hall, Mansfield.

Mansfield Woodhouse.—Eight houses, Old Mill-lane, for the Mansfield Woodhouse Small Holdings Society.

Newton Abbott.—Nurses' home (460l.); Mr. F. Zealley, builder, Newton Abbott.

Nuneaton.—Two hundred houses; Manager, Arley Colliery, Cookery centre; Mr. H. Ash, architect, Market-place, Nuneaton.

Oystermouth (Swansea).—Hospital, Fairwood Common; Mr. H. A. Ellis, architect, Fishers-street, Swansea.

Pontmorlais.—Electric theatre for the Merthyr Palace Company.

Radford.—United Methodist Church, Independent-street; Mr. W. A. Higginbottom, architect, Friars-yard, Nottingham; Mr. John Lewin, builder, Netherfield.

Richmond.—Proposed enlargement of Darell-road School (about 2,500l.); architect, care of the Managers.

Rochdale.—Proposed church; Vicar, St. Ann's, Rochdale.

Shoreham.—Alterations and additions to Grammar School (1,960l.); Mr. E. H. Cud, builder, Shoreham.

Southborough.—Isolation hospital; Surveyor, Southborough Urban District Council.

Staines.—Chapel; Messrs. Smee & Houchin, architects, 82, Fleet-street, E.C.

Takeley.—School; Mr. F. Whitmore, architect, 73, Duke street, Chelmsford.

Tickhill.—Shops, Castlegate, for the Doncaster Co-operative Society, Ltd.

Trebanoc.—Church (1,000l.); Messrs. Arnold Brothers, builders, Clydach.

Troedyrhyn.—Electric theatre for the Troedyrhyn Cinema Company.

Twickenham.—A plan has been passed for four houses, Richmond-road, for Mr. F. J. Fraser.

Walsall.—Co-operative stores; Mr. H. Elton, builder, Bloxwich, Walsall.

Warkworth.—Alterations to Burn's House, Castle-hill; Mr. L. A. Loades, architect, Morpeth.

Whitefield.—Housing scheme; Mr. C. H. Wright, Borough Surveyor, Whitefield Urban District Council.

Whitehaven.—Improvements to workhouse (2,310l.); Messrs. Beswick & Davies, architects, care of Mr. W. H. Atkinson, Clerk, Board of Guardians, Whitehaven.

Wolverhampton.—Schools; Messrs. Fleming & Sons, architects, Bank-chambers, Wolverhampton; Messrs. H. Gough & Sons, builders, Dudley-road, Wolverhampton.

Yarmouth.—Proposed extensions to workhouse (9,000l.); Mr. F. Burton, Clerk, Board of Guardians, Yarmouth.

Ynysmeudw.—St. Mary's Church (2,000l.); Mr. Cook Rees, architect, Neath; Messrs. Price Brothers, builders, Cardiff.

OBITUARY.

Herr von Tschudi.

The death on November 24, at Cannstatt, is announced of Dr. Hugo von Tschudi, Director of the Bavarian National Galleries, Munich. Herr von Tschudi was Director of the National Gallery, Berlin, in 1896-1909, and author of "Donatello and Modern Criticism," and of books upon Manet and Menzel, specimens of whose works, together with examples of the modern French schools, he acquired for the Berlin Gallery.

Mr. Salmon.

The late Mr. William Forrest Salmon, of No. 53, Bothwell-street, Glasgow, a Fellow and Past-President of the Glasgow Institute of Architects, was elected a Fellow of the Royal Institute of British Architects in 1876, and served as member of the Council. The firm of Messrs. James Salmon & Son, latterly Salmon, Son, & Gillespie, F.R.I.B.A., won in January 1903, the first premium in Municipal Buildings; they were the architects of the Hamilton Municipal Buildings, 1903; Scottish Temperance League Building, Glasgow (illustrated in No. XVI. of our Series—"The Architecture of Our Large Provincial Towns," July 9, 1909); Marine Hotel, Troon, Ayr, 1897, with enlargement and the tower, 1901, at a total cost of 27,000l. (Builder, October 11, 1902); Glasgow Savings Bank, Anderson Cross Branch, with shops and saloon, and, on the upper floors, nine dwelling-houses, at a cost of about 12,000l. (Builder, March 21, 1903); new wing for fifty beds, West of Scotland Convalescent Homes, Dunoon, 1907; Carsburn Public School, Greenock, with twenty classrooms, workshops, etc., for 1,020 scholars, 1907-8; and an extension of Woodilee Asylum, Lenzie, for the Glasgow Lunacy District Board, 1903.

LAW REPORT.

Case under the London Building Acts.

A MATTER of great importance to the London building trade was discussed in the King's Bench Divisional Court on Friday, November 24, when Mr. Justice Hamilton and Mr. Justice Bankes considered a special case stated by the Tribunal of Appeal, under the London Building Acts (Amendment) Act, 1905, sect. 7, sub-sections 2 and 22, in the case of *Clark v. The London County Council*. The matter came before their Lordships in the form of an appeal by the London County Council from the decision of the Tribunal in the appeal of Mrs. Clark, owner of the Berners Hotel, against the refusal by the London County Council to issue a certificate pursuant to sect. 7 of the Act of 1905.

Counsel for the appellants: Mr. W. O. Danckwerts, K.C., and Mr. Cecil Walsh (instructed by Mr. Edward Tanner); for the respondent: Mr. C. A. Russell, K.C., and Mr. Bodkin (instructed by Messrs. Bennett & Ferris).

Introducing the appeal, Mr. Danckwerts said the matter came before their Lordships in the form of a special case stated by what was called the Tribunal of Appeal under the London Building Act, and he thought he could put the Court shortly in possession of the point which it would have to deal with. Under the Building (Amendment) Act of 1905—an Act dealing principally with precautions in regard to fire in cases of high buildings (*i.e.*, buildings having an upper story the floor of which was more than 50 ft. above the ground)—a person proposing to erect such a building had to deposit, with the notice which had to be given under the London Building Act, plans showing the precautions he proposed to take for the purpose of providing against fire. These plans had to be approved by the London County Council either *simpliciter* or on conditions. If the building owner did not concur in the London County Council's approval or disapproval, he could appeal to the Tribunal of Appeal within two months. He then had to erect the building in accordance with the plan approved by the County Council or with the modifications introduced by the Tribunal. When the building was finished he had to obtain a certificate from the Superintending Architect—before the upper part could be inhabited—to the effect that the building had been erected according to the plans and conditions (if any). If he did not do that, he was subject to certain penal consequences. If the certificate was refused, the building owner could appeal to the Tribunal within two months. Thus the first step was: The plans to be approved, either *simpliciter* or subject to conditions; secondly, the building had to be erected in accordance with the plans; and thirdly, a certificate must be obtained that the building was in accordance with the plans. The building owner could appeal against the refusal of a certificate, or he could enter an initial appeal against the action of the County Council. The point here was that Mrs. Clark deposited plans, obtained a conditional approval from the London County Council, did not appeal against that to the Tribunal of Appeal, and erected her building.

Mr. Justice Bankes: "What is meant by 'conditional approval'?"

Mr. Danckwerts: Approval subject to compliance with certain conditions. Mrs. Clark (he proceeded) erected her building, admittedly not in accordance with at least one of the conditions imposed by the London County Council. She then applied for the Superintending Architect's certificate. The Superintending Architect refused to grant a certificate, saying he could not give one, as the building was not in accordance with the conditions imposed. Mrs. Clark then appealed against the refusal of the certificate, and this was the only appeal she lodged. Upon that appeal being heard, those who represented Mrs. Clark claimed that the Tribunal of Appeal could at that hearing modify the conditions and plans which had been approved by the London County Council, and which had not been appealed against, and that if they approved of plans lodged then, for the first time, in accordance with the building as actually erected, they could give a certificate as required by the Act. He contended that this the Tribunal of Appeal could not do.

Mr. Danckwerts then read the case stated by the members of the Tribunal of Appeal. It included these passages:

Paragraph 2: "The following facts were proved or admitted before us on the hearing of the appeal in question:—On July 26, 1906, Mr. John Slater, the architect acting for Mrs. Clark in the designing and construction of the Berners Hotel, under sect. 7 of the London

Building Acts (Amendment) Act, 1905, of the intention to erect the said hotel, and duly deposited with the London County Council copies of the plans prepared for such new building, showing the means of escape provided from in case of fire proposed to be provided in connexion with such building. The said plans were conditionally approved on July 30, 1906, notice of which conditional approval was given on August 1, 1906, by the Superintending Architect on behalf of the London County Council to Mr. Slater. The second condition contained in such conditional approval was the same as that date as the second condition referred to in paragraph 3 of this case. Mr. Slater did give notice of appeal to the Tribunal of Appeal against this conditional grant on August 22, 1906, but he subsequently withdrew it."

Mr. Danckwerts interposed a statement in regard to the above paragraph. It came to nothing, he said, the London County Council giving conditional approval, and the appeal notified was abandoned. But a fresh start was made, as indicated in

Paragraph 3: "For reasons which are not material to the questions raised in this case, Mr. Slater entirely changed the plans of the proposed building in the year 1907 so as to necessitate, in the case of the western block, a fresh application in the year 1908. On April 17, 1907, he deposited with the London County Council plans showing the new or modified plan of the eastern block of the hotel. Notice of the London County Council's approval of the means of escape shown on these plans, and of their approval of the means of escape shown on the original plans of the western block, subject to certain conditions, was given to Mr. Slater on May 16, 1907, by the Superintending Architect on behalf of the Council. There were thirty-six conditions, the material one at the hearing of the appeal being the second, which was the same as that already referred to in paragraph 2, and which was in these terms:—

"That the staircases be separated from the rooms and corridors on all floors by fire-resisting partitions or walls, and all openings in such separations to be hung with self-closing, fire-resisting doors or windows glazed with fire-resisting glazing."

Paragraph 4: "On October 29, 1908, Mr. Slater deposited with the London County Council fresh plans of the western block of the hotel. Notice of the London County Council's approval of the means of escape, shown on these plans, subject to certain conditions, was given to Mr. Slater on November 19, 1908, by the Superintending Architect on behalf of the Council. There were five conditions, the material one at the hearing of the appeal being the first, which raised substantially the same practical question as the condition set out in the foregoing paragraph."

Paragraph 5: "On November 24, 1909, Mr. Slater wrote to the Superintending Architect informing him of his intention to appeal against this condition, to which he had already objected in the course of correspondence relating to the eastern block."

Paragraph 6: "In fact no appeal was brought against the conditional approvals above mentioned in respect of either the eastern or the western block of the hotel until after the refusal of the certificate mentioned below. The building of the hotel was proceeded with, and ultimately completed, without either the condition mentioned in paragraph 3 of this case relating to the eastern and western blocks, or the condition mentioned in paragraph 4 of this case, relating to the western block, being complied with. The other conditions were either at once accepted and carried out, modified by the London County Council during the progress of the work, and carried out in their modified form or dispensed with by the consent and approval of the Council. On January 20, 1910, Mr. Slater wrote a letter to the Superintending Architect of the London County Council. After the completion of the building, Mr. Slater applied to the London County Council for a certificate under sect. 7 (2) of the London Building Acts (Amendment) Act, 1905. The certificate was refused by the Superintending Architect by letter dated February 3, 1910, and on March 3, 1910, a further letter was written to Mr. Slater stating that the London County Council declined to waive the condition which Mr. Slater objected to, and setting forth the outstanding requirements which were insisted upon. At the hearing it was agreed that, with the exception of the provision of fire-resisting doors separating the staircases from the rooms and corridors on the upper floors in accordance with the condition already mentioned, all other requirements had either been carried out or Mr. Slater had undertaken that they should be, and on the date of our judgment in the appeal (June 23, 1910), it was agreed that all such other requirements had been, in fact,

carried out to the satisfaction of the London County Council."

Paragraph 7: "On March 31, Mr. Slater, on behalf of Mrs. Clark, gave formal notice of appeal. On April 29, 1910, he sent to the Tribunal of Appeal a short statement of facts together with two copies of plans, showing a plan of one of the upper floors as being typical of the remainder, and also showing the positions of the screens and doors as required by the condition insisted upon by the London County Council, and complained of by Mrs. Clark."

Paragraph 8: "The appeal came on for hearing on May 31, 1910. Before any evidence was taken, Counsel who appeared on behalf of the London County Council took the preliminary objection that, inasmuch as no appeal had been brought by Mrs. Clark against either of the conditional approvals by the London County Council within two months thereof, the time for appealing against any conditional approval had passed, and that, if an appeal being against the refusal of the London County Council to grant a certificate, the Tribunal of Appeal were confined to consider whether the building had been provided with means of escape in accordance with the plan approved by the Council, and whether the conditions, subject to which such plans were approved, had been complied with, and that the Tribunal of Appeal had no jurisdiction to hear any appeal against or evidence against the reasonableness of the conditions or conditional approvals, or to approve any plans."

Paragraph 9: "We held that, in the circumstances, on the hearing of the appeal against the refusal of the Council to grant a certificate, our jurisdiction under the London Building Acts (Amendment) Act, 1905, sects. 7 and 22, was not limited in the manner contended for by Counsel for the London County Council, but that we were entitled and bound to inquire and consider any evidence tending to show that the building had, in fact, been provided with all such means of escape therefrom in case of fire as could be reasonably required in the circumstances of the case in accordance with plans approved by us. We accordingly dismissed the evidence, but, at the request of Counsel for the London County Council, agreed to state a case for the decision of the Divisional Court."

Paragraph 10: "We heard evidence and arguments of Counsel on May 31 and June 1, 1910, and, at the close of the evidence, after hearing Counsel for the appellant respondents, we came to the conclusion that, if fire-resisting doors required by the condition could not be required in the circumstances of the case, but asked Counsel for the appellant who was the respondent, to ask that he should be allowed to appeal under sect. 7 of the Act of 1905."

Paragraph 11: "Up to that time the plans which had been before us were the copies of plans lodged with the Tribunal of Appeal referred to in paragraph 7 of this case. The plans originally deposited with the London County Council in 1906, and referred to in paragraph 2; the plans deposited with the London County Council in 1907, and referred to in paragraph 3; and the plans deposited with the London County Council in 1908, and referred to in paragraph 4."

Paragraph 12: "Although such plans were sufficient for the purpose of explaining to and enabling us to follow the evidence given in regard to the building, which we had personally viewed before the trial, they did not show the whole of the building as it had, in fact, been erected."

Paragraph 13: "Accordingly Counsel for the appellant applied to us for an adjournment in order to enable them to produce a fresh set of plans which would show the building as actually erected; that is to say, embodying the modifications in the building made by agreement with the London County Council since the deposit of the plans with the London County Council in order that we might approve such fresh plans."

Paragraph 14: "Counsel for the respondent objected to the adjournment, but we decided to grant it."

Paragraph 15: "At the adjourned hearing on June 23, 1910, Mr. Slater was recalled, and produced certain plans prepared since the adjourned hearing, which showed the building as it had actually been erected. It was proved and we find as a fact, that such plans differed from the plans deposited with the London County Council referred to in paragraphs 3 and 4 in so far as they incorporated modifications in the building which had been agreed to by the London County Council at the deposit of the said plans."

Paragraph 16: "Counsel for respondents objected to the fresh plans being put in evidence and to our approving the same, on the ground (1) that the evidence was closed; (2) that the plans had never been deposited with the London County Council; (3) that the plans had not been lodged with the Tribunal

in accordance with Regulation 3 of the regulations of the Tribunal, and that the Council had no jurisdiction to dispense with compliance with such Regulation. The County Council in so far as they indicated modifications subsequently made in building in agreement with the London County Council. We held that Regulation 3, relating to the building, is only directory or the convenience of the Tribunal, and even if that Regulation had not been complied with, the Tribunal has power to waive compliance with such Regulation, and accordingly overruled the object, but, at the request of the London County Council, I directed that a case for the decision of the County Council on the further questions raised in the case be referred to the County Council.

Paragraph 18: "We approved the plans which had been put in as mentioned in paragraph 13, showing the building as it then stood, and determined that the building had been erected in accordance with the plans in case of fire as could be reasonably required in the circumstances of the case in accordance with the plans approved by us, and made no order as to costs."

The questions for the determination of the County Council are as follows:

(a) Whether, in the circumstances aforesaid, the Tribunal, on the hearing of the appeal, only had jurisdiction to hear and determine and admit evidence upon the question whether the building had, in fact, been erected in accordance with the plans approved by the London County Council, as referred to in paragraphs 3 and 4, subject to such conditions as aforesaid, and whether the conditions had been complied with, whether the Tribunal had jurisdiction to hear and determine and admit evidence upon the question whether the building had, in fact, been provided in accordance with plans approved by the Tribunal of Appeal, with all such means of escape therefrom in case of fire as could be reasonably required in the circumstances of the case.

(b) Whether, in the circumstances aforesaid, the Tribunal had jurisdiction to admit evidence and approve the said plans. Danckwerts, continuing his argument, said that the point of substance which was in the case was, whether or not upon appeal against the refusal of the certificate open to the Tribunal of Appeal to treat in appeal against the original disapproval of the plans or imposition of conditions. If the Tribunal of Appeal were right, a man could, in the case of a building which the County Council had refused to approve, then, and he could then build, and, having completed his building, go to the County Council for a certificate that the building was completed in accordance with the plans and conditions. This could be done on the ground that the building had been appealed against or complied with, upon which he could appeal against the refusal of the certificate. The refusal would be right if it was in accordance with the truth of the conditions had not been complied with, but he man could then go to the Tribunal of Appeal for them to rehear the case as though it were before them as an appeal against the disapproval of the plans or the imposition of conditions. Unless that was so, surely this was a case in which the Tribunal of Appeal ought to be dismissed. He (Danckwerts) submitted that the County Council never intended that the County Council should disapprove plans or approve them conditionally, and then have a man snap his fingers at them, go on building, and then finally say, "I give you your certificate," and, if the County Council refused, appeal to the Tribunal of Appeal against such refusal, and get the Tribunal to reopen the whole question. He (Danckwerts) submitted Mr. Danckwerts, on behalf of the County Council, said that the question turned upon the question to be placed on facts, 7 and 22 of the case. The substance of sect. 7, he said, was that provision it was intended to secure the risks of fire with "such means of escape as could be reasonably required in the circumstances of the case." This was what he referred to as the operative part of the Regulation of the Tribunal of Appeal was that the Tribunal approved the plans submitted and that the building had been provided with "such means of escape in case of fire as could be reasonably required in the circumstances of the case," in accordance with plans approved by the Tribunal. He submitted that the same result was arrived at

by taking the matter under sub-sect. 2, which was the particular sub-section dealing with the circumstances in which a building of the kind in question could be lawfully occupied. The Tribunal of Appeal, he said, had no jurisdiction to grant a certificate. What they had determined, he suggested, was that, where a building had been provided with "all such means of escape therefrom in case of fire as could be reasonably required in the circumstances of the case," and where those provisions were in accordance with plans which either the Council or the Tribunal of Appeal had approved, the requirements of the Act had been satisfied.

Mr. Russell argued that sect. 22 of the Act meant that the building owner was to have two opportunities of bringing the matter before the Tribunal of Appeal, one of those opportunities arising if the London County Council either disapproved or conditionally approved the plans deposited with them, and the other if the building owner failed to obtain from the Council the certificate mentioned in sect. 7, sub-sect. 2. Upon either of those events, or within a limited time of either of those events, the building owner might bring the matter before the Tribunal of Appeal for the purpose of obtaining the Tribunal's decision as to whether the building "as going to be erected," or "as erected," would be or was provided with such means of escape in case of fire as could be reasonably required in the circumstances of the case. He submitted it was only reasonable, when one looked at the matter as illustrated by this case, that that should be so. It appeared, in this case, that the conditions, subject to which the plans were approved, were very numerous indeed in the first instance, some twenty or thirty being annexed. What happened? Of course, if the building owner had at once gone to the Tribunal of Appeal, those twenty or thirty conditions would have had to be discussed, and the question gone into as to whether it was reasonable or unreasonable to impose them. Instead of that, the building owner took the practical course of going on with the work, and, as questions arose, of dealing in the concrete with each point, with the result that all the conditions with one exception disappeared.

Ultimately, continued Mr. Russell, they came to the one and only real point of difference between the parties, viz. the condition as to the screens at the head of the staircases. Of course, it was obvious that the time that would be required to allow that process of weeding-out and getting rid of the conditions, which at one time would be considered material, but as the building went on would obviously become not so material, would not be merely two months after the imposition of the conditions. He submitted there was nothing whatever in the Act of Parliament to prevent the building owner, when the ultimate difference between himself and the County Council arose, bringing the matter then before the Tribunal of Appeal and asking the Tribunal to determine between him and the London County Council whether a particular condition was one compliance with which was essential or proper in order that the building might be provided with "all such means of escape therefrom in case of fire as could be reasonably required in the circumstances of the case." He suggested that, if the contention of the London County Council were correct, instead of the Tribunal of Appeal having a question of substance to deal with, whenever the matter was brought before them in a case where the appeal took place, only when the question of certificate had arisen, they could never have anything before them that was not merely a matter of form. One could hardly imagine, he thought, that they would have the machinery of a Tribunal of Appeal of this kind for determining "aye" or "no" whether a building was erected in accordance with the plans, and really it was almost clearer when one considered the case of whether a certain condition had or had not been complied with, for this, surely, could very seldom be a matter of any doubt at all.

On the question of jurisdiction, Mr. Russell contended that the matter before the Tribunal of Appeal was whether the building had been provided with means of escape in accordance with plans approved by the County Council or by the Tribunal.

Mr. Danckwerts having replied, their Lordships delivered

JUDGMENT.

Mr. Justice Hamilton, having reviewed in detail the circumstances of the case, referred to the condition imposed in regard to the screens protecting the staircases. It was plain, he said, that in that connexion there might be legitimate difference of opinion, if of a purely technical kind, as to whether a particular material was so applied that it was different from the condition imposed or whether a particular partition could be

described as fire-resisting, or whether a particular opening was closed by mechanism which could be called self-closing. If, then, although, in the circumstances, the building owner said he might appeal if the London County Council insisted upon all the conditions imposed, he did not, in fact, at that time or within two months of the notification of the County Council's conditional approval take any appeal to the Tribunal of Appeal at all, and the work proceeded and the time arrived at which, as a preliminary to the place being occupied, it was necessary, under sub-sect. 2 of sect. 7, to apply to the County Council for a certificate, and that certificate was refused, the building owner could then appeal, and appeal only from the refusal of the certificate. In this case, when the appeal came before the Tribunal of Appeal liberty was sought to call fresh evidence, and the Tribunal came to the conclusion that the building had been provided "with all such means of escape therefrom in case of fire as could be reasonably required in the circumstances of the case." It was quite immaterial to consider the rights or wrongs of that decision, the question being whether it was competent for the Tribunal to do what they did in the matter. In his (Mr. Justice Hamilton's) opinion, the answer to both the questions stated in the case was in favour of the London County Council; that the Tribunal of Appeal only had jurisdiction upon the question whether the building had been, in fact, erected in accordance with the plans approved by the London County Council, and whether the conditions imposed had been complied with. The Tribunal had not jurisdiction to approve the plans in question, which were prepared *ex post facto*. There could be no doubt that the scheme of the Act, which had been read with the previous Act of 1894, was that the Executive Authority was to be the London County Council. He accordingly thought that the answer of the Court should be "Yes" to the first part of Question "A"; "No" to the second part of that question; and "No" to Question "B."

Mr. Justice Banks agreed, and the appeal of the London County Council was accordingly allowed.

Mr. Cecil Walsh (for the London County Council): Your Lordships order a declaration in the terms of the answers to the questions, and that the case be remitted to the Tribunal of Appeal with a direction that the original appeal should have been dismissed, and that they have to deal with the question of costs. Mr. Russell (interposing): The matter has to go back to the Tribunal of Appeal to make an order and deal with the costs. I agree with my friend that the declaration will follow on the lines of the answers to the questions stated.

Mr. Justice Hamilton: We remit the appeal to the Tribunal of Appeal, with a direction that it should have been dismissed.

Mr. Russell: My clients desire to consider their position in this matter. I think we need leave to appeal in this case, and I would ask for that leave.

Mr. Justice Hamilton: Certainly.

LONDON COUNCILS.

Barking.—The Surveyor has been instructed to prepare plans and estimates for the erection of a convenience adjoining the Public Baths in the Town Yard. The Surveyor has been further instructed to proceed with the work of erecting a convenience adjacent to Loxford Bridge. The following plans have been passed:—Mr. J. Ranson five shops, Longbridge-road; The Vulcan Globe Match Company, additions to factory, Abbey-road; Mr. A. Burch, four houses, Park avenue.

Chesham.—At the last meeting of the Urban District Council the Surveyor was instructed to invite tenders for the construction of open-air baths on the Moor. The estimated cost is put at £298.

East Ham.—Sanction has been received from the Local Government Board to the borrowing of £391, for culverting the watercourse on the Greatfield Estate, and the Engineer has been instructed to proceed with the work. Plans and estimates are to be submitted by the Engineer for the erection of a fire-station to complete the present block of buildings on the Town Hall site. The following tenders have been accepted:—Messrs. Engert & Rolfe, £44, asphalted pond of swimming-bath, 4s. 3d. and 6d. per super. yard, 14d. per foot run for fillets, and 6d. per foot run for skirting, etc.; Messrs. Gibb & Canning, surface water channels and spitoons for swimming-bath, channel and catch pits, 17s. 6s., white glazed tiles, 18s. 10s.; Messrs. Oates & Green, four-stalled urinal, 16s., and white glazed sinks, 1s. 9s. each; Messrs. H. Wilmer & Sons, two water-closet suites, 1s. 17s. each; The Patent Victoria Stone Company, patent stone curb

LONDON COUNCILS.—Continued on page 657.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxiv. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

DECEMBER 4.—**Bristol**.—Pavilion on recreation-grounds. Cost not to exceed 3,000l. Particulars from Messrs. Packer & Co., Greenbank, Bristol.

DECEMBER 15.—**Sofia**.—NEW MUNICIPAL BUILDING.—See Competition News, page 508, November 3.

DECEMBER 29.—**Glasgow**.—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60l. and 30l. are offered. See advertisement in issue of December 24, 1910, for further particulars.

DECEMBER 30.—**Armadale**.—Public hall and offices, to cost 2,500l. Premiums of 15l. and 10l. Offer only to architects who were represented on the site on October 12.

DECEMBER 30.—**Welsh Eisteddfod, 1912**.—DESIGNS FOR WORKMEN'S DWELLINGS.—Prize, 50l. Particulars from Welsh Housing Association, 9, Temple-chambers, E.C.

JANUARY 1, 1912.—**Rochdale Infirmary**.—EXTENSIONS.—Limited to Rochdale architects. Assessor, Mr. Alex. Gram, F.R.I.B.A.

JANUARY 6, 1912.—**Bolton**.—MINORS' FEDERATION Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 50l. and 25l. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernhough, 7, Fold-street, Bolton.

JANUARY 6, 1912.—**Stafford**.—PUBLIC LIBRARY.—The Stafford Corporation invite designs for a public library. Mr. Henry T. Hare, F.R.I.B.A., assessor. Second and third premiums of twenty and forty guineas. Deposit, 1l. Particulars from Mr. W. Plant, A.M.Inst.C.E.

JANUARY 9, 1912.—**Spennymoor**.—PUBLIC HALL, ETC.—The Spennymoor U.D.C. invite competitive plans and designs for a public hall, market, and offices, etc. Three premiums are offered. See advertisement in this issue for further particulars.

JANUARY 29, 1912.—**Montevideo**.—Government palace (premiums, 2,125l. and 850l.) and town improvement scheme (premiums, 1,060l., 640l., and 425l.). Conditions may be seen at the Board of Trade, 73, Bevington-street, E.C.

JANUARY 31, 1912.—**Australia**.—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 508, November 3.

FEBRUARY 3, 1912.—**Bolton**.—NURSES' HOME at THE INFIRMARY.—Premiums of 30l., 20l. and 10l. Assessor, Mr. John B. Cass, F.R.I.B.A.

FEBRUARY 17, 1912.—**London, E.C.**—NEW OFFICES.—The Port of London Authority invite preliminary sketch designs for new head office in Trinity-square, and for laying out remainder of land as a building site. See advertisement in issue of November 24 for further particulars.

JULY 1, 1912.—**Dusseldorf**.—A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 875l. Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

NO DATE.—**Jordanhill, Glasgow**.—PROPOSED TRAINING COLLEGE.—See Competition News, page 508, November 3.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 2.—**Truro**.—ROOFING, ETC.—Erection of glass roofing and steel framework at rear of 22, King-street. Plans and specifications from Mr. A. A. Cornelius, M.S.A., architect, Truro.

DECEMBER 4.—**Nottingham**.—REPAIRS.—For repairs to various properties. Forms of tender, conditions, etc., from Mr. W. Smith, Estates Surveyor, Guildhall, on deposit of 1l.

DECEMBER 4.—**Stakesby**.—EXTENSIONS.—For extensions to the steam laundry. Drawings and specifications from Mr. A. E. Young, architect and surveyor, 77, Baxtergate, Whitby.

DECEMBER 4.—**Swansea**.—PREMISES.—Erection of premises, Castle-street. Plans and specifications seen, and quantities from Mr. Sidney Williams, Lic.R.I.B.A., Wharton-street, Cardiff.

DECEMBER 4.—**Tynemouth**.—WAREHOUSE.—Construction of a timber wharf about 200 ft. by 40 ft., and a river wall. Drawings seen and quantities on deposit of 2l. 2s. from Mr. John F. Smilie, Borough Surveyor, Tynemouth.

DECEMBER 5.—**Bradford**.—EXTENSION.—For erection of extension to photo works, Idle-road. Plans, etc., seen, and quantities from Mr. H. E. Priestley, M.S.A., architect and surveyor, 4, Bedford-road, Manningham, Bradford.

DECEMBER 6.—**Auchindoir**.—ADDITIONS.—For additions to Glenbogie House. Plans and specifications at Glenbogie, and with Mr. W. L. Duncan, architect, Turfhill.

DECEMBER 6.—**Barnsley**.—INSTITUTE.—Erection of a new Mechanics' Institute, Hanson-street. Messrs. Crawshaw & Wilkinson, M.M.S.A., architects, 13, Regent-street, Barnsley.

DECEMBER 7.—**Caneewon**.—SCHOOL.—For alterations to Caneewon Endowed School and provision and fixing of heating apparatus. Plans and specifications from Mr. J. F. Wood, Clerk, Clarence-street, Southend-on-Sea.

DECEMBER 7.—**Dalton**.—HOUSES, ETC.—Erection of ten dwelling-houses and shop in Long-lane. Plans seen, and quantities from Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

DECEMBER 7.—**Quarry Hill**.—HOUSE, ETC.—The erection of filter house and manager's house. Plans and specifications with Mr. Joseph Graham, civil engineer, Castle-street, Carlisle. Deposit of 1l. 1s.

DECEMBER 8.—**Glynneath**.—HOUSES.—Erection of two pairs of semi-detached houses. Drawings and specification with Mr. J. Llewellyn Smith, M.S.A., Aberdare, Glam.

DECEMBER 8.—**London**.—POST-OFFICE.—For demolition of old premises and erection of new branch post-office and sorting office at East Ham. Drawings, specification, and form of contract with Mr. Rutherford, 22, Carlisle-place, London, S.W. Quantities and forms of tender at H.M. Office of Works, etc., Storey's-gate, S.W. Deposit of 1l. 1s.

DECEMBER 8.—**Skipton**.—WAREHOUSE, ETC.—Erection of new warehouse and mechanics' shops, etc., at Belle Vue Mills, for the English Sewing Cotton Company, Ltd. Plans seen, and quantities from Mr. James Hartley, architect, Skipton.

DECEMBER 8.—**Tinahely**.—REPAIRS, ETC. For repairs and painting, etc., at the dispensary residence. Specification with Mr. J. Hopkins, Clerk, Board-room, Shillelagh, Ireland.

DECEMBER 11.—**Blackthorn**.—HOUSE.—Erection of a detached house. Plans seen, and quantities from Messrs. Settle & Brundrit, A.R.I.B.A., architects, Division.

DECEMBER 11.—**Springhead**.—HALL.—For new drill hall, Ashes lane. Plans and quantities from Mr. W. Cooper, F.R.I.B.A., architect, 4, Kirkcaldy-buildings, Huddersfield.

DECEMBER 12.—**Croydon**.—STATION, ETC.—Erection of a disinfecting station and cottage in Victoria. Plans and specifications seen, and quantities and form of contract from the Borough Engineer, Town Hall, Croydon. Deposit of 1l. 1s.

DECEMBER 12.—**Durham**.—SCHOOLS, ETC. Erection of new Council schools at Fence Houses and Newbottle; alterations and additions at Sacriston Council school; erection of dwelling-houses at Eldon and Chopwell. Plans, specifications, and general conditions of contract seen, and quantities from Mr. W. Rushworth, Shire Hall, Durham.

DECEMBER 12.—**Hendon**.—SCHOOL.—The Hendon Education Committee invite tenders for public elementary school. See advertisement in this issue for further particulars.

DECEMBER 12.—**Roxby-cum-Risby**.—WATERWORKS.—For the construction of works of water supply. Plans seen, and specifications from Mr. Alexander M. Cobban, Engineer, Souththorpe Lines, on deposit of 3l. 3s.

DECEMBER 12.—**Stourbridge**.—ADDITIONS.—For alterations and additions to the roads offices at Stourbridge Town Station for the G.W.R. Plans and specification seen, and forms of tender and quantities at the office of the Engineer at Wolverhampton Station.

DECEMBER 13.—**Bury**.—SHED.—Erection of a cotton shed at Knollys-green, Goods Yard, for the Lancashire and Yorkshire Railway Company. Plans seen, and quantities and specification from the Engineer, Hunt's Bank, Manchester.

DECEMBER 14.—**Barking**.—NEW POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for erection of new post-office. See advertisement in this issue for further particulars.

DECEMBER 14.—**Teignmouth**.—POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of post-office. See advertisement in this issue for further particulars.

DECEMBER 14.—**Waltham Cross**.—SCHOOL.—The Bedfordshire County Council invite tenders for new school. See advertisement in this issue for further particulars.

DECEMBER 15.—**London**.—ADDITIONS.—For alterations and alterations to the administrative buildings at the isolation hospital, Gap-road, Wimbles. Plans and specifications seen, and quantities from the Borough Engineer and Surveyor, 10, Hall, Wimbles.

* DECEMBER 15.—**Sheerness**.—SOLDIER QUARTERS.—The Secretary of State for War invites tenders for erection of ten B. and soldiers' quarters, Sheerness Garrison, at barracks in the Eastern Command. See advertisement in this issue for further particulars.

DECEMBER 15.—**Washington (Durham)**.—HOUSES.—For erection of forty-two dwellings. Deposit of 5l. to Mr. J. H. Mole, surveyor, Chamber-street, Durham.

DECEMBER 15.—**Wigan**.—ALTERATIONS, ETC.—alterations to St. Catherine's Church. Mr. A. Yate, 12, Colindale, Wigan.

* DECEMBER 15.—**Wimbledon**.—ADDITION.—The Wimbledon Corporation invite tenders proposed additions and internal structural alterations to the Wimbledon Hospital, Gap-road, advertisement in this issue for further particulars.

DECEMBER 19.—**Southend-on-Sea**.—ESPANOLA TENSION.—For construction of the Western Espandola tension. Plans seen, specification and quantities from Mr. E. J. Elford, M.Inst.M.E., Borough Engineer, Municipal Buildings, Southend-on-Sea, on deposit of 5l. 5s.

DECEMBER 21.—**Neath**.—HOUSES.—Erection of two houses at Seven Sisters, near Neath for the Bryndulais Building Club. Plans, specification from Mr. J. Cook Rees, M.S. Parade-chambers, Neath.

DECEMBER 22.—**Kendal**.—INSTITUTE.—For erection of Allen Technical Institute and Museum. Plans and specifications seen, and quantities from Mr. S. Shaw, F.R.I.B.A., architect, Kendal.

DECEMBER 23.—**Ballyvaughan**.—RECTOR.—Erection of a rectory. Plans specification, and conditions of contract from Mr. William Fennell, F.R.I.B.A., architect, 2, Wellington-place, Belfast.

* DECEMBER 23.—**Hounslow**.—NEW HOSPITAL.—The Committee of the Hounslow Hospital invite tenders for new hospital, etc. See advertisement in this issue for further particulars.

NO DATE.—**Beaver**.—ADDITIONS, ETC.—addition and alteration to farm building and specification and quantities from the County Land Agent, 28, Castle street, Carlisle.

ENGINEERING, IRON, AND STEEL.

DECEMBER 2.—**Downton**.—WALLS.—For building and repairing sea walls between M. field and Bankmore, Portaferry. Specifications from Mr. J. Heron, County Surveyor, Downpatrick.

DECEMBER 4.—**Newport (Mon.)**.—PONTON.—For construction and delivery at the Commissioners' landing stage, Newport, of an iron pontoon. Mr. A. J. Phillips, Clerk Harb. and Pilotage Offices, Dock-street, Newport.

DECEMBER 4.—**Edinburgh**.—HEATING.—For heating of Holy Cross Academy higher-grade school and junior centre, Ferry road. J. T. R. Wilson, Convener of the Works Committee, 138, Constitution-street, Leith.

* DECEMBER 11.—**Lancaster**.—NEW BRIDGE.—The Lancaster B.C. invite tenders for girders, sinking caissons, etc., and also excavation, masons' and carpenters' work in abutments, in connection with new bridge over River Lune. See advertisement in this issue for further particulars.

DECEMBER 13.—**Braintree**.—PUMPS.—For No. 2 of three-throw pumps to raise 14,000 gallons an hour. Plans seen and specification from Messrs. Sands & Walker, Mill-chambers, Nottingham.

DECEMBER 13.—**Redcar**.—BRIDGES.—The North Eastern Railway invite tenders for the construction of two bridges over the railway, and approach roads, in lieu of the existing level crossings known as Warrenby-road crossing, and Redcar lane crossing, near Redcar. Plans seen, and specification, quantities, and form of tender from Mr. C. F. Bengough, the Company Engineer at York.

DECEMBER 14.—**Antrim**.—WELL, ETC.—For sinking a well and erection of a pump at Oldstar. Specification from Mr. J. L. Clark, Clerk, Union Board, Antrim.

DECEMBER 14.—**Northampton**.—BRIDGE.—For widening Oundle North Bridge. Plans, specification, and quantities from Mr. C. S. Moriarty, County Surveyor, County Hall, Northampton. Deposit of 2l. 2s.

DECEMBER 21.—**Earls Colne**.—BOILERHOUSE.—For sinking a borehole for water in the Borehole and schedule from the engineers, Messrs Sands & Walker, Milton-chambers, Nottingham.

NATURE, PAINTING, MATERIALS, etc.

The date given at the commencement of each paragraph is the latest date when the tender, or plan of those liable to submit tenders, may be in.

DECEMBER 3. **Portsmouth.** PAINTING, etc.—For painting and painting interior of portions of the new "Best" buildings. Specifications by Mr. A. Williams, Secretary.

DECEMBER 4. **South Hutton.** STORES.—For supply of iron, castings, wire rope, and other iron stores. Forms of tender and specifications from Mr. J. H. Lambert, South Hutton, Sunderland.

DECEMBER 4. **Tipton.** DOORS.—For altering outer doors of Dudley Port, Burnt Tree, on Green, Bloomfield, Great Bridge, and at Hill Council schools. Mr. E. Richards, Secretary, Owen-street, Tipton.

DECEMBER 5. **London.** SLEEPER POTS, etc.—Supply of cast-iron sleeper pots, with legs, for the Madras and Southern Mahratta Water Company, Ltd. Specification with the Secretary of the Company, 61, York-street, West. S.W. deposit of 11 is.

DECEMBER 7. **Eton.** PAINTING.—For painters' work at the Resident Engineer's House, Tangier. Specification seen, and form of tender from Mr. J. H. Lambert, South Hutton, Sunderland.

DECEMBER 8. **Pantperthog.** PAINTING.—For painting, painting, varnishing, and colouring of Chapel. Plans and specifications at the Chapel House. The Secretary, C.M. Chapel, Pantperthog, R.S.O., Merionethshire.

DECEMBER 9. **London.** S.E. SUPPLIES.—The S.E. Committee of Guy's Hospital invite tenders for bricks, lime, cement, sand, ballast, and high cracker, sheet lead, pipes, etc., painters' work, and glass. See advertisement in this issue for further particulars.

DECEMBER 9. **Swinton.** PALISADING.—For laying and fixing wrought-iron palisading at the Swinton Works. Specifications and form of tender to Mr. T. J. Bushell, architect, 26, John-street, Manchester.

DECEMBER 11. **Barnet.** PAINTING.—For painting of all woodwork of the hospital buildings, also entrance gates, and repairs to new school. Specification from Mr. W. H. Trevellick, 4, Church-passages, Barnet.

DECEMBER 11. **Broadstairs.** PIPES.—For supply and delivery of cast-iron socket and pipe. Specifications and form of tender from Mr. H. E. Burt, C.E., Council offices, Broadstairs.

DECEMBER 12. **Macclesfield.** PIPES, etc.—For supply of drain pipes, castings, cement, bricks, and form of tender from Mr. C. W. Stubbs, Macclesfield, Cheshire.

DECEMBER 2. **Chatterton.** DRAINAGE.—For drainage works at the Union Workhouse. Plans and specifications seen, and a form of tender from the Master of the Workhouse.

DECEMBER 2. **Hornchurch.** SEWER.—For the construction of stoneware pipe sewer in Ardleigh Green-road. Plans and particulars from the Surveyor to the Council, Victoria-chambers, Romford.

DECEMBER 4. **Buckenham.** ROAD.—For the making-up of Balgovan-road and Belmont-road. Plans seen and quantities, specifications, and forms of tender from Mr. John A. Angell, Surveyor, Guildhall, Cambridge.

DECEMBER 4. **Cambridge.** STONE.—For the supply of broken granite, syenite, basalt. Specification and forms of tender from the Borough Surveyor, Guildhall, Cambridge.

DECEMBER 5. **Bapchild.** MAINS.—For laying cast-iron water mains, fittings, and other works. Plans and specifications seen and quantities from Mr. E. C. Peasey, Surveyor, 45, High-street, Sittingbourne.

DECEMBER 5. **Chatham.** ROADS.—For making-up roads at the cottage homes. Mr. G. E. Bond, architect, Rochester.

DECEMBER 7. **Nottingham.** MATERIALS.—For the supply of stores and materials. Forms of tender from Mr. Arthur Brown, M.Inst.C.E., City Engineer, Guildhall, Nottingham, on deposit of 5s.

DECEMBER 8. **Bexhill.** CULVERT.—For the reconstruction of about 855 ft. of storm-water culvert, 3 ft. diameter, in Park-avenue. Plans seen, specifications, quantities, and forms of tender from Mr. George Ball, M.Inst.C.E., Borough Surveyor, Town Hall. Deposit of 21.

DECEMBER 8. **Grimsby.** DRAIN.—Construction of stoneware pipe drain in front of the Corporation Electric Works. Quantities and plan from Mr. H. G. Whyatt, A.M.Inst.C.E., Borough Engineer and Surveyor, 170, Victoria-street, Grimsby, on deposit of 11 is.

DECEMBER 8. **Mardy.** SEWER.—For laying stoneware surface-water drain and stoneware pipe sewer. Plans and specification seen, and forms of tender, on a deposit of 11 is, from Mr. V. J. Jones, Engineer and Surveyor, Council Offices, Pentre.

DECEMBER 8. **Woking.** MATERIAL.—For supply of road material. Specification and forms of tender from Mr. C. J. Wooldridge, Surveyor, Council Offices, Woking.

DECEMBER 9. **Dewsbury.** PAVING.—For paving, flagging, etc., of Tolson-street and Forney-street. Plans, specifications, etc., seen and forms of tender at the Borough Surveyor's Office, Town Hall, Dewsbury.

DECEMBER 9. **Newcastle-upon-Tyne.** MATERIALS.—For supplying stone. Specification and quantities from the County Surveyor, Moot Hall, Newcastle-upon-Tyne.

DECEMBER 11. **Eastbourne.** TUBES.—Supply of granite concrete circular sewer tubes. Particulars and form of tender from Mr. A. Ernest Prescott, Borough Engineer, Town Hall, Eastbourne.

DECEMBER 11. **Ilford.** DRAINAGE.—For laying glazed stoneware pipe sewer along Goodmayes-lane. Specification and quantities from Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor, Town Hall, Ilford, on deposit of 21 2s.

DECEMBER 12. **Leven.** SEWER.—Construction of about 870 yds. cast-iron main outfall sewer.

Specifications, quantities, and form of tender obtained, and drawings seen, at the Town Hall, on deposit of 31 5s. Engineers, Messrs. Arthur Hindle and P. Holt Whitaker (Brierley Holt & Co.), 46, Abingdon-street, Blackpool.

DECEMBER 12. **London.** PAVING.—For supplying and laying crocked deal blocks, on concrete, in Catford-road, Catford. Plan at the Town Hall, Catford (Surveyor's Department). Form of tender, general conditions, and specification on deposit of 5s. to Mr. Edwd. Wright, Town Clerk, Town Hall, Catford, S.E.

DECEMBER 12. **Walton-on-Thames.** ROAD.—For making-up private street known as Castle-road. Drawings and specification seen, and quantities on deposit of 21 2s. from Mr. R. Wilds, Surveyor to the Council, Council Offices, Walton-on-Thames.

DECEMBER 13. **Clacton-on-Sea.** SEWAGE.—For laying sewers and constructing roads. Plans seen and specification from Messrs. Edwin J. Gilders & Co. surveyors and estate agents, Station-road, Clacton-on-Sea.

DECEMBER 13. **Dublin.** SETTS.—For supply of paving setts. Mr. N. Proude, Secretary, Port and Docks Office, Westmoreland-street, Dublin.

DECEMBER 13. **Kesteven.** MATERIALS.—For supply of broken granite, slag chippings, and footpath gravel. Mr. W. B. Purser, County Surveyor, County Surveyor's Office, Grantham.

DECEMBER 15. **Bedford.** SEWAGE.—For the laying of sewers. General conditions, specifications, and quantities from engineers, Messrs. Hector Tulloch, C.B., R.E. (retired), No. 25, Victoria-street, Westminster, London, S.W., on deposit of 11 2s.

DECEMBER 15. **Wills.** ROAD METAL.—Supply of road metal. Mr. J. George Powell, County Surveyor, County Surveyor's Office, Trowbridge.

DECEMBER 15. **Bromley.** ROAD IMPROVEMENT.—The Bromley B.C. invite tenders for sewerage, levelling, paving, metalling, channelling, and making road. Hillcross-road (sections), Gladwell-road, and Nichol-lane. See advertisement in this issue for further particulars.

DECEMBER 20. **Brantree.** PIPES.—For supply of cast-iron pipes, specials, and the supply and erection of cast-iron water tank to hold 64,000 gallons. Plans and specification seen, and quantities and form of tender from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, on deposit of 31 3s.

DECEMBER 20. **Brantree.** WATERWORKS.—For laying and jointing cast-iron water mains including fixing of valves, hydrants, etc., and erection of brick water-tower, pumping-station, etc. Plans and specification seen, and quantities and form of tender from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, on deposit of 31 3s.

DECEMBER 20. **Spilsby.** SEWAGE.—For laying cast-iron mains with all necessary sluice valves, hydrants, etc. Drawings and specifications at the Council Offices, Boston-road, Spilsby.

DECEMBER 21. **Southwell.** SEWERS.—For laying stoneware pipe sewers, manholes, and construction of small tanks and filters. Plans from engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, and quantities on deposit of 21 2s.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
BUILDING MATERIALS, CROYDON.—On the Site of the Old Croydon Palace, Croydon.	Hooker & Webb	Dec. 4
BUILDING MATERIAL, CLAPHAM PARK, S.W.—On the Premises.	Vergard & Yates	Dec. 6
LOCK OF PATENT VALVE WORKS, LONDON-STREET, E.—On the Premises.	Verrett, White, & Co.	Dec. 7
THE OLD HOUSES AND SHOPS, LAMBETH.—On the Premises.	Field & Sons	Dec. 8
LOCK OF WALLPAPER AND BUILDERS' MERCHANT, LEICESTER.—On the Premises.	J. T. Skelding & Holland	Dec. 19

LONDON COUNCILS.—Continued from page 655.

pond of swimming-bath, 241, 10s. 6d.; Messrs. W. H. Heywood & Co., patent glazing swimming-bath, 74d. per foot run; Messrs. George Jennings, Ltd., shower-baths for swimming-bath, 34, 12s. 6d.; Mr. C. Warner, tile slab for shower-bath, 12, 5s. 6d. Plans have been passed for Messrs. Mark, Liell, & Co. for alterations at "Fern Lodge," Highgate, North; also for Mr. R. L. Curtis, for school in Brampton-road.

Loxley.—Sanction has been received from the Local Government Board to the borrowing of £650 for additional slab making machinery in buildings at the sanitary depot. The tender of Messrs. Frith, Blakeley, Sons, & Co., Ltd., has been accepted at 6361, 10s. for the erection of cork bunkers at the Electricity Works. The following plans have been passed: Mr. E. H. Slatford, Stormont-road, Highgate, motor garage, Stormont-road; Estate, and Houses, Ltd., Weston Park, Stroud Green, four warehouses, etc., off Walthamstow, North Harringway.

Walthamstow.—The 12-in. pipe sewer in Wootton-street, is to be relaid for a length of 265 ft. at an estimated cost of 1751, which sum includes half the cost of paving the roadway with asphalt on completing the sewer work.

Walthamstow.—A plan has been passed for Messrs.

A. Roberts & Co., Ltd., for the erection of premises at Glengall Wharf, West Ferry-road, St. Pancras.

The Council have decided to offer no objection to the proposal of the Metropolitan Railway Company to construct a new entrance to the company's subway between the Great Northern Railway Station and the Metropolitan Railway Station, King's-cross, the entrance to be formed on the pavement at the extreme east end of Euston-road, and near the Tube Station of the Great Northern, Piccadilly, and Brompton Railway, subject to protective conditions, and to the Company agreeing to the abolition of the valve of their tunnel at Euston-road, opposite the Midland-road, in order that the work of the reconstruction and repaving of Euston-road at this part may be completed. Electricity mains are to be extended in two roads at a cost of 761.

Stepney.—Electricity mains are to be extended in York-road, Limehouse, and Ratcliffe, and Ball Lane, West Spitalfields. No objection is to be given to the proposal of Messrs. Meredith & Drew to erect a factory in High-street, Shadwell.

Tring.—At the last meeting of the Urban District Council plans were passed for Lord Rothschild for twenty-four houses in Brook-street.

Walthamstow.—The Engineer has been in-

structed to prepare a plan and estimate of the cost of doubling the tramway track at the "Bell" Corner double junction. Plans, etc., have been approved for levelling, paving, sewerage, etc., Aveling Park-road, and notices are to be served upon the owners of the premises fronting thereon to execute such works. Plans submitted by Mr. E. Cornish for an electric theatre in Marlowe-road, Wood-street, have been passed, as have also plans submitted by Mr. C. J. Dawson for a school in Church-hill. A plan has been lodged by Mr. F. H. Heath for an electric theatre in Wood-street.

Wandsworth.—Tenders are to be invited for paving Steep-hill, Streatham, and part of North-place, Southfield, as new streets. The tender of Messrs. E. & E. Iles has been accepted for paving part of Valley road, Streatham. The footpaths are to be done with Victoria indurated paving. The tender of Messrs. G. Wimpey & Co. has also been accepted for paving part of Cote-ford-street, Tooting. Croft adamant paving is to be used for the footpaths. The following plans have been passed:—Mr. W. Kerr, additions to Photo-Printing Works, 332, Balham High-road; Messrs. A. Charnock & Co., Ltd., warehouse, Riverbank, Point Pleasant, Southfield; Messrs. H. F. Buchan & Co., three houses, Voltaire-street, Clapham North.

VARNISHES, &c.

Fine Palo Oak Varnish	2	8	0
Extra Copal Oak	0	10	0
Superfine Palo Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats			
Fine Elastic Carriage	0	14	6
Superfine Palo Elastic Carriage	0	12	0
Extra Palo Elastic	0	12	0
Finest Palo Durable Copal	0	18	0
Extra Palo French Oil	1	0	0
Eggshell Flating Varnish	1	3	0
Extra Copal	1	4	0
Extra Palo Paper	0	12	0
Best Japan Gold Size	0	10	0
Black India	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knorrting	0	10	0
French and Brush Polish	0	10	0

TERMS OF SUBSCRIPTION.

“THE BUILDER” (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by *Friday Morning’s Post* in London and its suburbs.

To Canada, post-free, 21s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 25s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of “THE BUILDER,” 4, Catherine-street, W.C.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100% unless in some exceptional cases and for special reasons.]

† Denotes *pro*

CASTLEFORD.—For proposed additions to house, stabling, &c., excluding tiling and painting, at Castleford, Yorkshire:—**Robinson & Briggs**, Mr. F. S. Starchard, architect and surveyor, Bank-street, Castleford:—

Excavator, Bricklayer, and Mason: G.	
<i>London</i>	£151 0
Carpenter and Joiner: G. Parker	90 10
Plumbers and Glaziers: Bateson & Sons 50 3	
Plasterer: F. Beighton	12 10

DARTFORD.—For Maypole Council School, for Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A.: Architect:—

DARTFORD. —For Maypole Council School, for Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A.: Architect:—	
<i>London</i>	£4,589
McCormick & Sons, Ltd.	£4,545
S. R. Spinier	£254
H. Lousley	£280
I. Kazak	£425
A. & H. Hanson	£498
W. Smith & Sons	£408
<i>London</i>	£,980
G. H. Gunning & Sons	£,980

...	3,988	Bron
-----	-------	------

DUBLIN.—For erection of a cycle factory at Plansinstreet. Mr. T. J. Cullen, architect, 25, Sutcliffe street, Dublin. Quantities by Messrs. D. W. Morris & Co., surveyors, Dublin.—			
T. W.	£3,57 10	H. Duncan & Sons	£2,700 0
J. & F. Keat- ings, Ltd.	3,090 0	J. Keirnan	2,617 12 10
Farmer Bros.	2,956 10	T. Farquharson	2,540 0
W. & A. Martin	2,894 16	M. W. Green	2,532 0
J. & M. Clarke	2,846 19	B. Pemberton	2,430 0
J. Douglas	2,776 4 10	T. Mackey & Sons, Cam- den street, Dublin*	2,428 12 7
J. & R. Thomp- son	2,740 0		
P. Shortall	2,715 15 6		
L. Monks	2,700 0		

3,527 10 0 H. J. J.

J. & F. Ke...	3,960 0 0	H. Duncan & Sons, Can-	2,617 12 10
W. & A. Roberts	2,584 16 0	den street,	2,617 12 10
H. & J. Martin	2,851 0 0	Dublin	2,430 0 0
J. Dougan	2,776 4 10	T. Mackey & Sons, Can-	2,430 0 0
J. & R. Thompson	2,740 0 0	den street,	
P. & J. W. ...	2,712 15 6	Dublin	2,430 0 0
L. Monks	2,700 0 0		

LEIGH-ON-SEA. For erection of a school, for the Essex Education Committee, Mr. Percy Brockbank, architect, County-chambers, Southend-on-sea. Quantities by Mr. George T. G. Wright, 3, Great Winchester-street, E. C.

G. Smith & Sons	£12,832	Hackley Bros.	£9,501
Parren & Sons	11,703	Brown Bros.	6,281
W. & A. Roberts	5,960	W. T. Burrows	8,447
E. Laurence & Sons	10,367	A. H. Frey	9,243
J. C. Maxman	10,219	W. T. Burrows	8,423
W. & A. Roberts	5,960	S. E. Moss	8,998
Davey & Armitage	9,667	S. S. Hammond	8,980
Myall Bros.	9,660		

n Committee. Mr.

LITTLE WALSINGHAM (Norfolk).—For new elementary schools. Mr. Herbert J. Green, Architect and Diocesan Surveyor, 31, Castle Meadow, Norwich. Plans, 1/4 scale, 1890, 1/2 scale, 1891, 1/1 scale, 1892. Mr. A. Hinson 2,607 19 2
J. Smith 100 0 0
J. Needs 2,518 9 0
Young & Co. 4,550 0 0

LONDON.—For pulling down premises, Nos. 2 and 3, Embury Street, and Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 8

LONDON. For erection of a bakehouse at the Workhouse, Cornhill-road, Islington, N., for the Guardians of the Poor of St. Mary, Islington. Mr. E. J. Harrison, architect, 91, Gray's Inn-square, W.C.—

W. Reason	£485	Stevens & Sons	£415
W. Gladding & Co.	480	Bate Bros.	406
G. S. Williams & Son	478	L. Town & Co.	448
Davey & Armitage	470	T. Preston	405
McCormick & Sons	444	B. Jewell, 90, Stroud	
F. W. Dainton	430	Green-road, N.* ..	365

LONDON.—For the reconstruction of the girls' staircase at the Maidstone-road School, Haggerston, for the London County Council—

J. Stewart	£764 0
Stevens & Sons	719 10
W. Shurmer & Sons, Ltd.	699 0
C. R. Price	690 0
W. Lawrence & Son	681 0
J. Grover & Son	650 0
E. Lawrence & Sons, Ltd.	627 0
McCormick & Sons, Ltd.	595 0

[The Architect's estimate, comparable with the tenders, is £701.]

LONDON.—For structural improvements at the Redvers-road School, Hoxton, for the London County Council—

Rowley Bros.	£10,832 0 0
Brand, Pettit, & Co.	10,602 0 0
F. & T. Thorne	10,473 0 0
McCormick & Sons, Ltd.	10,369 0 0
A. E. Symes	10,333 16 6
Kirk & Randall	9,664 0 0
J. & M. Patrick	9,521 0 0
Thomas & Edge	9,439 0 0
McLaughlin & Harvey, Ltd.	9,190 10 3
E. Lawrence & Sons, Ltd.	9,058 0 0
W. E. Blake, Ltd.	7,996 1 10

[The Architect's estimate, comparable with the tenders, is £9,376.]

LONDON. For partitioning work at the Thornhill-road School, Barnsbury, for the London County Council—

Brand, Pettit, & Co. £1,198	Holliday & Green-wood, Ltd.	£997	
E. Lawrence & Sons, Ltd.	1,128	G. S. S. Williams & Son	980
J. Garrett & Son	1,086	A. E. Symes	979
McCormick & Sons, Ltd.	1,076	G. Godson & Sons ..	960

[Architect's estimate. £995.]

[Architect's estimate, £295.]

LONDON.—For paving and other works in connexion with the diversion of Millbank, Westminster, for the London County Council—

H. Lovatt, Ltd.	9,238 7 8	Co.	8,196 5 4
G. Wimpey & Co.	8,745 0 0	G. J. Anderson	8,185 4 7
C. Ford	8,550 0 0	J. Mowlem & Co., Ltd.	8,052 0 0

[The estimate of the Chief Engineer, comparable with the above tenders, is £8,850 lis. 2d.]

[The estimate of the Chief Engineer, comparable with the above tenders, is £8,850 11s. 2d.]

LONDON. For the construction of roads and sewers round the school site on the White Hart-lane estate, and the extension of Risley-avenue to Church-lane, etc., for the London County Council—

E. T. Bloomfield	£4,266 7 9
G. Wimpey & Co.	4,028 14 10
T. W. Pedretti	3,949 1 3
E. J. Knifton	3,554 14 7
F. J. Coxhead	3,545 0 0
Grounds & Newton	3,150 19 7

[Architect's estimate, £3,740.]

LONDON. For the construction of a new engine house at the Crossness Pumping Station, for the London County Council—

J. Mowlem & Co., Ltd.	£106,122 3 3
Topham, Jones, & Railton, Ltd.	89,924 3 7
Griffiths & Co. (Contractors), Ltd.	84,720 2 11
Kirk & Randall	78,804 0 9
W. Scott & Middleton, Ltd.	76,836 19 10
J. Chessum & Sons	74,529 8 6
Pick, Kerr & Co., Ltd.	63,689 18 5

[Chief Engineer's estimate, £78,623 10s. 7d.]

LLANELLY.—For new offices, for the Glamorgan Foundry Company, Ltd., Llanelly, Carmarthenshire. Mr. Joseph Billet, architect and surveyor, 33, Prospect-place, Llanelly:—

T. Williams, Dimpeth, Llanelly*	£1,147 16
---------------------------------------	-----------

LLANELLY.—For alterations to butcher's shop, for Mrs. M. E. Bowen, Llanelly. Mr. Joseph Billet, architect and surveyor, 33, Prospect-place, Llanelly:—

T. Williams, Dimpeth, Llanelly*	£158 5
---------------------------------------	--------

LLANELLY. For additions to Uplands, for Mr. J. W. Rees, Llanelly. Mr. Joseph Billet, architect, 33, Prospect-place, Llanelly:—

T. Williams, Dimpeth, Llanelly*	£200
---------------------------------------	------

LLANELLY.—For additions to No. 6, Woodend-road, Llanelly, for Mr. David Parry, Mr. Joseph Billet, architect and surveyor, 33, Prospect-place, Llanelly:—

T. Williams, Dimpeth, Llanelly*	£260
---------------------------------------	------

MAIDSTONE.—For drainage work and repairs at the public baths, and painting. Mr. T. F. Bunting, Borough Surveyor:—

W. T. Burrows	£275 0	H. Crutenden & Son, 44, Week-street, Maidstone* ..	£359 0
E. Smith	364 10		

MANOR PARK.—For erection of about 283-ft. run of wrought-iron railing, for the Essex Education Committee (Wanstead District Sub-Committee). Mr. C. Herbert Bressay, architect, 91, Bishopsgate, E.C.—

Metal Crafts	£211 5 0	J. & J. Dean	£149 9 6
Strong & Co.	145 0 0		
Lister & Co.	205 0 0	J. Elwell Ltd.	135 10 0
A. W. Robins	179 0 0	Hill & Smith	133 5 0
Wright & Sons	174 0 0	J. Jolliffe, Wan-	
T. Osborn & Sons	173 0 0	stead, N.E.*	132 0 0
A. Webb	149 10 0		

† Recommended for acceptance.

SHOREHAM (Kent).—For alterations and additions at Shoreham Cottage, Shoreham, Kent. Messrs. P. C. Moscrop-Young, E.C.R.I.B.A., and E. H. Glenfield, A.R.I.B.A., architects, 20, Brook-street, Bond-street, W.—

Grover & Son	£6,840 0	Strange & Sons	£6,315 13
Holland & Hannan	6,655 0	Holliday & Green-	
T. D. Grady	6,537 10	wood	6,369 0
Holloway Bros.	6,370 0	Walls & Sons	6,237 0
Wiltshire & Sons	6,340 5	W. Crossley & Son ..	6,062 0

† Accepted subject to certain reductions.

TUNBRIDGE WELLS.—For secondary school, for Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., Architect—

J. J. ETRIDGE, JR.

J. J. ETRIDGE, J^r.

SLATE MERCHANTS. LTD.

EXPERTS IN

SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write—

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

UXBRIDGE.—For the widening of the river bridge in Iwer-lane, Cowley, known as Little Boys Bridge, Mr. J. W. Harrison, Council Surveyor, Corn Exchange, Uxbridge.

H. Burfoot & Sons £136 10	Johnson & Stunt £34 10
A. T. Catley 97 0	W. J. Wilkinson,
T. Hancock 96 5	West Drayton* £79 0
W. S. Try 94 15	

[Surveyor's estimate, £90.]

[Surveyor's estimate, £90.]

WESTMINSTER.—Paving of Durham House street for the Westminster City Council—

Improved Wood Pavement Co., Ltd.	£129 6
Milners' Kerr & Jarrah Co. (1902), Ltd.	127 10
J. Mowlem & Co., Ltd.	126 0
W. Griffiths & Co., Ltd.	123 0
Acme Flooring & Paving Co. (1904), Ltd.* ..	121 10

WHITLEY.—For construction of a concrete retaining wall and steps in connexion with the improvement of the sea banks. Mr. A. J. Bousell, A.M.Inst.C.E., Council Surveyor, Whitley Bay:—

M. D. Young	£371 19 6
Davidson & Miller	797 10 0
Reinf. road Concrete Co.	690 0 0
R. Fisher	563 10 0
G. Armstrong, Whitley Bay*	548 0 0

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
18, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouses, floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

BILLS of QUANTITIES
ELECTROGRAPHED
Quickly, ACCURATELY,
—Cheaply.

E. G. BUCK, 16, Farnhill St., Holborn, LONDON, E.C.
Telephone: Holborn 2335.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.
Polonceau Asphalte.

PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING
SEYSEL ASPHALTE (Direct from the Mines).

"Trop Lry" Glazing

ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.

Copper & Zinc Roofing.

The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address:
"COURTEOUS, LONDON."

Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.
Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

F. BRABY & CO., LTD.

Telephone:
North 3032 (4 lines).

THE BUILDER

VOL. CL.—No. 3592.

DECEMBER 8, 1911.

CONTENTS.

	PAGE		PAGE
(WITH ILLUSTRATIONS)	661	MONTHLY REVIEW OF CONSTRUCTION (continued):—	
.....	664	THE DESIGN OF TALL CHIMNEYS (WITH DIAGRAM)	677
.....	665	COLOURING OF PAPER	679
.....	669	THE BUILDING TRADE:—	
.....	671	PRIME-COST CONTRACTS	680
.....	672	CEMENT	680
.....	672	CONTINUITY OF EMPLOYMENT IN THE BUILDING	
.....	673	TRADE	680
.....	674	WAGES IN THE BRISTOL BUILDING TRADE	681
.....	674	GENERAL BUILDING NEWS	681
.....	674	APPLICATIONS UNDER LONDON BUILDING ACTS,	
.....	674	1894 TO 1909	681
.....	674	PROJECTED NEW BUILDINGS IN THE PROVINCES	
.....	674	THE MANSION HOUSE	682
.....	674	THE SCIENCE OF VENTILATION	683
.....	674	METROPOLITAN ASYLUMS BOARD	683
.....	674	OBITUARY	683
.....	674	LEGAL COLUMN	683
.....	675	LAW REPORTS	684
.....	675	LONDON COUNCILS	685
.....	675	FOREIGN AND COLONIAL	686
.....	675	TRADE CATALOGUES	686
.....	675	PATENTS	687
.....	675	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	688
.....	675	METROPOLITAN WATER BOARD	690
.....	675	SOME RECENT SALES	690
.....	675	PRICES CURRENT	690
.....	675	TENDERS	691

Illustrations.

MARTLEBOROUGH MUNICIPAL BUILDINGS COMPETITION:—
DETAIL OF DESIGN PLACED FIRST, BY MR. T. EDWIN COOPER, F.R.I.B.A. 681

DETAIL OF DESIGN PLACED THIRD, BY MESSRS. NORTH & ROBIN. 682

DETAIL OF DESIGN BY MESSRS. LANCHESTER & RICKARDS. 683

DETAIL OF DESIGN BY MR. W. CURTIS GREEN, F.R.I.B.A. 683

DETAIL OF DESIGN BY MR. ROBERT ATKINSON, A.R.I.B.A. 685

Illustrations.

MARLBOROUGH MUNICIPAL BUILDINGS COMPETITION:	
DETAIL OF DESIGN PLACED FIRST, BY MR. T. EDWIN COOPER, F.R.I.B.A.	
DETAIL OF DESIGN PLACED THIRD, BY MESSRS. NORTH & ROBIN.	
DETAIL OF DESIGN BY MESSRS. LANCRESTER & RICKARDS.	
DETAIL OF DESIGN BY MR. W. CURTIS GREEN, F.R.I.B.A.	
DETAIL OF DESIGN BY MR. ROBERT ATKINSON, A.R.I.B.A.	



The Cappuccini, Amalfi.

AMALFI.

AMONG the many beautiful cities of the South which have been overwhelmed by earthquake or flood, devastated by war, few have retained with all their misfortunes so many of the past with so charming and rescue an aspect as has Amalfi; although almost a millennium has passed since it lost its proud independence its name will ever rank high in the history of the early Middle Ages in Italy. Unaware of the important part it once played on the world's stage, reaching it for the first time either by land or water, and seeing it hemmed between its mighty cliffs and the turbulent sea, would imagine that it had never been other than a beautiful

sequestered village; and, even to those who may have had some recollection of its stirring history, the same idea may have occurred which evidently struck Hallam after he had seen it in 1848, and induced him to append that note to his chapter on "Mediterranean Commerce," in which he expressed his opinion that the stories about its opulence and commerce had been exaggerated, and that the descriptions given of it by William of Apulia are to be taken as a poet's panegyric.

A slight sketch of the history of Amalfi and an account of its many misfortunes are necessary as an introduction to any description of its architecture; and from these we shall see that Hallam did

not make a sufficient allowance for the geological changes which have affected its character, and which had made the statements of the mediæval historian to appear so extremely poetic. The connected history of the place does not commence before the VIth century, for the numerous remains of Classic art to be found in the various buildings did not belong to the site, but were brought, according to popular belief, from the neighbouring city of Paestum, but more probably from Capri or Naples. At the opening of the VIIIth century it already had its bishop, and in 987, after its prosperous era had commenced, Leo, of the family of Orsocomiti, became its first archbishop. Although for a long period it claimed a

connexion with the Eastern Empire, it was in reality an independent mercantile Republic, under the control only of its own elected doge; and it took the head of the first league mentioned in the history of the Middle Ages, when its fleet, allied to those of Gaeta and Naples, in 849, defended Rome from the Saracens and defeated them in the famous battle off Ostia. For their assistance Pope Leo IV. conferred on the Republic the title of Defender of the Faith; and centuries afterwards the event was pictured by Raphael on the walls of the Stanza dell' Incendio in the Vatican. A few years later, however, Amalfi, with Naples, Salerno, and other Lombard States, did not scruple to ally themselves with the Saracens, who, after the death of Lewis II., had gained a powerful hold on Southern Italy. Although Pope John VIII. sought by a bribe of 10,000 silver mancusi to detach Amalfi from the league, the wily merchants pocketed the cash, and, in spite of their sacred title and of the innumerable excommunications thundered against them by the Pope, refused to desert their infidel allies.

This intimate association of the people of Amalfi with the Saracens during the IXth and Xth centuries, which continued after the Norman conquest of Southern Italy, is quite sufficient to account for the manner in which the Siculo-Saracenic style of architecture prevailed in the buildings of the city, and no doubt did much to further the success of their merchants in the countries which had fallen under Mohammedan control. The

factories of Amalfi were to be found in all the principal cities of the East and Sicily; and at Jerusalem, after the destruction of the church of the Holy Sepulchre by the mad Kalif El Hakem, they built the church of Sta. Maria Latina, and the firman granted for its endowment by Melek Muzzafer in 1023 is still preserved in the Franciscan convent of that city.

Amalfi's gradual loss of importance and independence, though not quite at the same time of all its prosperity, coincided with the progress of the Normans in Italy, and reached its climax when, in 1137, its inhabitants were compelled to surrender the city, which had already suffered from previous raids, to a hostile Pisan fleet. But other causes were at work which soon after completed its undoing and for ever destroyed its commercial importance. There seems to be but little doubt that when the city was first built there must have been a considerable undercliff formed by the *débris* fallen from the limestone mountains at the back of it, and on this the greater part of the place had been erected, and between its projections had been formed the spacious harbours which sheltered its fleets. But with all limestone formations abutting on the sea the rocks become undermined and formed into caverns by the fretting waves till the land slips or gradually subsides beneath the waters; and this process appears to have been going on at Amalfi during the whole of the XIIIth century, until in 1343, during some storm of exceptional violence, the whole of the foreshore, with quays,

arsenals, and walls, slid into the Mediterranean. Such slips, though not extensive, seem to have taken place at intervals all through the later centuries, in one of which the cathedral was reduced to its present size; and only two or three years ago a most extensive fall of the cliff took place and caused the partial destruction of the celebrated Cappuccini convent. The cause of this was the prolongation of the coast road past the headland at which the convent stands, to be seen in our view (p. 661), already weakened by the great pilgrimage grotto; and the work, still further reducing the strength of the natural abutment, caused a large part of the Cappuccini, together with a hotel and other buildings beyond the headland, to slide into the sea.

The cathedral church was fortunately built well within the ravine which now contains all that is left of Amalfi, and was thus saved from the catastrophe which overwhelmed most of the other buildings. It is raised high upon a lofty basement, which contains the crypt, and is intersected by one of the numerous low-lying streets which wander among the dark underground parts of the cliff. It is reached by a broad staircase of fifty-seven steps, at the head of which is a large narthex of two aisles extending across the whole width of the church. The internal columns, as well as others which once stood along the front before the recent restoration, are mainly ancient, some spirally fluted, with ancient bases and capitals of different designs. The front of the narthex has been much altered in the restoration, and, although there is ample authority for the characteristic tracery of the windows which show to the north and south, there is none for the raised arch of the central entrance; and the original condition is preserved in an engraving by Schulz in his *Mittelalters in Unteritalien*. The upper part of the façade is entirely modern architect's fancy, the original work having been destroyed in the XVIIIth century, when the church was Italianised throughout.

The great campanile, built not quite square to the main structure, standing to the north of the narthex was erected at an inscription on the east face of which testifies, in 1276; but it has suffered much from the plaster decorations added at a later date. The upper story, however, consisting of a central circular tower, with smaller ones at the angles, still retains its original appearance, and is perhaps one of the most perfect examples of the Siculo-Saracenic treatment of towers, and may be favourably compared with similar ones at Gaeta and Caserta-Vecchia. The green and yellow stone of the intersecting arches, the blackness of the unglazed openings, and the iridescent lustre of the tiles have altogether a most brilliant effect against the sombre background of the surrounding cliffs.

The central portal, within the narthex has its marble jambs richly carved with scroll-work containing mythological subjects, such as centaurs, griffons, and dragons, similar to the work at Monreale and Benevento, and the lintel is partly made up with fragments of ancient cornices. These enclose one of the most remarkable of the bronze doors produced



Duomo, Amalfi.

[Photo, by Sommer.

Constantinople by the founder, Aurachios, and was one of several added during the latter half of the XIth century for members of the noble Amalfian family of Pantaleone which they presented to various places in southern Italy. It is formed in twenty-four panels, divided between two valves, and four of the panels arranged across the centre are decorated with figures of Christ, the Blessed Virgin, and SS. Peter and Andrew, placed beneath round-arched niches. All these are formed by lines incised in the bronze, and filled in with coloured mastics, generally green and red, while the faces are filled in with silver, having the features outlined with finer black niello. The remaining twenty panels have raised crosses of a peculiar shape, only to be found on the bronze doors of Greek origin, such as those at Venice, S. Paolo f.m. Rome, Monte Cassino, and elsewhere in South Italy, each cross being secured to the panels by four bold rivets. The doors bear two inscriptions formed by incised letters filled in with green mastic, which give the name of the donor as "Pantaleon filius Mauri de Pantaleone de Mauro de Maurone mite."

An addition was made to these doors subsequent to their erection by a row of lions' heads riveted on to the second rail from the bottom, each head holding a ring in the mouth. These are not closing rings, nor can they be regarded as ornaments, and like the row of eight across the central doors of S. Mark's, Venice, have been clearly added for some purpose not at the present time quite evident. There is a similar row of heads and rings across the Greek doors of the pilgrimage church of Monte Sant' Angelo, and Hamilton Jackson says of them that they are constantly rattling when the pilgrims are entering the church, for they touch them one after another and kiss their hands afterwards. The discovery in the XIVth century of the curative qualities of an exudation from the body of S. Andrew, known as the Manna of Andrew, made this an important pilgrimage church, and the association of such rings with the idea of sanctuary doubt suggested their addition at that date.

The interior of the church is hopelessly disappointing, for the whole of it has been modernised and decorated in stucco at the beginning of the XVIIIth century by Archbishop Michele Bologna. The eighteen great columns of African papyrus and red Oriental granite, which divided the aisles from the nave, were embedded in brickwork, a pair to each pier like those in S. John Lateran, and cemented over; the frescoes of the walls and the great painting in the apse, showing a gigantic figure of Christ in the act of benediction with the tutelary saints of the city below, were covered up; the great ciborium, encrusted with marbles and supported on pillars of porphyry and verd' antico, was torn down; the ambones were modernised, and all the beautiful furniture and mosaic enrichments of the early church destroyed past remedy; and now we can only say with Bürger's heroine—

"O Mutter, Mutter! Hin ist hin!
Verloren ist verloren!"

Some brilliant fragments of mosaic, equal to the best of those remaining at Ravello or Salerno, have been saved and embedded in the plastering of the walls; and many of these may be found transcribed in Morant Lockyer's valuable and unpublished volume of drawings of mosaic work in the Institute Library.

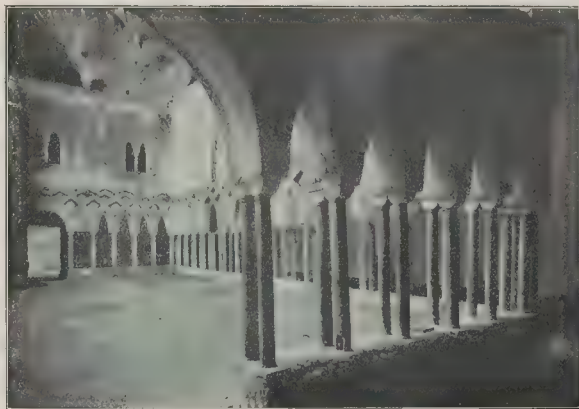
In the great crypt beneath the east end of the church is the shrine of S. Andrew the Apostle, whose body was brought from Constantinople by Cardinal Capuano at the beginning of the XIIIth century. The crypt was very richly decorated with marbles and carving when the altar was erected by Domenico Fontana, and the striking bronze statue of the Apostle by Michelangelo Naccarino was placed on the shrine as an offering from Philip III. of Spain early in the XVIIth century. To the north of the church is an extensive cloister, known as the Paradise, where many of the principal citizens of Amalfi are buried, but which of late years has been occupied to a considerable extent as the Archbishop's stables. It is in all respects like that of the Cappuccini, which we have now to describe.

The same Cardinal Capuano founded in 1212, high up on the mountain side of the west of the city, a convent for the Cistercian order, and placed it under the charge of the Abbots of Fossanova; and in 1223, presumably on its completion, its first Abbot was appointed. It was dedicated to S. Peter of Tocco, a saint unknown to the calendar, but an early Abbot of the Benedictine order; and it was taken under the patronage of the Emperor Frederick II., who raised its church to the position of a capella palatina. Its position, confined to a mere ledge of rock, made any approximation to the usual plan of a Cistercian house utterly impossible; but it is very probable that, with the exception of the cloister and perhaps the chapel, if that was not originally the chapter-house, no portion of the first building remains. The arrangements, until the recent landslide destroyed a portion of the buildings, consisted of a large cloister lying immediately under the overhanging cliff, and opening out of the centre of its east walk

a large church of a single aisle roughly vaulted, and to the south of these and facing the sea a long range of buildings three, and in places four, stories in height, two only of which were above the cloister level, divided up into vaulted rooms about 10 ft. by 7 ft., arranged on two sides of a corridor, which are assumed to have been the cells of the Capuchins who succeeded the Cistercians in the occupation of the house, and who have given place in these days to the guests of the Albergo Cappuccini.

The cloister as it appears from the entrance to the church and the great pilgrimage grotto, now no more, are shown in our view on this page. There were only three walks after the southern range of buildings had been erected, and only the northern one of sixteen bays was perfect. The arcading is formed of three interlacing arches, the tracery being unpierced, which stand on coupled columns of white marble with cushion capitals, the angle piers being formed of four columns with capitals carved with leaves and volutes. The arcading has been covered with rough-cast, so that the material of which it is built does not appear; and these, together with the cloisters of the cathedral already mentioned, and of another convent still remaining in the city, all show the same treatment and seem to be of the same date.

Of the fortifications with which from the earliest times the place had to be protected, the most important towards the sea were engulfed in the great landslide of the XIVth century; but on the spur of the mountain, known as the Monte Aureo, which divides Amalfi from Atrani, and shows above the cathedral in our view, is a round tower and some other crumbling remains of the once strong Castello Pontone. Along the Costa d'Amalfi, however, some seven or eight of the promontories are still crowned with massive and heavily machicolated towers, which tradition says were erected by the Saracens as friends or foes of the city; and they still remain in their ruin as useless, but much more picturesque than the martello towers of our own south coast.



Cloisters of the Cappuccini.

NOTES.

King Edward Memorial.

WE notice that, in answer to a question in the House of Commons, Mr. Dudley Ward, representing the First Commissioner of Works, stated that the Government had not yet given its consent to the selection of the site at the end of the Broad Walk in the Green Park for the proposed memorial to King Edward VII. He understood that before anything was finally settled the designs should be exhibited and the House of Commons be given the opportunity not only to discuss, but to give a verdict on the question. We have already expressed our adverse opinion on this site and a preference for that at Hyde Park-corner, and we hope that the House of Commons will express the same opinion. There is little doubt that the artists selected will produce a competent design for this site, but they could produce a better one if they had the Hyde Park-corner site to deal with. We trust that when the matter comes before Parliament this point of view will not be lost sight of, and that the discussion will turn on the comparative suitability of the two sites and not on the merits or demerits of the particular designs submitted except in so far as this may tend to emphasise or prove the inherent limitations and drawbacks of the site.

The King Edward Memorial, Liverpool.

ONCE more the Liverpool Finance Committee has been pronouncing on the King Edward Memorial proposal for St. George's Hall, and has unanimously approved the revised scheme already discussed, which places the monument at one corner of the south podium and leaves the other corner "to let" for some future celebrity. The absurdity of such a course is obvious, and only indicates how hopelessly incapable is this Committee in the task of dealing with the aesthetic or philosophic aspect of the question. The *Liverpool Daily Post* points out the superior claims of the central position on the east side of the hall, advocated by Professor Adshead. The fact that this position is already occupied by a statue of the late Earl Beaconsfield seems to have imported a certain amount of political bias into the discussion, but as this statue is manifestly inadequate in scale and mass it would clearly be advantageous to find a place for it elsewhere. The whole conflict is but another example of our haphazard procedure in leaving matters of this kind in the hands of those least qualified to deal with them.

The Mansion House.

WE make a reference elsewhere (p. 682) to the present condition of the Mansion House and the apparent need for drastic renovations. The immense value of the site has aroused the feeling among the City magnates that it would be good business to remove the Lord Mayor's residence to a less valuable site. That of the Old General Post Office has been suggested, but, of course, if any change is to be made, the logical position is one in intimate relationship to the Guildhall. We should, however, strongly

deprecate any change at all if it were made with a view to the demolition of Dance's building, which, with all its faults, harmonises with the Bank and the Royal Exchange, and could not be adequately replaced by a block of commercial offices. To retain the building and divert it to some other civic purpose would be the most reasonable solution of the problem, as it is in many respects ill suited to its present use; but rather than lose such a familiar and dignified feature of the City's central group we should prefer to maintain the present arrangement, subject to all possible amelioration in the way of approaches and internal planning.

Southwark Bridge.

IT was stated at the Court of Common Council's meeting last week that the reconstruction of Southwark Bridge will be at once proceeded with. The bridge was built in 1815-1819, at a total cost of some 800,000*l.*; the ironwork, weighing 5,780 tons, was supplied by Messrs. Walker, of Rotherham, Messrs. Jolliffe & Banks were contractors for the masonry. John Rennie's designs were for a bridge having three cast-iron arches, whereof the middle arch has a span of 240 ft., and the two others a span of 210 ft., with a headway of about 30 ft. above the highest spring tides, and a width of 42½ ft. The masonry is tied throughout with vertical and horizontal bond stones; the iron ribs form a series, then newly adopted, of hollow masses, or voussoirs, as of stone, all the segmental pieces and braces being secured with long wedges and dovetailed sockets; bolts were used only during the construction. The spandrels are similarly connected; the roadway is of solid cast-iron plates joined together by means of iron cement. Joseph Gwilt made the approaches, north and south; the gradient rates are steep, being 1 in 20 (Queen-street) and 1 in 23 (Bridge-road), and have militated against the use of the bridge for horse-drawn traffic. The Corporation bought the bridge in 1868 for 200,000*l.*

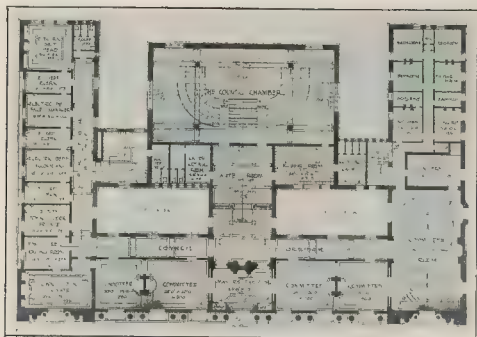
London Institution, Finsbury-circus.

OUR readers will recollect that four or five years ago proposals were made for an amalgamation of the London Institution with the Royal Society of Arts. The Oriental Studies Committee of the India Office have just issued an interim report, to which are annexed Professor F. M. Simpson's plans for adapting, at a cost of about 25,000*l.*, for purposes of a School of Oriental Languages, the existing premises of the London Institution, of which the site is tentatively valued at not less than 100,000*l.* The Committee are unanimously of opinion that it would be difficult to find a site with greater advantages than that contemplated by their report. The London Institution, established in 1805-6 by a proprietary body for "the advancement of literature and the diffusion of useful knowledge," had its first home in what had been Sir Robert Clayton's house, *temp.* Charles II., at No. 8, Old Jewry, where Porson lived as librarian. In 1812 the library and offices were transferred to King's Arms-yard, Coleman-street. Seven years afterwards the Institution migrated

to the present buildings which Cubitt had erected in the then Amphitheatre, Moorfields, at a cost of 31,124*l.*, after designs and plans by William Brooks, who adapted the Corinthian portico from the Temple of Vesta at Tivoli. Of the laboratory, designed by W. H. Pepys F.R.S., there is a view in Parke's "Chemical Catechism," 1826. The library, 97 ft. by 42 ft. and 28 ft. high, on the first floor, is one of the finest rooms after its kind in London; in the rear is the theatre or lecture-room, having a capacity for 700 persons. William Upcott, who succeeded Porson in 1808, collected the valuable series of topographical works; another librarian was Richard Thomson, author of "The Chronicles of London Bridge," 1827.

The New Examiner of Plays, and After.

THE recent appointment by the Lord Chamberlain of Mr. Charles Brookfield as a joint Examiner of Plays is not without direct interest to architects, in view of the growing feeling in favour of the appointment of a Minister of Fine Arts. For the first time in its history since the end of the XVIIIth century the theatre during the last twenty years or so has opened its doors to a type of work which has commanded the respect and interest of people who wish to find in their amusements all once an intellectual and artistic recreation. Matthew Arnold's almost despairing appeal for the theatre to reorganise out of its inconsequence and inanities a better state of things was uttered at a period which Mr. Brookfield would probably distinguish as the golden age of the later British drama. A better state of things in more recent times has come to pass; and then we have at the height of a progressive movement this reactionary appointment. We do not doubt that Mr. Brookfield will be an impartial judge according to his lights. But that is not the point. The point is that it will be necessary for Mr. Masfield, Mr. Galsworthy, Mr. Bernard Shaw, Mr. Granville Barker, and other dramatists of the thoughtful kind, who are gradually forming a school of drama unique in its way, to submit their work before production to a type of intelligence with which they are wholly out of sympathy. And this brings us to the Minister of Fine Arts. The unreserved condemnation by so eminent a politician as Sir William Harcourt of Mr. Norman Shaw's New Scotland-yard, which will be within the recollection of many of our readers, suggests the danger. If we are to have a Minister of Fine Arts we must have the right man. A merely bureaucratic appointment, or an appointment of merely social influence, is calculated to do more harm than good. In France, where the bureaucratic element so largely counts in system, it scarcely operates at all in the choice of its controlling Ministers; and one of the bright spots in the history of the French administration is that it has on more than one occasion given commissions to sculptors and painters who were antagonistic to the dominating Academic influences of their day, but who are now included among the most distinguished of their countrymen. In the case of the drama the



By Mr. J. Reginald Truelove, A.R.I.B.A.: First Floor.

right in this way, which explains, if it does
excuse, so regrettable a tendency. But
not this sort of thing tend to discredit
petitions in the eyes of thoughtful
ple, to give the enemy occasion to
pheme, and to refer contemptuously
the "Renaissance box of bricks"? May
not tend to deter the more genuine and
ere artists from taking any part in what
t appear to them too much like a vulgar
mble in which real artistic merit is apt
be overlooked unless it happens to be the
of the poster?

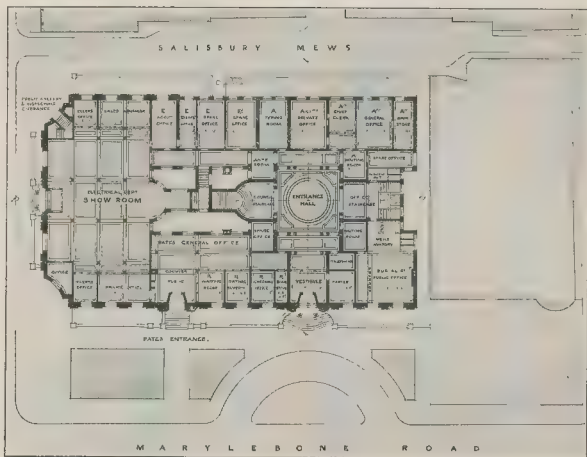
our preceding article we expressed our
satisfaction that the assessor had made up his
d as to the right treatment of the scheme.
had awarded the premiums to designs
ch were all variants of the same general
e. When, however, we come to those
ch he has commended, we find he has
started from this principle, and it is not
clear on what grounds he has com-
mended them.

We can only presume that, having awarded
prize and three premiums to the best
ked-out examples of the right idea, he
sidered that some recognition was due to
best worked-out examples of various
ing ideas. It is a question whether this
necessary or even advisable, although
aps there is no particular harm in it,
vided the position is distinctly under-
d. In this case, however, as he has not
mended several competent and well-
ked-out examples of what he himself
siders to be the right idea, this procedure
ears to do them some injustice. It
ht be fairer not to commend any on the
ng lines unless all the commendable
s on the right lines are mentioned first.

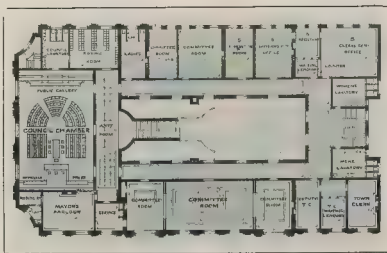
he design by Mr. F. G. Troup is one
mple out of several. The main idea of the
and the general treatment and scale of
levation are both on the approved
s. The plan is at least as architectural
he three premiated ones, while its minor
ects are no greater. If the elevation is
so attractive at first glance, it is more
ressive, while the detail shows it to be a
et and refined study of the Doric which
y people might think more characteristic
the nature of the building, and more in
mony with the general character of its
ironment.

Mr. Robert Atkinson's design is another
instance. Here a straightforward plan,
which, no doubt, has its weak points, is
expressed in a straightforward manner with-
out any striving after false or fanciful effect.
It might possibly be thought that both this
design and that by Mr. F. G. Troup, as well
as Mr. Gascoyne's, amongst others, show
a more delicate feeling for architecture
than any of the premiated ones, and are
as worthy of recognition as any of those
commended.

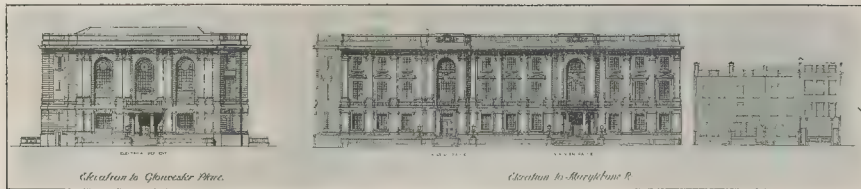
Another way of treating the scheme which
commended itself to several of the com-
petitors was to place the Council Chamber
in the centre of the building. In the
circumstances we do not think it the right
treatment; but, at any rate, it has the
advantage of placing the principal room
in the central position, so permitting a
pyramidal treatment leading up to a central
feature naturally obtained without undue
effort or cost. A commendation goes to



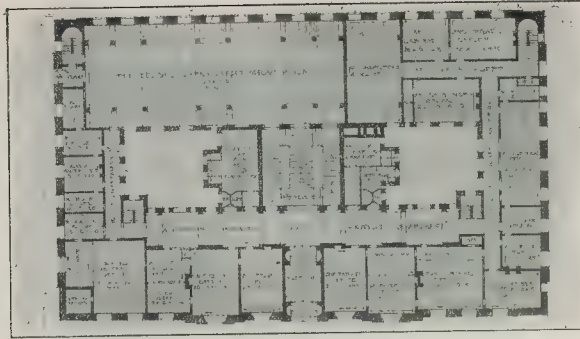
By Messrs. Lanchester & Rickards: Ground Floor.



By Messrs. Lanchester & Rickards: First Floor.



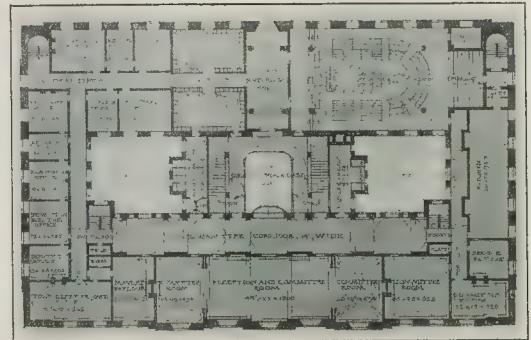
Design by Messrs. Lanchester & Rickards: Elevations.



By Mr. W. Curtis Green, F.R.I.B.A.: Ground Floor.

tural qualities of a sketch design without the aid of details, then, of course, we must put up with them till the conditions improve. But even as things are, surely it would be possible either to have double competitions in every case, or else to so arrange that the assessor would have power to call for details of half a dozen or so if he found it difficult to come to a right decision without them.

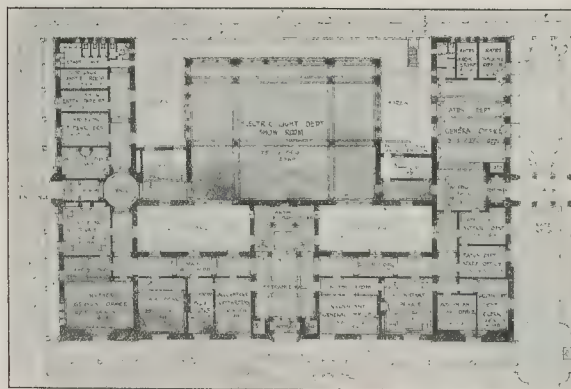
One evil result of the present system is very apparent in this competition. With very few exceptions, every one of the competitors has been spending time on his detail which would have been more profitably employed in perfecting his scheme as a whole. The result is that the scheme suffers. We have no hesitation in saying that if no details had been asked for the general level of the designs would have been appreciably raised. As it is, we find the most chaotic plans, and others in which it is evident that the complete development of the idea has had to be abandoned in order to spend time on a detail which, in the circumstances,



By Mr. W. Curtis Green, F.R.I.B.A.: First Floor.



Elevation to Marylebone-road.



By Mr. J. Reginald Truelove, A.R.I.B.A.: Ground Floor.

can express little that is relative to the matter in hand. How many of these schemes have been carried far enough to call naturally for a detail? How many are still in that unfinished state in which the mere idea of a detail is absurd? It is a little difficult to sympathise with the attitude of mind which takes a pleasure in elaborating details where the natural instinct would be to go on recasting and remodelling the scheme until every unit had fallen into its proper place and some general coherence and structural unity of conception had been obtained. Yet, if we may judge from the unnecessary size and elaboration of many of the detail drawings, considerable pleasure has been taken in them, and more importance has been attached to the presentation of a striking detail than of a striking plan.

Indeed, when we notice also how many inadequate incoherent plans have been forced into some appearance of outward

symmetry for the sake of the elevation, and how often arbitrary elevations are just planted on without any relation to the plans they are supposed to express, we cannot but feel that the chief interest of many of the designers lies in the elaboration of features and details. They seem quite unconscious that the art of designing begins with the plan, and that there is as much art and as much pleasure in so arranging and grouping the units that their truthful and unforced expressions on the elevations shall naturally produce a characteristic and satisfactory effect, as in elaborating this effect with columns and sculpture. It is the first process which is the essential one in a competition, while it is just the one that nine competitors out of ten seem to ignore or to take no pleasure in whatever, but prefer to adopt a method of procedure that reduces architecture to the level of scene painting or at any rate to that of an applied art.

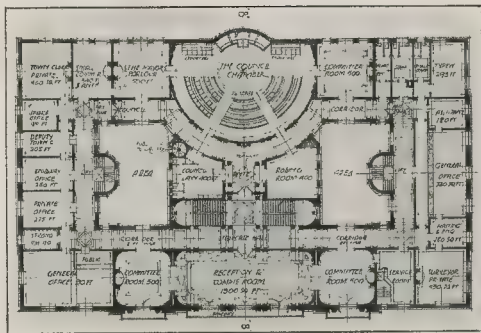
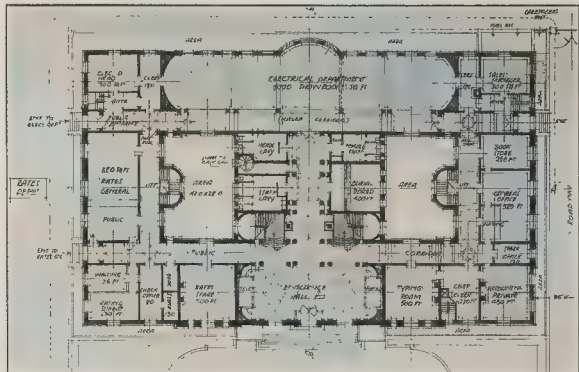
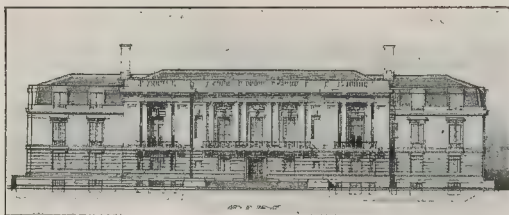
There is no doubt that, speaking generally, many of these designs show an advance towards a simpler and broader treatment and a more competent handling of the forms of classic architecture.

This is so much to the good; but the manner in which these pleasing forms and features are so often applied, or misapplied, leaves us with an unpleasant feeling of doubt as to the sincerity of the designers. We cannot help asking ourselves whether all these colossal columns, towers, domes, groups of sculpture, and other imposing features are really felt by their authors to be the only natural and inevitable expression of the necessities of the case and of the nature and purpose of the building, or whether some of them may not owe their existence rather to a desire to find some novel or imposing feature which will catch the eye of the assessor.

We are bound to admit that in the past the eye of the assessor has frequently been

Minister of Plays is not a Minister, but the expert who advises the Minister. The Minister of Fine Arts would have larger more direct powers of assistance control, of veto and supervision even a Lord Chamberlain, however sed, with regard to an art, so far as architecture is concerned, which makes it all the more necessary therefore that a Government establishes the office that it should choose not only a man likely to be impartial, but also a man without preconceived notions in the direction of a type of art that as an intellectual force is read as Queen Anne.

The two Honorary Associates who were added to the roll of the Royal Institute of British Architects on Monday last will be welcomed by all members of the profession. Mr. Herbert Crane and Mr. J. Hubert Marshall represent two artistic interests far enough apart, but coming undoubtedly within the prescribed zone. Of Mr. Crane, William Richmond said truly a few years ago that he had brought more hours into many homes than any other of the century. But we must not forget, and the recent election at the Institute will help us to remember, that he has achieved distinction in other ways, having given, for example, to the art of interior decoration a refined character which was not surpassed in the Victorian era. It will also be recalled that Mr. Crane was one of those who successfully claimed that the west of Lincoln's Inn-fields should not be allowed to suffer in the Holborn improvement scheme. Of Mr. Marshall we have heard recently in connection with his work as Director-General of Archaeology in India, and need do no more than express our satisfaction that probably through the intervention of Lord Curzon the intention of the Government to abolish the office was frustrated. That Mr. Marshall may carry on his excellent work many years is the hope of all those interested in the future of archaeology in India.



By Mr. Robert Atkinson, A.R.I.B.A. : Elevation and Plans.

MARYLEBONE MUNICIPAL BUILDINGS COMPETITION. [SECOND ARTICLE.]

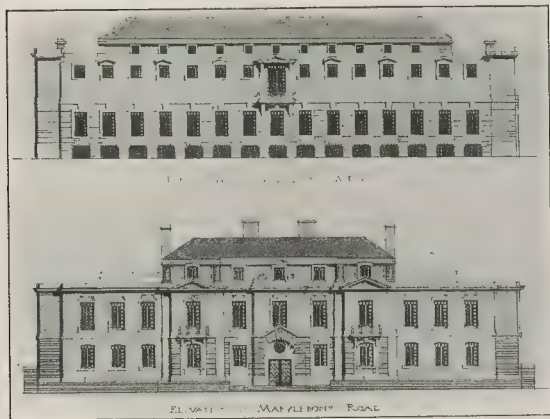
ON looking at these 180 detail drawings, and trying to realise the amount of work involved and the nature of that work, we cannot help wondering if they are really all necessary to enable the assessor to form a right judgment. To maintain that they are necessary is a doubtful compliment to either assessor or competitors. In this case they seem of little value in assisting to a right selection, for in the great majority of cases they tell us little of importance that could not have been gathered from the elevation.

We imagine that Mr. Cooper must have won on his general solution of the problem, even if his claim had not been backed up by so arresting a detail.

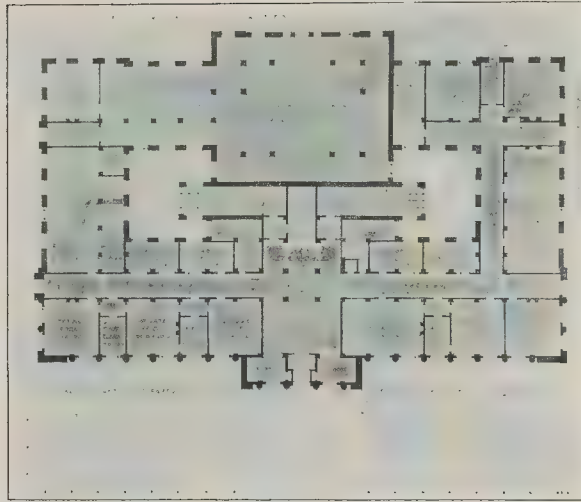
We certainly do not want to see designs selected simply as practical solutions of a problem, with no regard whatever to their aesthetic qualities.

If the present conditions are such that the competitors are unable to show, or the assessor is unable to discover, the architect-

Q



By Mr. W. Curtis Green, F.R.I.B.A. : Elevations.



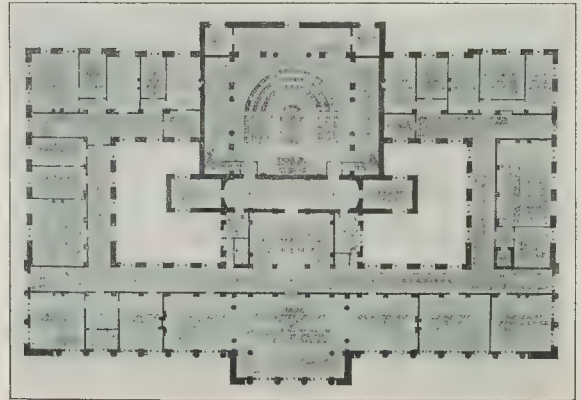
By Messrs. Tait & Whitelaw : Ground Floor Plan.

an able design by Messrs. Clyde Young & East, which, however, does not take full advantage of the opportunity afforded by a central Council Chamber. If any design on these lines was to be commended, it might perhaps have been more reasonable to commend one such as that by Mr. Haywood, which shows more recognition of the possibilities of this treatment, and carries out the ruling idea to its logical conclusions in a way that shows some feeling for monumental design.

Mr. Curtis Green's design may not be so complete a solution of the problem as some, but it displays qualities which interest us more.

The various units of the front block are rightly placed and well expressed on the elevation in a way that is agreeably reminiscent of the manner of François Mansart and of the Carnavalet Museum. The method usually adopted with so much success by Mansart, of drawing out the expression of the arrangements by emphasising the different units or groups of units by separate roofs, is effectively and legitimately employed to emphasise the grouping of the front elevation. It is difficult, however, to admit that this method is rightly applied to the back elevation, where the treatment of the attic seems to call for more justification. The difficulty seems to arise from the position of the principal units on this front, the Electrical Showroom and the Council Chamber, which do not occupy positions in accordance with their importance, and have no organic relation to one another, or to the scheme as a whole. As their emphasis on the elevation would destroy the balance of the composition, they are masked behind a flat wall, and the elevation

loses in interest to that extent. Had they been placed on the central axis they could have been expressed, in which case an attic and separate roof over the Council



By Messrs. Tait & Whitelaw : First Floor.

Chamber alone would naturally express its position and size.

The general treatment of this scheme in elevation and detail shows a reticent and sensitive feeling for design which rarely

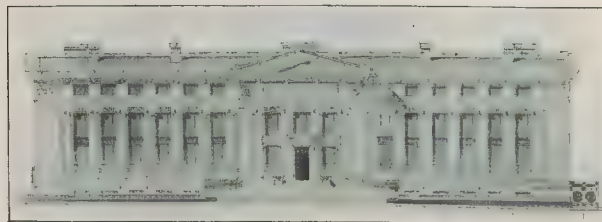
appears in a competition, and more rarely still obtains the recognition it deserves.

Messrs. Cooke & Twist's E-shaped design solves the problem of light to the Electrical Showroom, and dispenses with small central areas; but it involves dark corridors and defects in convenience. The elevations and detail are expressive, right in scale, and pleasing in quality. A good design in itself, but on lines which are not easily adapted to this class of building.

Mr. Reginald Truelove has a well-constructed scheme, truthfully expressed by competent elevations, which is a slight variant on the accepted idea. The three reception-rooms, however, are not in suite as one unit, and it is doubtful if the large committee-room is properly placed, or if it is advisable to occupy space on the principal floor with housekeeper's apartments for the sake of convenience of service.

Messrs. Lanchester & Rickards obtain internal effect with a direct rising approach and vista to the Council Chamber, placed where its full value in the scheme can be realised. The elevations are true in scale with the internal structure, and adequately express the character of the building.

Messrs. Tait & Whitelaw's plan is spoiled by the rooms looking out into the small central areas. Surely in so small a building as this, possessing four frontages with good light, there is no excuse for placing offices in the internal area. This is the place for the lavatories, which are placed on the principal elevation. This elevation is a most competent design in itself, but it must be admitted that it is not very characteristic of this class of building, nor exactly expressive



By Messrs. Tait & Whitelaw : Elevation to Marylebone-road.

of the internal arrangements. It is a pity that so imposing an entrance is bottled up by the porter's box and telephone.

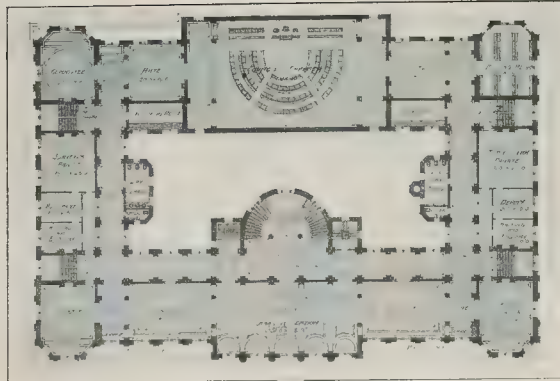
Messrs. Jemmett & McCombie's design is well laid out and well constructed, and this is adequately expressed in the elevations, in which the various units of the plan are emphasised in accordance with their relative importance.

Mr. William Flockhart has adopted the approved idea on plan, and his elevations and details are extremely pleasing, but they do not express with any exactitude the position of the internal units.

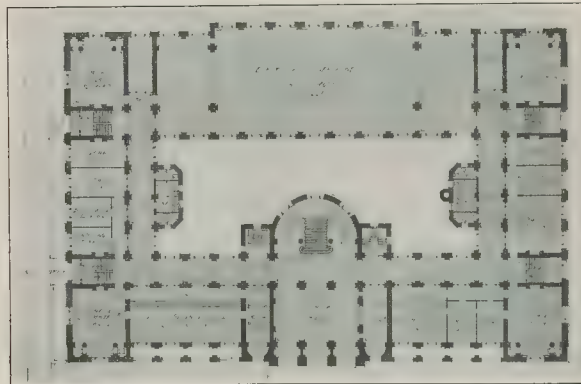
Messrs. Geoffrey Lucas and T. A. Lodge, with C. A. Farey, submit an interesting design. The elevations which we illustrate are broad in treatment and good in scale.

Messrs. Charles Nicholas & J. Dixon Spain have a well-worked-out plan, which is the same variant of the approved idea as that adopted by Mr. Truelove.

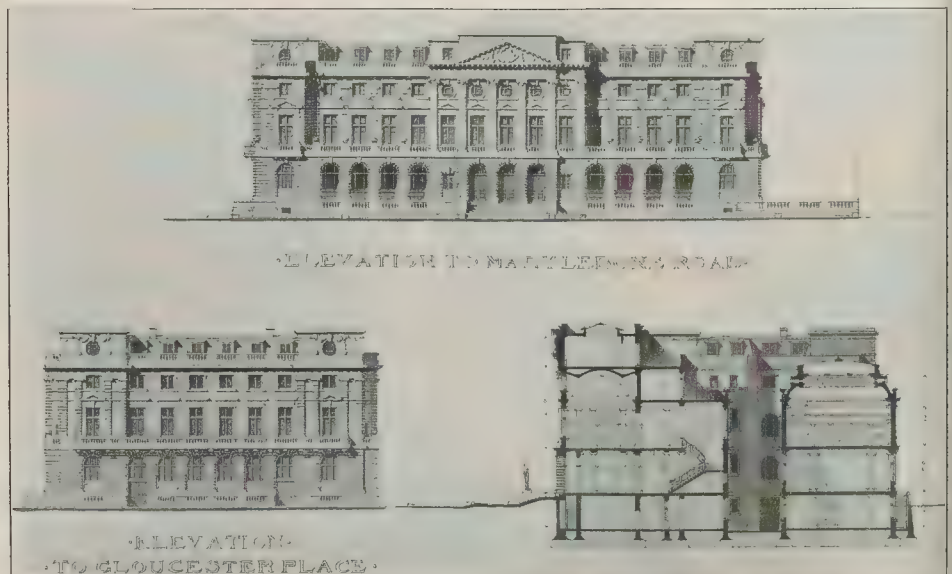
Messrs. Leeming & Leeming's plan is



First Floor.



Ground Floor.



Marylebone Municipal Buildings: Design by Messrs. Jemmett & McCombie. Elevations and Section. (See page 668.)

addition to the amounts included in the 11,000*l.*, 500*l.* was provided for terra-cotta and 150*l.* for treating the front concrete wall, half of which could be deducted if it was required to be cheapened.

The most interesting part of these works was the comparison of the three schemes so as to get the lowest price from open tender, and to show how each construction compares with the other. In the first case, a scheme was prepared on the steel-frame system, the whole to be cased in with concrete afterwards. A design was then prepared, making the steelwork of light sections, such as angles, tees, built up at the maker's yard ready for fixing at the site, and in this scheme full value was taken of the concrete for the compressional members. Later, it was designed in reinforced concrete, and the costs from actual tenders were:—

Reinforced concrete building	... £11,991
Light steel frame	... 13,210
Steel frame cased in concrete	... 14,200

This clearly shows the saving in a reinforced concrete building where the building is of average size and the sheeting can be turned over. Another interesting example was a floor built over wire ovens and prepared for taking five stories. The load was 2½ cwt. per square foot, and including foundations, superstructure, 4 in. reinforced concrete walls cement finished, and all steel casements and fittings; the cost was 25*s.* per super. yard of floor covered, two floors only being erected.

Another work recently executed was a floor with a cantilever 10 ft. 6 in. long, built over ovens again, but in an existing building. The area covered was 800 yds., and the price when carried out for foundations 3 ft. below the ground was 19*s.* 6d. per super. yard.

For foundation work Mr. Burke gave a very interesting example which he was called in to act upon in Liverpool some eighteen months ago. A site had been chosen for a public building, and after the contractors commenced excavating they found that half the building would come upon a quarry partly worked, the other half on that which had been worked and had been filled up to 90 ft. The design eventually carried out was the sinking of two concrete piers 90 ft. to solid earth, and from these reinforced concrete beams, 7 ft. 6 in. deep by 24 in. wide, were carried and cantilevered so as to take the new building. The cost was about 1,000*l.*

Another interesting example some time ago was a scheme of precipitation and sludge tanks for treating 1,000,000 gallons daily of sewage. Space was very limited. A scheme of tanks,

ft. by 12 ft. wide, with cast-iron plates for sides and bottom, was prepared. The cost of this worked out to nearly 7,000*l*. A scheme of brickwork in cement was then arranged. In the capacity could not be obtained without using more land. Apart from the land, the work worked out to just over 6,000*l*. It was decided to use reinforced concrete, having external walls without ties 9 in. thick at the bottom, 6 in. thick at the top, 8 ft. high, and was just over 4,500*l*. The work, when it is being constructed, was shown on the pen, and the author said he believed it was the first set of tanks to be constructed to give a capacity in this country in reinforced concrete.

A very interesting example of pile and roadway work was given. This was designed by the English Velvet and Cord Dyers' Association. They wished to enlarge their works, but they were handicapped through having the river on one side, the govt (for supplying the works with water) on the other, and beyond the footpath and canal. On the one side the river was dammed and a reinforced concrete dike made. From this ran the columns and beams for forming a new roadway over the river and at the same time carrying the buildings to be erected. On the other side 12-in. concrete piles were driven to carry the new buildings. The super-yardage of the work was 1,250 and the total cost was 2,800*l*, including paving. The roadway was designed to take a 10-ton motor wagon.

Another work designed was a new roadway 12 ft. wide to carry two traction engines and heavy passing side by side. The suspended bridge was carried by columns, beams, and slab was 12 yds., and an equal portion had retaining walls to support the made-up road. The cost of this work was 2,000*l*.

In railway bridge work one example was given for Ambergate to carry one set of rails. It has one central pier in the river the width of which is about 120 ft. There are two 60-ft. spans and the width of the bridge is 12 ft. The cost, from tenders already sent in, is 10,000*l*.

Mr. Burke then dealt with the treatment of reinforced concrete for architectural effect. He stated that this must appeal to everyone as a very interesting and worthy of consideration view of the fact that as time goes on this particular method of construction must come more and more into favour. His own experience has been in buildings of the warehouse and factory type, where the first consideration is utility, with very little scope for elaborate design on the elevation; but at the same time question had been considered and the following were his views on the subject:—Taking the ordinary works or warehouse building with the orthodox piers, plinth courses, cornices and sills, stone bands with cornices, capitals, etc., this type of building in reinforced concrete can be very ably and economically treated. The concrete columns on the outside walls would be designed as piers of the necessary proportions to suit design and the frame beams between same utilised as window-heads with continuous band. Between the framework at 4-in. reinforced concrete wall could be constructed so as to be connected with the piers and the frame beams; the window openings and sills would, of course, be framed in the sheeting, and in case of any moulding, being required the jambs would be left high and the moulded work formed at another elevation.

In the case of rustication or V being required the blocking out of the piers, this can be done by the timber being fastened on to the ceiling before same is fixed, care being taken to prepare the timber with a good wash and so that these strips are slightly bevelled as to ensure clean striking. The ballast of this class of work should be very fine and granite if possible. If the elevations are treated so as to ensure all voids being closed off the sheeting is struck, a very good job assured and the difference from stone is hardly noticeable. If a combination of brick and stone dressings is required, the framework may be elevated on exactly the same way, the 4-in. reinforced concrete wall would be substituted by a 9-in. brick one and the reduction of moulded work or terra-cotta ornaments is a simple matter. Suppose, then, the treatment of a classic building in reinforced concrete is reviewed. Consider the monolithic method. The building of the main walls would be a very simple matter, as any details of the way of cornices, blocking out, and the

like, as well as panelling, could be easily executed in the sheeting. Then turn to a shaft with a Corinthian capital. You will see instantly that to carry out the shaft alone satisfactorily would be a very difficult job, and as far as the capital is concerned would be practically impossible.

This now carries us to the method of casting independent blocks, which would be placed in position in the same way as is now adopted with terra-cotta and reinforced concrete. The question of carving then arises. Taking it for granted that such a front could not be executed in concrete alone, the introduction of stone for reasons stated becomes necessary. Considering the combination of concrete and stone blocks, the two substances would have to be matched both in texture and in colour to be at all satisfactory. This, of course, could be done with care, but, supposing that a suitable appearance of the work on completion be attained, we must not lose sight of the probable change that would take place through the exposure to weather and general atmospheric conditions. From this the architect would then have to decide whether it would be worth while taking the risk (which would certainly exist) of adopting reinforced concrete with the combination of stone to save the extra cost which an entire stone front would incur.

In conclusion, Mr. Burke illustrated by lantern slides many examples of work he had carried out.

The lecturer was accorded a hearty vote of thanks.

An interesting discussion followed. In reply to the questions, Mr. Burke stated that he always specified the best English cement to be properly aerated and slow-setting. He did not like coke breeze or slag for the aggregate. He preferred broken bricks. The concrete in the proportion of 3 : 2 : 1 should be very liquid and well rammed. Although theoretically spiral reinforcement was best, he preferred to use $\frac{3}{4}$ -in. bent angle rods to connect the vertical bars. It was not necessary to paint the steelwork previous to encasing it. He urged builders when tendering to allow for plenty of strong timber for casing—at least 33 per cent., as, although the sides could usually be struck after ten days, the bottoms supports sometimes took three or four weeks.

At the business meeting previous to the lecture two new members and one new Associate were elected.

The Leeds and Yorkshire Architectural Society.

A general meeting was held on November 30 in the Society's Room at the Leeds Institute, the President, Mr. Sydney D. Kitson, M.A., F.R.I.B.A., in the chair.

A very interesting paper was read by Mr. Alfred Mattison on "Old Leeds." He described its growth and development from a village up to the city of the XIXth century, illustrating his text with many slides of old documents and engravings, etc.

Mr. W. H. Thorp, F.R.I.B.A., in proposing a vote of thanks, deplored the loss of many of the historical fabrics so reminiscent of the early days, and remarked upon the Red Hall, Guilford-street, which is at present undergoing drastic changes in the way of renovation and alteration. The motion was supported by Mr. C. B. Howdill, A.R.I.B.A., who spoke of the lack of civic spirit shown in Leeds, especially with regard to architectural development.

GENERAL NEWS.

Professional Announcements.

Owing to the reconstruction of Catford Bridge, and the consequent rebuilding of the head offices of Messrs. Norfolk & Prior, architects and surveyors, at 4, Station-buildings, Catford Bridge, the firm have temporarily removed to No. 7, Station-buildings, where business is being carried on as usual.

Mr. W. H. Johnson, jun., civil engineer and architect, has removed his office from 20, George-street, to 33, York-place, Edinburgh, where he has taken over the old-established business of Messrs. Menzies & Cockburn, civil engineers and architects. After this date he will continue the business under the firm name of Menzies, Cockburn, & Johnson. His new telephone number is Central 2621.

Mr. George P. Allen, architect and surveyor, has removed his offices from Dacre House, Arundel-street, Strand, to No. 32, Craven-street, Charing Cross, London, W.C.

School Accommodation.

It is estimated that the capital cost of providing the additional school accommodation necessary to carry out in London the County Council's ideal of "40" and "48" classrooms would be 2,000,000*l*. Increased maintenance expenditure would be involved on the completion of the scheme to the amount of 400,000*l*. per annum, and additional debt charges of 110,000*l*. per annum.

The Dering Collection.

On December 12, 13, and 15, Messrs. Norris & Duvall, of Hertford, will sell at auction the contents of Lockleys, near Welwyn, the residence of the late Mr. G. E. Dering. The collections comprise some fine old furniture of the Adam, Sheraton, and Hepplewhite periods, with earlier specimens, marble Italian statuary, and Dresden, Sèvres, and Berlin china. The pictures by old masters will be sold by Messrs. Christie on December 16, at their rooms; it seems they have as yet been unexhibited, and they include examples of the Dutch, German, and Flemish schools, with Hoppner's portraits of his wife as "The Primrose Girl," and Thomas, second Earl of Chichester.

Rome to Ostia Railway.

A French company has laid before the Municipality of Rome, who, it is said, are in favour of the project, proposals to construct an electrical railway from Porta San Paolo to Ostia, with its line underground between the terminus in Piazza Venezia and the Palatine-hill, and with a sunk cutting to Porta San Paolo. The cutting beyond the Palatine-hill will traverse a greater portion of the Zona Monumentale, that contains many relics of ancient Rome hitherto unexplored, and representations are made by Commendatore Boni against the probable destruction of antiquities involved by the scheme as planned at present.

Overstrand Church, Norfolk.

The Society of Antiquaries have passed unanimously a resolution that any proposal to restore the ruined church of Overstrand is undesirable and would result in the disappearance of much of the evidence of antiquity which still remains, and that a preferable course would be to secure the ruins as far as possible from the ravages of ivy and weather without attempting to graft new work on to them. The original church of St. Martin, distant two miles from Cromer, was, together with much of Cromer itself, destroyed by encroachment of the sea. The present church was built temp. Richard II.; the chancel and part of the nave fell into ruin; the remaining portion of the nave was adapted for worship in 1855. A new church was built in the churchyard forty-five years ago.

Carnarvon Castle.

A Committee of the Town Council have formulated proposals for rebuilding, with the consent of the Office of Works, the banquet-hall for purposes of a National Art Gallery for Wales, with a branch of the National Library and Museum, in commemoration of the Investiture of the Prince of Wales.

Bills (London) for the Session 1912.

The Commissioners of Works will apply in the course of next session for powers to enable them to acquire properties in London for a further extension of the Patent Office on the Took's-court, and Fumival-street sites, and in respect of the Institution of Civil Engineers, Great George-street; also to take some property, forming portion of Clifford's Inn, situated between Fetter and Chancery lanes, for the Public Record Office; and to take property lying between Montagu House, Whitehall, Horse Guards-avenue, Victoria-embankment, and the Banqueting House (where are now the Board of Trade Offices). The Corporation of the City of London will introduce a Bill for the construction of subways for foot-passengers beneath, and at the junction of, Cannon, Bread, and Queen

streets, with a subway junction to Queen Victoria-street and Bow-lane, and from Bow-lane to Mansion House Railway-Station. They also propose to seek relief from obligation to maintain and carry out their London riverside fish market at Shadwell with powers to dispose of the site (being the proposed site of a King Edward VII. Memorial and Park), to obtain certain enabling powers relating to the purchase of Spitalfields Market by Stepney Borough Council, and to establish a superannuation and pension fund for the officers and servants of the Corporation. The London Electric Railway Company's Bill relates to the making of a railway from Maida-vale, Paddington, to Willesden; a stairway from Argyll-street to Oxford-street; and subways, in Southwark, at London-street and Newington-causeway, and St. George's and London roads, to communicate with their Elephant and Castle Station tunnel and the Southwark Council tunnel.

Calton Hill, Edinburgh.

A paper on "The Calton Hill: Past, Present, and Future," with special reference to the intended completion of the Scottish National Monument, was read by Mr. Henry F. Kerr, A.R.I.B.A., at a meeting held on the 1st inst. in the hall of Moubray House, High-street, Edinburgh. Mr. Kerr said that with its fine distance outline and its natural facilities for magnificent views the Calton Hill would, if situated in any wide-awake continental capital, be made a chief sight of the city. In the early XIXth century it seemed to be the intention to make the Hill an open-air Valhalla, to keep the memories of the great ever present. Having sketched recent proposals with reference to the improvement of the Hill, he showed how it could be made a favourite resort. Edinburgh had often been compared to Athens, and there were many resemblances, notably in the two hills, the Acropolis and the Calton Hill, immediately overlooking the cities. It was this resemblance, doubtless, that decided the promoters of the National Monument to make the Calton Hill the site of the reproduced Parthenon. The approach to the Calton Hill from Princes-street and almost all the buildings upon it were all of good classic design, and when on the Hill one felt in a classic atmosphere. Of the National Monument only twelve of the forty-six columns of the reproduced Parthenon had been completed, and it was now the ambition of many to see the complete building there as a memorial to the good and great of all lands. Fortunately for the exterior, we had every detail necessary for accurate reproduction, in which all the delicate refinements of the beautiful building would be included. With faithful study and the interested and skilful help of selected workmen, the great task could be brought to a successful issue, and the Calton Hill, which had overlooked the city during its centuries of progress, would at last be nobly crowned.

Lower Thames Valley District Surveyors' Association.

The ordinary monthly meeting of this body was held at Twickenham Town Hall on Saturday last, the President, Mr. Edward Willis, Assoc. M.Inst. C.E., F.S.I., Engineer and Surveyor, Chiswick, occupying the chair at a well-attended meeting. The adjourned discussion on Mr. J. A. Webb's (Surveyor to the Hendon Rural District Council) paper, entitled "Notes on Drainage and Sewage Disposal in Small Towns and Villages," was resumed, much interest being taken in the discussion, many of the members taking part therein.—Owing to the amount of business which is dealt with by the Association, it has been found necessary to pass the following resolution:—"That all members desiring information shall be entitled to ask any questions referring to municipal engineering, surveying, and administration, but a copy of such questions shall be presented to the President or Secretary not later than half an hour after the commencement of an ordinary meeting."—The discussion on notes on "The Latest Sewer and Drain Definition Approved by Parliament," by the President, was postponed until the next meeting owing to the pressure of time.

BOOKS.

Structural Engineering. By JOSEPH HUSBAND, A.M.Inst.C.E., M.Soc.C.E. (France), and WILLIAM HARRY. (London: Longmans, Green, & Co. 1911. Pp. 396, with 357 diagrams. 7s. 6d. net.)

THIS treatise fully deserves a high place among text-books dealing with the important subject denoted by its title. The authors have endeavoured to deal with the design of frequently occurring structures from the theoretical and practical points of view. Not content with a mere statement of the main outlines of the theories involved, they have extended the application of such theories to the practical design of numerous structures and structural details of everyday occurrence.

The volume appropriately opens with a short summary of the properties of structural materials and the weights of details, but it should be understood that the extended knowledge on these subjects which is necessary to the structural designer must be obtained from treatises specially devoted to materials of construction. The succeeding chapters on "Loads and Working Stresses" and "Bending Moment and Shearing Force" are good examples of lucid treatment, and the next two chapters on "Beams" and "Columns and Struts" are equally worthy of commendation. Beyond all these introductory chapters we come to the more practical part of the work, relating to the design of built-up girders, roofs, some details of buildings, and masonry structures of various kinds.

As a general rule numerical data and arithmetical methods have been adopted, in preference to analytical methods, and mathematical formulae have been avoided wherever possible. The discussion of column strength is somewhat more extended than is customary, a feature deserving notice being the incorporation of material from the exhaustive investigation by Mr. J. M. Moncrieff, M.Inst.C.E. A brief section on tall building construction will be found of particular value to architectural students.

The book is one we have great pleasure in recommending to all students of structural design, and we feel sure that it will be widely appreciated by young architects and engineers alike, although naturally somewhat more suited to the needs of the latter.

The Historical Growth of the English Parish Church. By A. H. THOMPSON. (Cambridge University Press. 1s.)

THIS book should be read in conjunction with that on the ground plan of the parish church by the same author. The illustrations are good, especially those of the Cirencester porch, of the font cover at Well, Wiltshire, of the roof-screen at Banwell, Somerset, and of the Easter sepulchre at Howton, Notts. The porch at Cirencester, Perpendicular in style, has two stories above the ground floor, and was used by the guilds.

The chapter on the furniture of a mediæval church is very interesting. It includes mural paintings, stained glass, carved and painted woodwork, etc.

The author's views, undoubtedly correct, with regard to the altar, should be carefully read. The arrangement of the English altar was very different from that now prevalent on the Continent.

The cross and flower vases now so usual among us were seldom to be seen. The cross was not necessary, since, as a rule, a crucifix formed the centre of the design behind the altar, flowers and sweet-smelling herbs were strewn in front at certain seasons, and two lighted candles were placed on the altar at mass.

During the last few years much more study has been devoted to ecclesiology, and in several churches the old system has been adopted.

We think the author should either have omitted post-Reformation work entirely, or, to it. The work of Wren or Grinling Gibbons deserves more than a passing word.

Considering how fully the ground plan was dealt with in the last volume, four more places in this seem unnecessary. The great difference between mediæval and modern work is well emphasised. The mediæval was

the work of the whole activity of the age; the modern is the result of individual thought.

The closing words on "restorations," though axioms to the profession, will be of great importance in impressing on "the man in the street" the proper value of these works of "the men of old." It is for him that this type of book is meant. In drawing attention to the fact that even the often-despised XVIIIth-century work usually has much that is beautiful good service is done.

The Bibliography at the end of the book is good, and the work throughout is sound, interesting, and useful.

BOOK RECEIVED.

SHOULD WE STOP TEACHING ART? By C. R. ASHTEE. (London: B. T. Batsford. 3s. 6d. net.)

CORRESPONDENCE.

An Apology.

SIR,—I am instructed by the Board of Directors of Bell's United Asbestos Company, Ltd., to express to you their regret that a circular containing the text of a letter addressed to your paper by the Chairman of the company on June 5 last, with reference to the article on the subject of "Asbestos Cement Building Materials," which appeared in your issue of May 26, 1911, together with a copy of the article in question, should have been issued with a reproduction of the heading of your paper without your assent having been first obtained thereto.

The company have destroyed the block of the title and design of the *Builder*, and also all copies of the circular in hand, and undertake that no further issue of the circular shall take place. I may add that I was absent in America when the circular was issued, and consequently it was not brought to my notice, as otherwise would have been the case.

It only remains for me again to express my company's regret that the circular was issued in a form to which you have felt it necessary to take exception.

C. S. BELL,
Joint Managing Director of Bell's United Asbestos Company, Ltd.

Licentiate R.I.B.A.

SIR,—Would it not appear that the time is now ripe for the Associate members of the R.I.B.A. unanimously to protest against the continual neglect of their interests by the Council of that body? Few members of that Institute object to the creation of Licentiates as the only means to obtain Registration; but there would certainly appear to be no reason why members of that class, having been elected, should be able to proceed to the Fellowship without having to pass the same tests as those Associates have undergone.

By the new examination, which will shortly be in vogue, Licentiates will be able to secure this advantage without any of the expense and study which practically all Associates have undergone.

The President, it will be remembered, in his opening address regretted that more Associates did not "advance" to the Fellowship. They would surely be well advised to do nothing of the sort.

The formation of a Guild of Associates to ensure fair play, which they cannot obtain at present by their inadequate representation on the Council, would seem to be highly desirable.

ASSOCIATE R.I.B.A.

SIR,—"Enquirer" and "Second Enquirer" are quite correct in their assumption that the necessary age qualification will appeal very strongly to a considerable number of the younger architects, who have in every other respect all the necessary qualifications.

This is particularly hard in the case of the managing assistant of, say, twenty-six years of age (who, by the way, is perhaps responsible for the bulk of the work turned out by his office), and who might reasonably expect to commence practice on his own account within the next year or two.

Naturally, the examination question immediately presents itself. The answer is this: As it is the practice nowadays (I speak from

practical experience), owing to the fluctuation of work, to understaff rather than overstaffing the drawing office, the slightest rush of work, or, say, a competition, is immediately met by this assistant, who, I suppose, quite reasonably, is expected to devote a considerable portion of his own time to the interests of this office. In fact, some principals make a condition of engagement. I know of cases where assistants give up something like 75 per cent. of their own time to office work.

Now, then, sir, could such an assistant reasonably find the time to prepare for the titute exams? I am told that it has been done by such men and found impossible.

And yet an assistant so placed cannot enter the Licentiate class. Will he be registered on the event of the Bill being passed?

Will he take the liberty of suggesting to his employers that he "that, instead of an age qualification, there should be an experience qualification, with ten years as the minimum?"

THIRD ENQUIRER.

Architectural Assistants at the Office of Works.

SIR.—The sympathetic reply given by Mr. Alley Ward to Mr. Philip Snowden, and printed in your last issue, is very encouraging to those who have been waiting many years for some improvement in position. But the First Commissioner had not been correctly informed when he replied that he was "not at all sure there was any general desire on the part of those gentlemen who might be considered eligible to be placed on the established list with the consequent sacrifice of income which would be demanded by the regulation." As to the desire for establishment, a memorial was presented fifteen years back! The Principal Architect then recommended all managing men should be established. His recommendation had been adopted, and it is certainly the best judge of men's wishes, those men would now be receiving at double their present salaries. But nothing was done. Many applications and recommendations have been made since, but were merely merit was concerned it was "nothing done."

As to the suggested sacrifice of income, there are middle-aged men, doing good work, who have been over twenty years in the office, receiving some 200*l.* a year. This is the meagre salary of a "permanent" man, who may be only twenty-three years of age. They rise so rapidly that many who have been only a few years in the service are living 350*l.*, and some who have only been years 500*l.* a year. There is no question of ability, simply they are "permanent." Consistency and justice would therefore ask a considerable advance, not a reduction, in salary. If the matter had been taken in when first recommended by the Principal Architect, there might have been some on then for reducing salaries.

EFFICIENCY.

SIR.—Your correspondent "X." in last week's issue, is somewhat behind the times in he is wondering whether the First Commissioner of Works is aware of the conditions under which the "Architectural Assistants" are working. On the 24th ult. he gave the reply to Mr. Philip Snowden in the House of Commons that he not only knew of the unsatisfactory condition and want of status of the professional men, but that "he would consider their claims to be put on the established list."

The First Commissioner, of course, is not to blame, for he relies upon the representation of his subordinates, that are made to him by those in authority under him, and his inactivity to do justice in the part of "X." in speaking of ten years' service, overlooks the fact that the class of "Architectural Assistants" (formerly "draughtsmen") have only been in existence since February, 1907, when they started under a new title and rule that the age limit for the Civil Service Examination, then twenty-five, be altered back to thirty, and that only those were to be retained of the class of thirty and over whose services were regarded as being deserving of a Technical Certificate of Efficiency to be signed by their immediate chief.

Now at this time there were some twenty-two thus certified and retained, out of which

number some ten were aged from thirty to thirty-five, who, but for the setting back of the age limit, hoped to sit for the Examination, and thus they were deprived of a privilege they previously enjoyed, and the prospects of all the above were over.

But the danger of preferential treatment again "looms large" by the reply of the First Commissioner above referred to, who spoke of "those gentlemen who might be considered eligible," and this must be opposed "tooth and nail," if only on account of the friction bound to ensue between those similarly certified and placed on, or not placed on, the establishment. Now, if it be impossible to deal similarly with the entire class, which includes those who have since attained the age of thirty, and are certified, at the very least it must be all the above-mentioned portion of the class—or none. FAIR PLAY.

Microscopical Examination of Building Material.

SIR.—Your correspondent Mr. F. J. Barnes has evidently been unfortunate in his laboratory experimental work, which is now generally admitted as being a most valuable aid to the practical man acquainted with all the facts of the case. When theory apparently does not "square with practice" it is usually due to incomplete knowledge of facts, or to the ignoring or suppressing of some of them. It is needless to contradict his statement that Portland stone has been found to withstand the atmosphere of Glasgow better than other building material, as it is generally known that Portland stone was used for the first time in Glasgow on an important scale only two years ago, and, although it was fluted, it is already showing signs of decay. Then his idea of "seasoning" stone seems to correspond rather to the use of the term as applied to wood, an operation totally different from the seasoning of stone, which is generally taken to be what he calls "case-hardening." The classical example of the seasoning of the stone of St. Paul's for three years after dressing need hardly be quoted, and the operation of dressing after seasoning should rather be called "unseasoning," since it removes the surface skin constituting the main asset of the Portland stone when seasoned. The somewhat ambiguous case quoted as being somewhat anomalous would doubtless have been readily explained by an examination of the two types of Portland stone microscopically, which has evidently not been done. Like most other things, there are several varieties of Portland stone, and there are perhaps even greater varieties in the hygroscopic conditions of the atmosphere, as well as in the weather experienced at the three places named.

Without examining specimens of the two stones, both normal and after exposure to the action of the atmosphere in the different towns, it is rather difficult to say exactly why the difference occurs. However, it is quite credible that the hard, dense variety of roche stone, which is least affected by acid, may quite well be attacked severely by the large amount of acid in the air, favoured by the atmospheric conditions of Birmingham; whereas, such a stone would resist the sooty atmosphere of London to a greater extent, and be almost immune from the physical erosion of the wind and rain at Portsmouth. On the other hand, the soft, open-grained and therefore porous variety now commonly worked would be readily broken down by the salt-laden breezes of Portsmouth without being chemically acted upon to a disastrous degree. This same material could conceivably get such a coating of soot in London as to protect it, at least partially, against the only moderately acid atmosphere of the metropolis; and the greater quantity of acid got from the Birmingham air might be more largely removed from the open pores by moisture before serious damage was effected. However, this last condition is highly problematical, and decay would certainly supervene after a time. As a rule, anyone now concurring in the "hang theory" idea condemns himself, and confesses to partial ignorance. J. S. GLEN-PRIMROSE.

Port of London Offices Competition.

SIR.—Adverting to the letter you were kind enough to publish last week, may I also, with your permission, ask all competitors to join in a request that the perspective view

be postponed to the final competition, and that the three elevations and two sections be reduced to one each?

This should be done by or before the 16th inst. L.

A Correction.

SIR.—As has been said, "We live to learn," but the letter of one of your correspondents tells us, I think for the first time, that the statue of Achilles is a memorial of the Crimean War. I fancy some of us recollect it standing where it is some years before that event. E. SWINER HARRIS, F.R.I.B.A.

The Inventor of Portland Cement.

SIR, I see in the newspapers that Mr. I. C. Johnson, the manufacturer of Portland cement, is dead. He is spoken of in more than one paper as the inventor.

I have always understood that Joseph Aspdin, a brickmaker, of Leeds, was the first to manufacture Portland cement. This was, I believe, in 1815. C. F. M.

[*] It certainly is not established that the late Mr. I. C. Johnson was the inventor of Portland cement.—Ed.]

Cost of Joinery.

SIR, I am surprised that "F. M.'s" complaint ever found its way into your columns, and I am still more astonished that J. F. Parker should show such infantile innocence as to the anonymous letters received daily by employers of labour on kindred subjects to "F. M.'s."

I have been a foreman or manager for fifteen years of a cabinet joinery works, employing 300 to 400 men, and have my first tip yet to get. Under modern conditions, a foreman who conducted his establishment as "F. M." says would not last over the first quarter. I should like to ask "F. M." how he got to know that the foreman faked the time-sheets, as in a modern establishment the time is taken each night and written up by clerks, not under the foreman's supervision. I have had to get rid many times of the "expert and experienced" men that "F. M." speaks of—men whose experience unfits them for modern conditions of work. In a word, a foreman must surround himself with the men who are most ductile and who will follow his lead. LIVERPOOL.

SIR.—I should think the experience of "F. M." has been very exceptional. Very few foremen out of the large number of that body composite are corrupt; there is, of course, the exception. It has occurred to me, however, more than once that the autocratic powers invested in foremen, by which they are allowed to take on or discharge men, might be curtailed with advantage. A foreman is but human; he has his failings—quite perceptible ones sometimes. He might think to himself, of any particular man, "I don't like that man; I'll sack him," and do so, and the man could not appeal against his treatment, there being no one to appeal to. Or again, when one of his acquaintances apply for a job he might think, "This man belongs to my branch; I must give him a job." In either case where does the employer's interest come in? W. I.

INTERCOMMUNICATION COLUMN.

Hot Water and Galvanised-Iron Cisterns.

SIR.—The experience of your correspondent, "J. A. C.," is interesting in more ways than one. Presumably it is a closed cylinder which he refers to, not a cistern, as he states. There should be no hot water in the cistern. One would like to know the metal used for the circulating pipes. As your correspondent does not refer to any difficulties with them, they must be something different from galvanised iron. There are apparently two forms by which he can permanently cure the complaint—either by replacing the galvanised-iron cylinder by a copper one, or by obtaining a plant which will automatically either eliminate or neutralise the destroying influence in the water. S. WHITMORE ROBINSON.

EDITORIAL SUMMARY.

The leading article this week is devoted to an illustrated account of the town of Amalfi.

In "Notes" (p. 664) will be found some observations on: "Southwark Bridge"; "London Institution, Finsbury-circus"; "The New Examiner of Plays, and After"; "An Artist and an Architect"; "The Mansion House"; "The King Edward Memorial, Liverpool"; "The King Edward Memorial."

To the Marylebone Municipal Buildings Competition we devote another article, accompanied by some additional plans and details (p. 665). All the illustration plates this week are given up to the designs.

Short notices of meetings of the following architectural societies will be found on p. 669: "Leeds and Yorkshire Architectural Society"; "Nottingham Architectural Society"; "Royal Institute of the Architects of Ireland."

Book Reviews (p. 672) include: "Structural Engineering"; and "The Historical Growth of the English Parish Church."

In Correspondence Column (p. 672) will be found letters on: "An Apology"; "Microscopical Examination of Building Material"; "Port of London Offices Competition"; "A Correction"; "The Inventor of Portland Cement"; "Cost of Joinery"; "Licentiate R.I.B.A."; "Architectural Assistants at the Office of Works."

Our Monthly Illustrated Review of Construction (p. 675) contains: "The Regent-street Polytechnic"; "The Design of Tall Chimneys"; "Colouring of Paper."

The Building Trade Section (p. 680) includes: "Continuity of Employment in the Building Trade"; "Cement"; "Prime-Cost Contracts"; "Projected New Buildings in the Provinces"; "Applications under the Building Acts, 1894-1909," etc.

A report on the condition of the Mansion House appears on p. 682.

Legal Column (p. 684) includes comments on: "Repairing Covenants in Leases"; "Fire Precautions: Appeals to Tribunal of Appeal"; "Laying Out a New Street."

In Law Reports (p. 684) will be found the following: "Westminster Nuisance Case"; "Action against Builders and Contractors"; "The Validity of an Architect's Certificate."

MEETINGS.

FRIDAY, DECEMBER 8.

Aberdeen Architectural Association (in the Northern Arts Club).—Mr. G. M. Fraser on "A Historical Tour in Aberdeen." Illustrated by lantern slides. 7.30 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. John Crawford on "The Duties of a Foreman Mason."

Northampton Polytechnic Institute, E.C.—Annual prize distribution. 6.30 p.m.

SATURDAY, DECEMBER 9.

Incorporated British Institute of Certified Carpenters (Carpenters' Hall, London-wall, E.C.).—Annual general meeting. 5.30 p.m.

MONDAY, DECEMBER 11.

The Architectural Association (combined meeting with Camera, Sketch, and Debate Club).—Mr. Alan E. Muehl, M.A., on "Is the Texture of Materials a Fetish?" 7.30 p.m.

University of London (Victoria and Albert Museum).—Mr. Banister Fletcher on "The Louvre and the Tuileries, Paris." 5 p.m.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. F. G. Dowson (Messrs. Roberts, Adlard, & Co.) on "Roofing, Slates, Tiles, etc. Origin, Quarrying, Productions, and Practical Uses." 8 p.m.

Royal Society of Arts (Cantor Lectures).—Professor Vivian B. Lewes on "The Carbonisation of Coal"—III. 8 p.m.

Surveyors' Institution.—Mr. W. A. Haviland on "The Burden of Upkeep on Rural Estates and its Relief under Section 89 of the Finance Act, 1910." 5 p.m.

TUESDAY, DECEMBER 12.

The Institution of Civil Engineers (Ordinary Meeting).—Paper by Mr. T. Ernest Stanton, D.Sc., M.Inst.C.E., and Mr. J. Robert Pannell.

University of London (British Museum).—Mr. Banister Fletcher on "Origin and Evolution of the Corinthian Order." Lantern illustrations. 4.30 p.m.

Nottingham Architectural Society.—Mr. W. H. Taylor, F.S.I., Lic.E.L.B.A., Barrister-at-Law, on "The Law Relating to Building Schemes." 8 p.m.

WEDNESDAY, DECEMBER 13.

Junior Institution of Engineers (at the Institution of Electrical Engineers, Victoria-bankment).—Lecture on "Steel Specifications considered Commercially." by Major H. B. Strange, R.A., ret., of Sheffield. 8 p.m.

Northern Architectural Association.—Paper by Mr. J. Hall. 7.30 p.m.

THURSDAY, DECEMBER 14.

Society of Architects.—Mr. C. A. T. Middleton on "Alexandria: Its Place in Architectural History." 8 p.m.

Concrete Institute.—Mr. G. C. Workman on "Some Recent Works in Reinforced Concrete." 8 p.m.

Sikhia Society of Architects and Surveyors.—Mr. Cass. Fawson on "Manufacture of Paper, and Methods of Printing."

Institution of Electrical Engineers.—Mr. A. E. Seabrook on "Residence Tariffs." 8 p.m.

COMPETITION NEWS.

Manchester Art Gallery.

We understand that Messrs. Crouch, Butler, & Savage, of Birmingham, have been awarded the first place in this competition. It will be remembered that ten competitors in the first competition were invited to complete their designs. We hope to illustrate the various designs fully in our next issue.

Cottages at Middlesbrough.

In the competition for six cottages for the staff of the Cleveland Asylum Mr. T. Edwin Cooper, F.R.I.B.A., the assessor, has made the following award:—

First and third, Mr. James Forbes. of Middlesbrough.
Second, Messrs. J. M. Bottomley & G. T. Wellburn, Middlesbrough.
Twenty-three sets of plans were submitted.

Society of Architects.

The Travelling Studentship of the Society of Architects, open to students under twenty-eight years of age, on the Register of the Society, will be awarded in 1912 to the author of the best design for a town hall, to cost, exclusive of furniture and fittings, not more than 30,000l. Conditions appear in the December issue of the *Journal*, in which are reproduced some of the drawings made by the Travelling Student for this year, Mr. J. R. Leathart.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White, Chairman, presiding.

LOANS.—The Finance Committee recommended and it was agreed that loans should be made to borough councils as follows:—Chelsea, 3,700l. for street improvement; Fulham, 9,280l. for electricity undertaking; Hackney, 817l. towards the extension of an open space, and 4,364l. for electricity undertaking; Holborn, 8,000l. for street lighting; Southwark, 3,630l. for street improvement; and Wandsworth, 4,000l. for street improvement.

ASYLUMS.—Various alterations and additions to the general storeroom at the Hanwell Asylum are to be made, and a covered way has been erected at the Manor Asylum.

SYNAGOGUE.—It is proposed to erect a new synagogue at the rear of Nos. 124 and 126, Green-lanes, Stoke Newington, N.

BOILER-HOUSE.—The erection of an addition to the boiler-house at the Neckinger electricity station, Spa-road, Bermondsey, is to be carried out.

NEW COUNTY HALL.—In answer to a question put by one of the members of the Council, it was stated that the County Hall would probably be ready for occupation in 1916.

ILLUSTRATIONS.

Marylebone Municipal Buildings.

WE illustrate this week a detail of Mr. Cooper's design, which was placed first in the competition, to which we refer at length on pp. 665-669. Our second and third plates show features of some of the other designs.

LIGHTS ON VEHICLES.

THE attention of railway companies, carriers, tradesmen, and other persons concerned is directed by the Commissioner of Police of the Metropolis to the provisions of the Lighthouses Act, 1907 (7 Edw. 7, ch. 45), which provides that:—

"Every person who shall cause or permit a vehicle to be in any street, highway, or road to which the public have access, during the period between one hour after sunset and one hour before sunrise shall provide such vehicle with a lamp or lamps in proper working order and so constructed and capable of being so attached as when lighted to display to the front a white light visible for a reasonable distance. If only one lamp is so provided it shall be placed on the off or right side of the vehicle, and, if the lamp or lamps are so constructed as to permit a light to be seen from the rear, that light shall be red."

He shall also, if the vehicle is used for the purpose of carrying timber or any load projecting more than 6 ft. to the rear, provide the same with a lamp or lamps in proper working order and so constructed and capable of being so attached as when lighted to display to the rear a red light visible for a reasonable distance."

The Act will be strictly enforced by Police, and offenders are liable on summary conviction for each and every such offence to a penalty not exceeding forty shillings, and in the case of a second or subsequent conviction to a penalty not exceeding five pounds."

FIFTY YEARS AGO.

From the *Builder* of December 7, 1861.

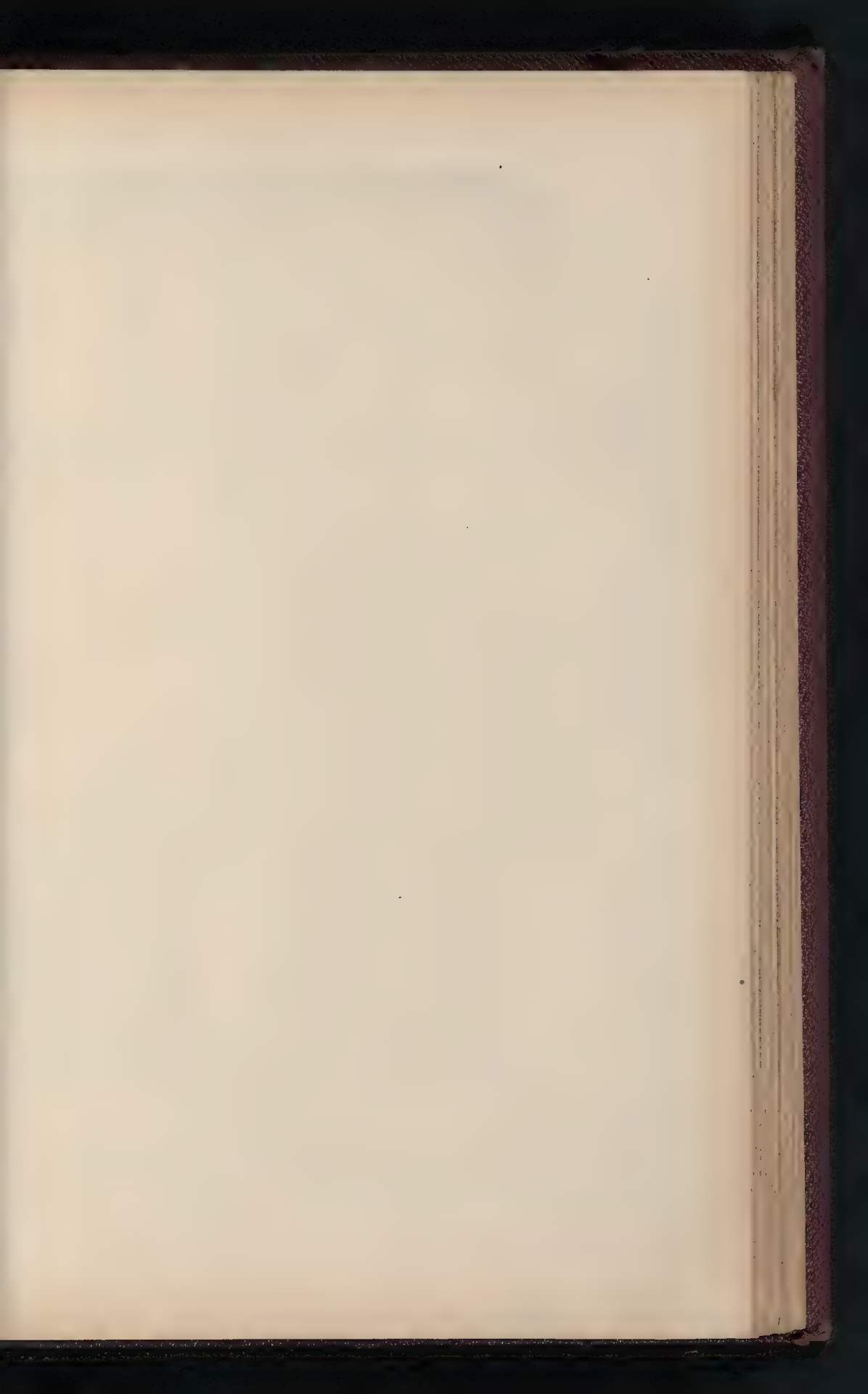
A Relic of Old Suburban London: An Alarm Bell.

IN the future years of the metropolis, notwithstanding the rapid changes, there will remain various matters below the ground, and some above it, which will puzzle many hereafter. Amongst the latter we may mention the circular and other shaped plates which used to be so commonly placed on the fronts of houses by the different insurance companies. On the main coach roads within the metropolitan district the roads, which in some instances are now becoming green-looking, will be turned into paved streets; and it is not improbable that some of the milestones may be allowed to remain; and, in course of time, the brief inscriptions will become indistinct by the beating of the weather, and this may lead to the battle of archaeologists.

Our object at present is, however, only to record some particulars of an object which, fifty or sixty years ago, was commonly used in the suburbs for the purpose of frightening thieves and protecting life and property. This is the "alarm bell," which was fixed in various positions on those houses which stood in pleasant gardens but in lonely situations; where, notwithstanding the protection of blunderbuses and other weapons, persons were not safe. There are indications of these having been fixed on houses which now form portions of the lines of streets; but on examining these dwellings it will be found that they have been disguised in several ways, by facing, by putting in new windows, by concealing the roof, etc., in order to make them harmonise with their neighbours. An experienced eye will, however, detect that these have been isolated buildings, which have been standing at the time when there was no residence within a considerable distance.

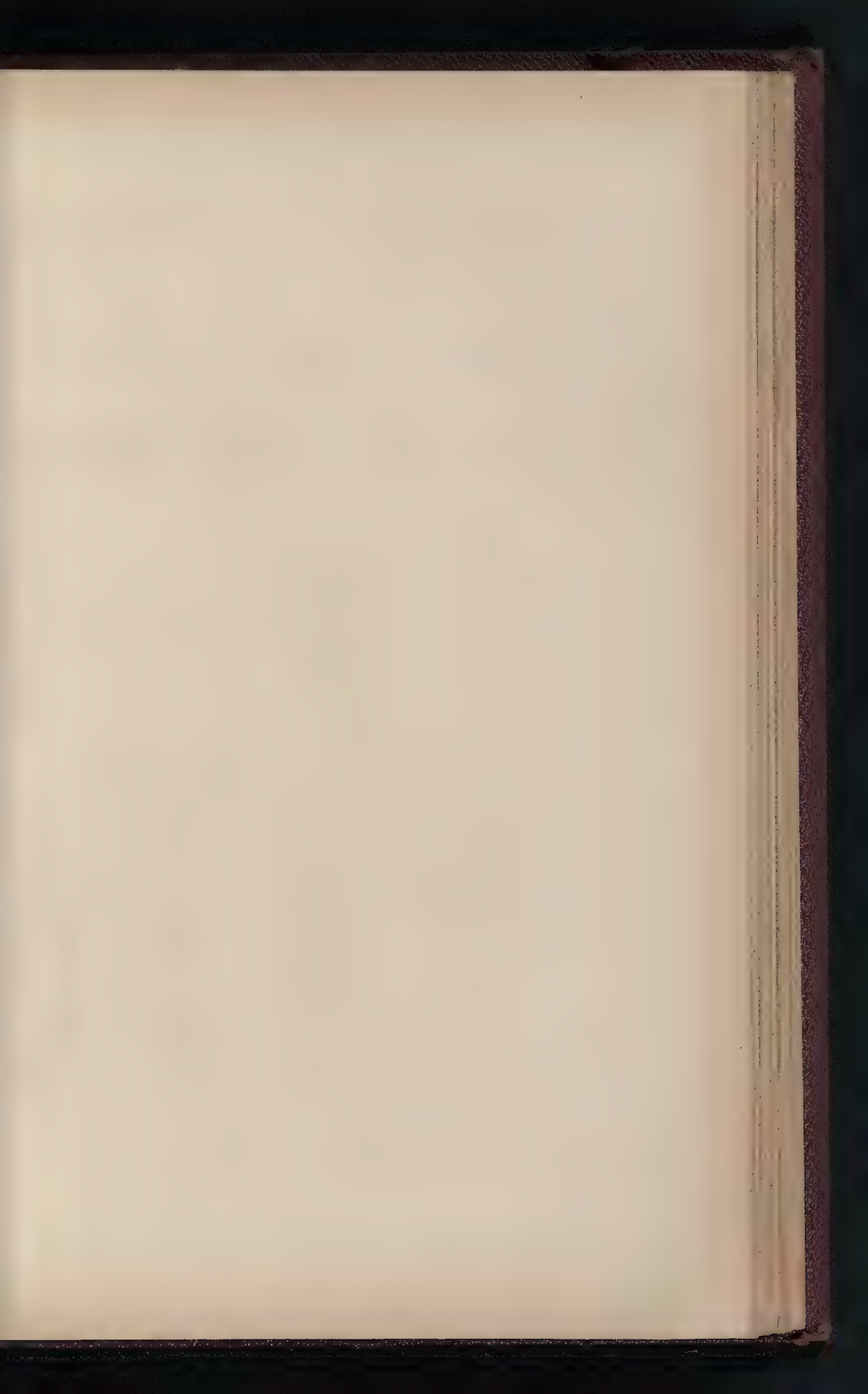
AUSTRALIA AND THE ALDWYCH SITE.

THE Melbourne correspondent of the *Daily Chronicle* cables to that journal that the Federal House of Representatives has adopted the Government's scheme to acquire the freehold of the entire Aldwyth site, at a cost of 364,000l., and to erect thereon a great building, seven stories high, which will include an exhibition hall and the headquarters of the High Commissioner and the six Australian States. The retreat of the London County Council from the onerous conditions which they sought to impose four years ago has been generally approved.



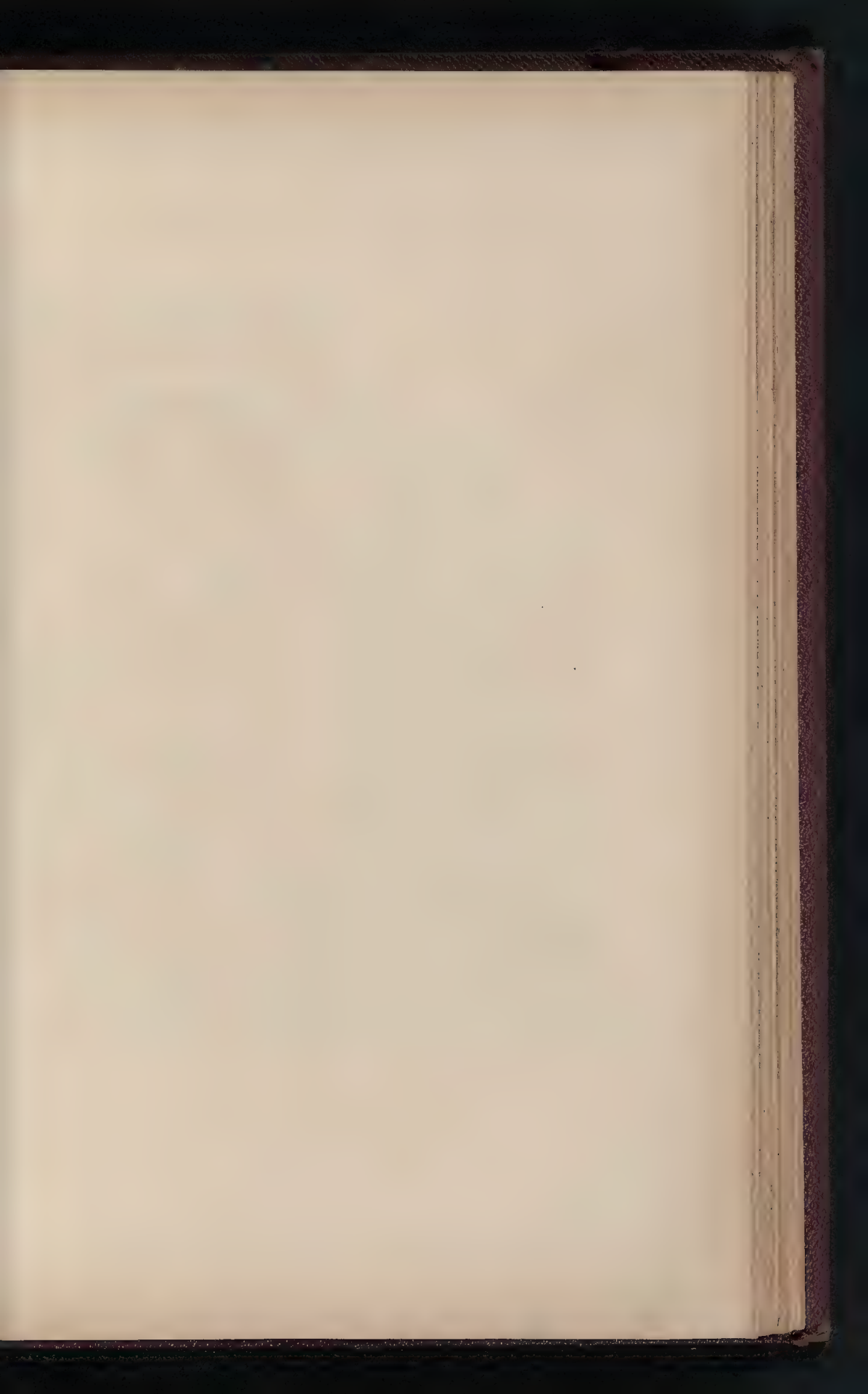


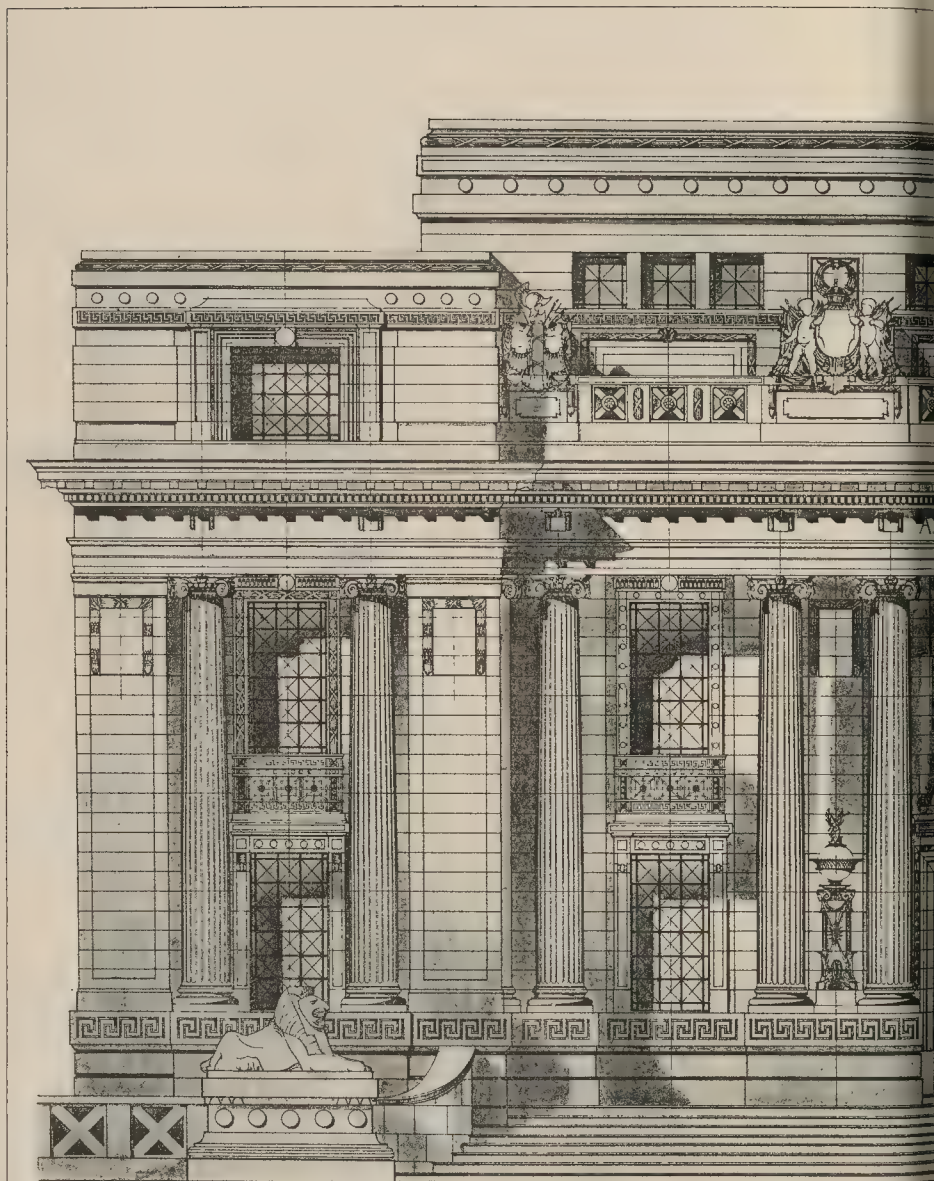
MARYLEBONE MUNICIPAL BUILDINGS COMPETITION: DETAIL OF DESIGN BY MR. W. CURTIS GREEN, FRIBA



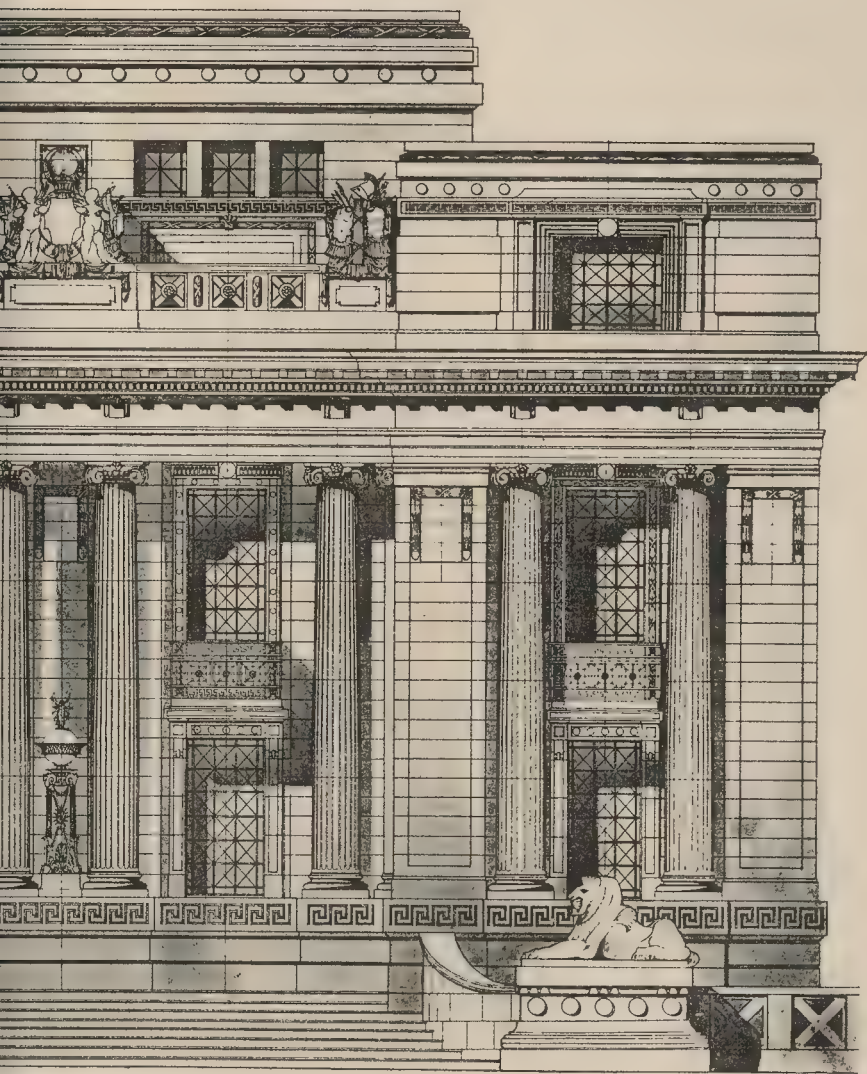


MARYLEBONE MUNICIPAL BUILDINGS COMPETITION: DETAIL OF DESIGN BY MESSRS. LANCHESTER & RICKARDS.





DETAIL M



FRONT

INK PHOTO SPRAGUE & CO. LTD. 4 & 5, EAST HARDING STREET FETTER, LANE F.C.

TAIL OF DESIGN PLACED FIRST.

SA



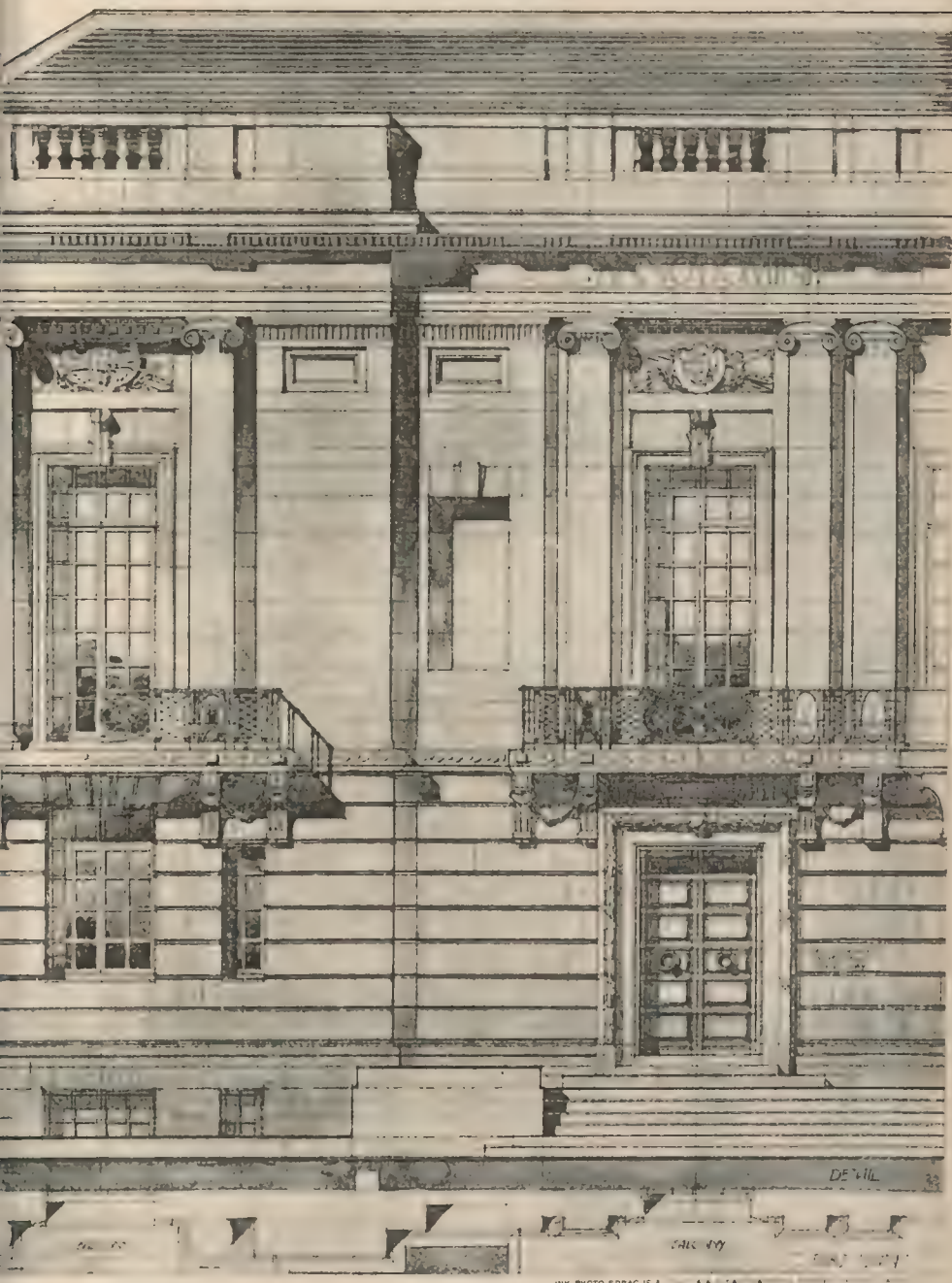
DETAIL OF MAIN FRONT

INK-PHOTO SPRAGUE & CO. LTD. 4 & 5, EAST HARDING STREET, FINSBURY LANE, E.C.

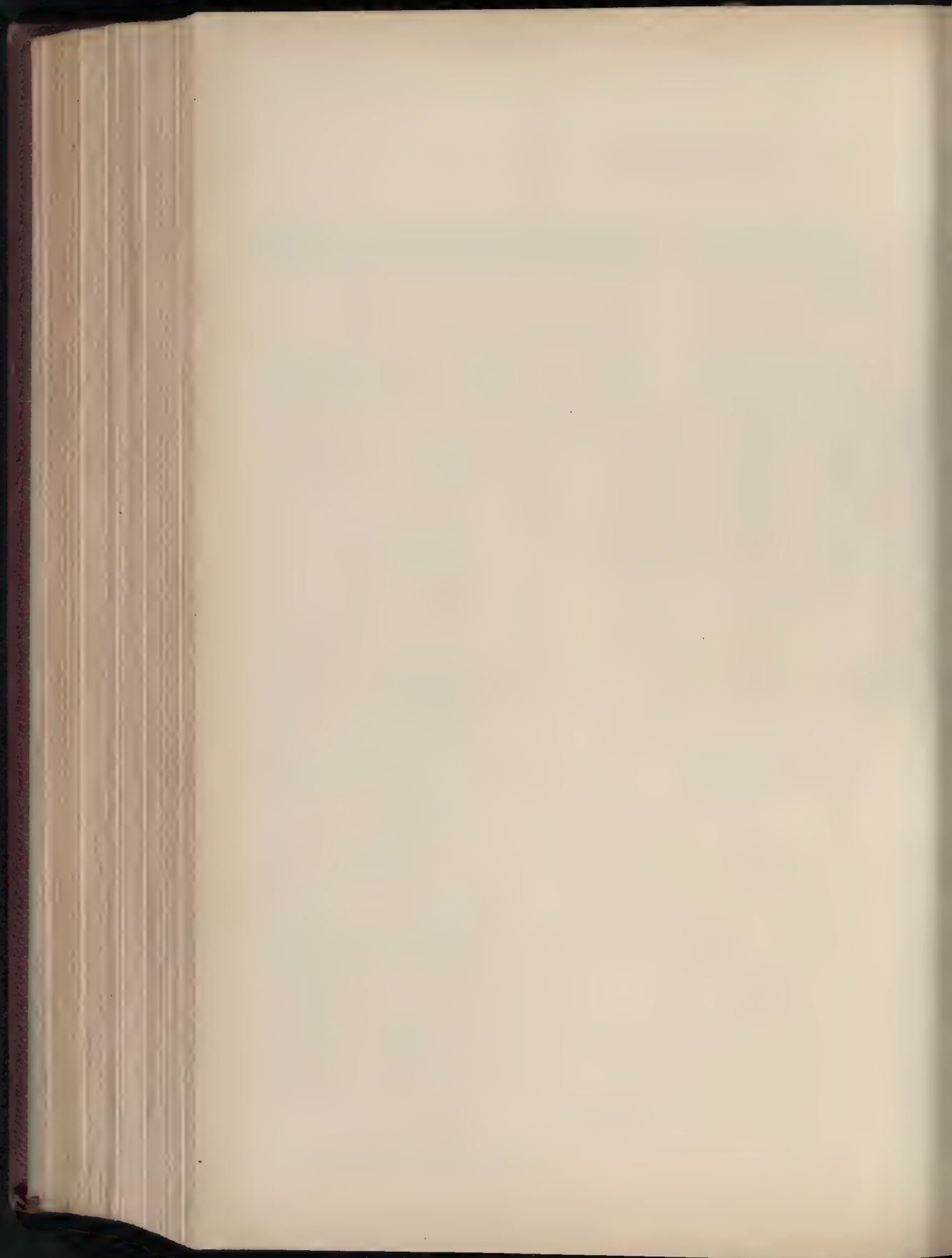
MARYLEBONE MUNICIPAL BUILDINGS COMPETITION: DETAIL OF DESIGN PLACED THIRD.

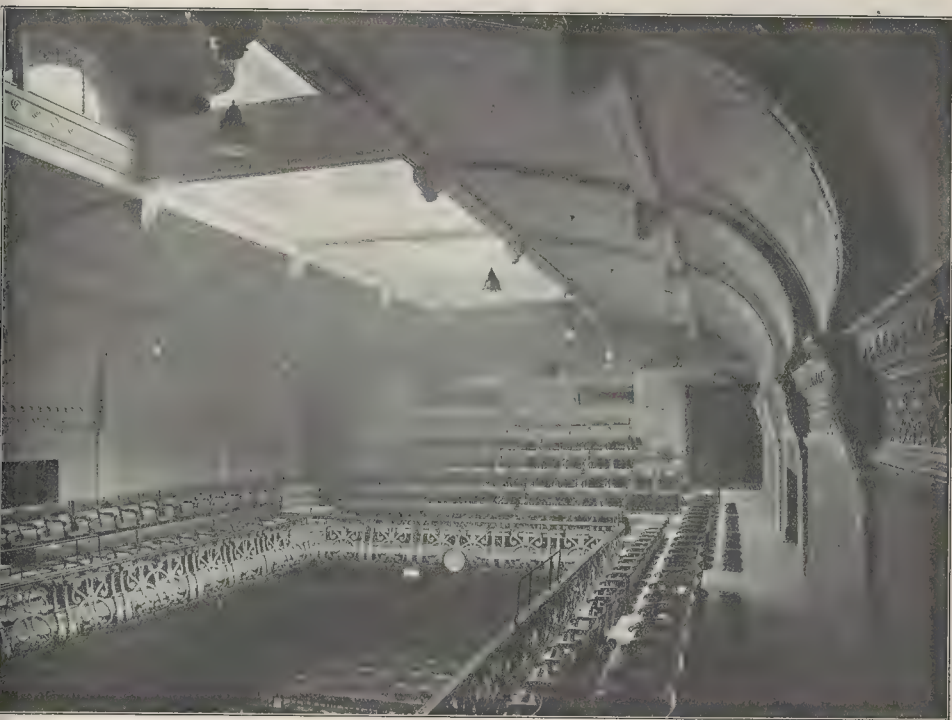
By MESSRS. NORTH & ROBIN.

BOROUGH OF ST. MARYLEBONE.
NEW TOWN HALL.



MARYLEBONE MUNICIPAL BUILDINGS COMPETITION: DETAIL OF DESIGN BY MR. ROBERT ATKINSON, A.R.I.B.A.



MONTHLY REVIEW *of* CONSTRUCTION.

The Marlborough Hall in the Polytechnic.

[Photo. by Ewart Miller.]

THE REGENT-STREET POLYTECHNIC.—II.

[Continued from page 576.]

THE back portion of the building is of the same general character as the old construction, which has been remodelled to a very considerable extent brought thoroughly up to date as far as possible. Various additions have also been made, and the roof over the chemistry laboratory is a fine example of structural work.

Fig. 9 includes a part plan, a part elevation of the saw-tooth roof and parapet, and a cross section of the parapet construction. It will be observed that the top of the Mansard roof is finished with heavy steel girders support of the roof trusses and other construction above.

Each of the three saw-tooth trusses in the five spans measures 21 ft. 9 in. from centre to centre of the girders, along the base of the triangle, the other two sets of trusses measuring 23 ft. 1½ in. and 25 ft. 2½ in. respectively. The width of the saw-tooth roof is 21 ft. 9 in. over all.

Fig. 10 gives full details of the truss construction and requires no explanation.

On the top of the Mansard roof a very panoramic view is obtained of the metropolis from the Crystal Palace on the south to Hampstead and Highgate on the north. The eastern and western is equally extensive, but not so picturesquely delimited by wooded heights. Above the main cornice projects a lofty flag mast of steel, supplied

by Messrs. John I. Thornycroft & Co., Ltd., the well-known engineers and shipbuilders.

Fig. 11 is an elevation showing one of the five important trusses supporting the roof of the chemistry laboratory. Presenting from below the appearance of a circular arch, the construction is in reality a rigid truss exerting no appreciable thrust against the construction on either side. Each truss measures 31 ft. 3 in. over all at the bottom, the semicircular intrados springs from the distance of 1 ft. 6 in. above floor level, and is struck to the radius of 14 ft. 6 in.

The foregoing examples of the steelwork in the Polytechnic building will serve to give an idea of the interesting nature of the construction, which is in every way worthy of the eminent firm by whom it was executed.

Walls, Partitions, and Ornamental Work.

For the interior partition walls the "Mack" fire and sound resisting slabs and blocks have been largely used, having been supplied to the general contractors by the patentees, Messrs. J. A. King & Co., of Queen Victoria-street, E.C.

Brick has been used chiefly in the main walls, faced with stone on the Regent-street façade. The entrance hall is panelled throughout with marble, prepared and supplied by Messrs. J. Whitehead & Sons, Ltd., of Imperial Works, Kennington.

The ornamental plaster work was executed

by Messrs. G. & A. Brown, Architectural Ornamental Works, Hammersmith, and the stained glasswork by Messrs. Campbell & Christmas, of St. Oswald's Studios, W.

Ferro-Concrete Construction.

The ferro-concrete work in the remodelled building consists of floor panels, stairways, and a retaining wall forming the Regent-street front of the basement and sub-basement stories. All this work was designed in accordance with the Hennebique system, the working drawings having been prepared for the architect by Messrs. L. G. Mouchel & Partners, of Westminster, and it was carried out by Messrs. Holloway Bros. (London), Ltd.

It is scarcely necessary to occupy space by a description of the floors, as the Hennebique type of design is familiar to most of our readers, and the dimensions of the floor panels have already been stated.

Figs. 12 and 13 give typical details of the stair construction.

Fig. 12 contains a plan and part sectional elevation of the main stairway wherein two wells are incorporated for two passenger lifts installed by Messrs. R. Waygood & Co., Ltd., of Falmouth-road, S.E. The landings, as well as the stair slopes and treads, are in ferro-concrete, structural details of which are fully shown in the drawing, as well as the

method of anchorage between steel girders and the ferro-concrete work.

Fig. 13 is reproduced from a working drawing of the stairs from the lecture theatre, an interesting feature of the construction being the cantilever landing 8 ft. wide with the overhang of 4 ft. 6 in.

Fig. 14 illustrates the retaining wall along the front of the basement and sub-basement stories. It is 26 ft. high and consists of a vertical slab, supported by a footing slab and stiffened at intervals by counterforts. The slender dimensions of the wall, as shown

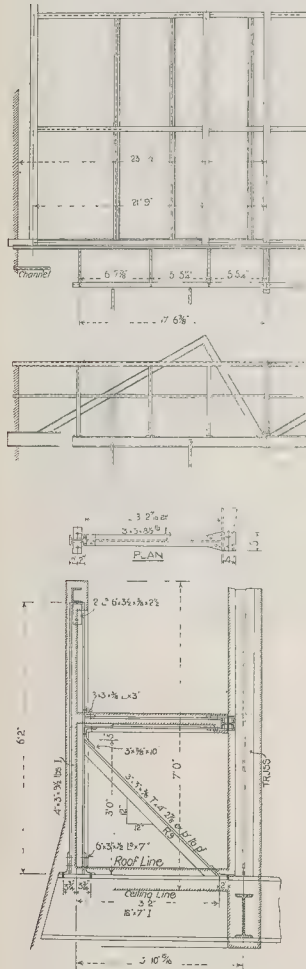
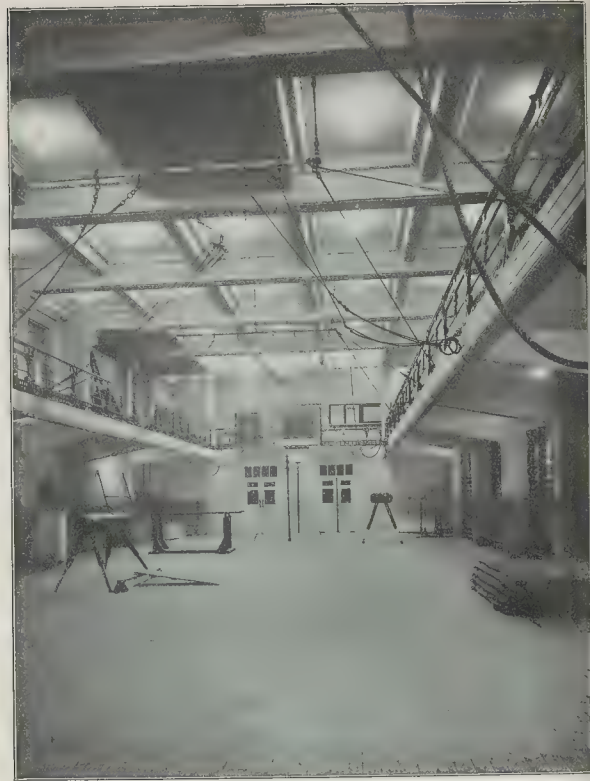


Fig. 9. Saw-Tooth Roof and Parapet.

in the drawing, sufficiently indicate the great saving of space effected by walls of this type, another important consideration being the avoidance of useless dead weight, which in mass concrete retaining walls of the ordinary kind impose unnecessary and objectionable load on the soil.

Electric Lifts.

Each of the Waygood lifts mentioned above extends from the ground floor to the fifth floor, and is capable of raising eight persons at the speed of 150 ft. per minute. The passenger car has hardwood panelling, domed top, and is fitted with mirrors inside, altogether presenting a handsome appearance.



The Gymnasium in the Polytechnic.

The gearing consists of an electric motor directly connected to worm-gearing, working in an oil bath and controlling the winding drum. The latter is grooved to fit the steel wire ropes, so as to obviate undue wear, and the ropes are attached in such manner as to guard against slip.

The cage and balance weight are suspended by four ropes, each of more than sufficient tensile strength to sustain the entire load with an ample factor of safety; but in addition a safety device is fixed to the under side of the cage, the apparatus including grips which engage the vertical runners in the event of undue stretching or failure of the ropes. A commendable feature of this safety

gear is that its action is purely mechanical and does not depend upon the operation of springs.

The lift is controlled by means of a magnetic handle in the car, the handle being fitted so that unless held in the required position it will automatically revert to the central position and cause the lift to stop. Another advantage is that the handle can be detached, thereby enabling the attendant to take it away in case he should have to leave the car for any reason, and so make it impossible for unauthorised persons to start the cage. The controller is provided with up and down limit circuit breakers operated by solenoids and fitted with a magnetic cut-out to minimise

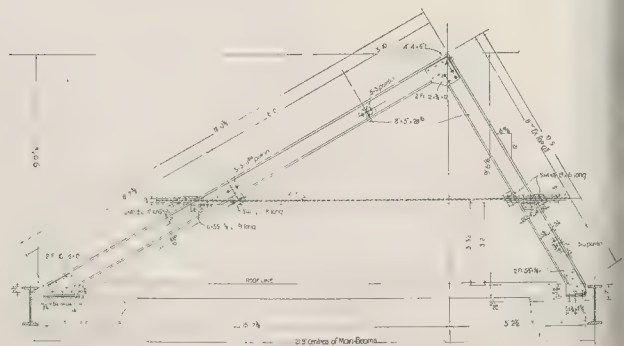


Fig. 10. Details of Saw-Tooth Roof Truss.

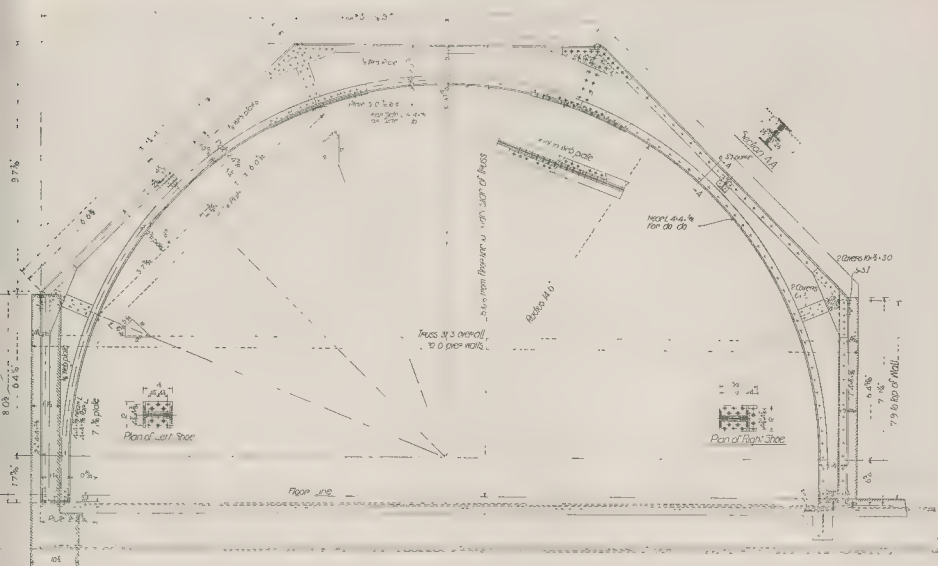


Fig. 11. Arched Truss in Roof over Chemistry Laboratory.

Operations are conducted through a car working so that it is quite automatic in cutting out resistances at a fixed point, independently of the way the handle is moved in the car. The whole apparatus is mounted on a slate panel, and arranged so that all parts are readily accessible.

The gearing and controlling devices are arranged on a bed-plate, bringing all the machinery together, and thereby obviating the necessity for trip switches in the lift shaft and simplifying the wiring.

In addition to the passenger lifts, the building is equipped with a hand-power carriage having a platform 14 ft. long by 10 in. wide, and capable of raising loads of 2 tons. The platform is strongly built, with a steel frame covered with timber. The platform guide runners are of channel fixed to the walls by wrought-iron brackets, and the lift is operated by a double-throw crab fitted with a powerful lever. This lift, providing means of communication between the ground floor, basement and sub-basement, will enable the staff to convey new machinery and testing appliances into the engineering workshops. Its ample size makes it available for the treatment of large motor-cars should one arise.

to damage it. Tall chimneys ought to be designed upon scientific principles, so that there is an absolute guarantee for their stability, and in the following paper the author desires to elucidate these principles.

Height.—In designing a tall chimney it is desirable first to know what height to make it. Forty-five feet is an ordinary height to serve two steam boilers, but in some towns, as Manchester and Leeds, 90 ft. is the minimum

THE DESIGN OF TALL CHIMNEYS.

A MEETING of the Society of Engineers (Incorporated) was held at the Institution of Mechanical Engineers, Victoria-embankment, on Monday, when Mr. Henry Adams, C.E., M.I.Mech.E., F.S.I., read a paper "The Design of Tall Chimneys." In his paper he said:

Architects in the course of their practice frequently to furnish designs for special sections, and, although they sometimes take the sensible course of calling to their aid the services of an expert, they more frequently do not what they think ought to do, and the responsibility upon the contractor. In the present condition of general knowledge the subject of stability of tall chimneys is strikingly shown in connexion with the design of the lift shaft. This was designed to withstand a wind pressure of 160 lb. per square foot. Professor Rankine calculated that it would stand only 70 lb. per square foot, while Mr. J. Hutton, a later writer, estimated wind pressure of only 32 lb. per square foot. The whole height would be sufficient

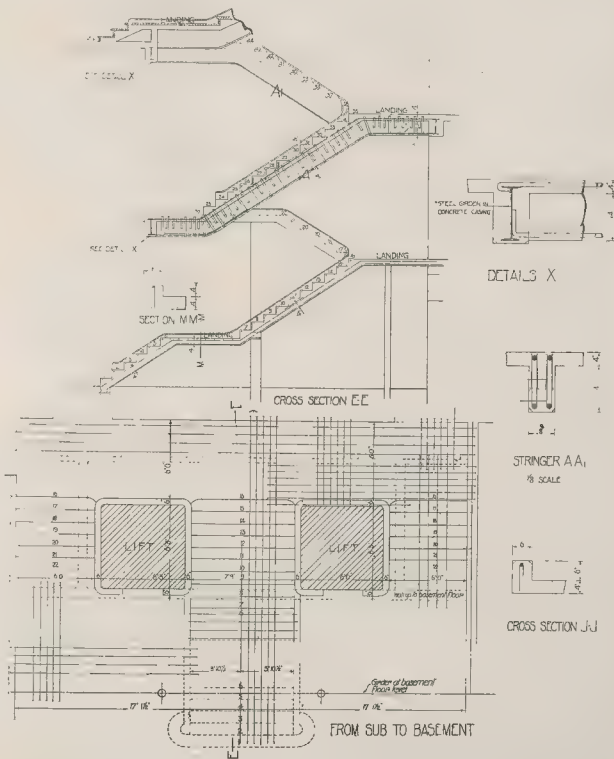


Fig. 12. Main Stairway: Plan showing Passenger Lift Wells.

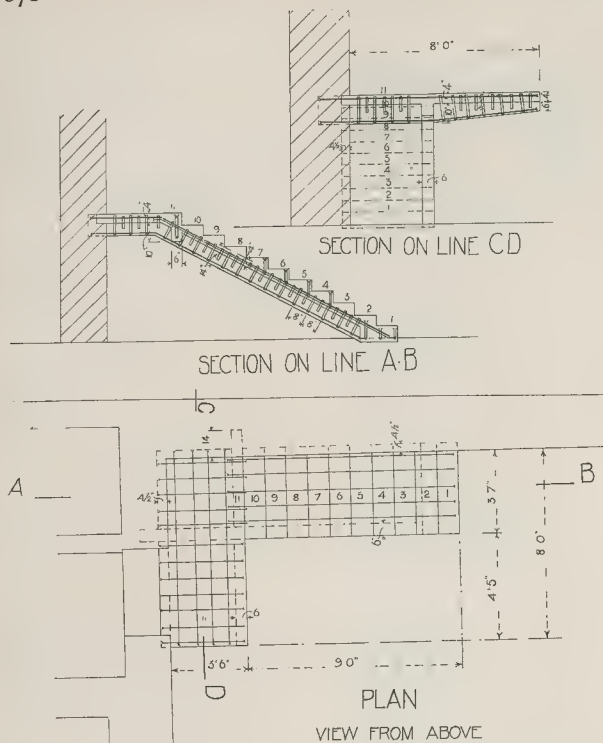


Fig. 13. Stairs from Lecture Theatre in the Polytechnic.

allowed. They are sometimes proportioned for height according to the coal burnt per week of fifty-six hours, thus:—

4 tons per week	=	75 ft. high.
13 " "	=	100 " "
25 " "	=	120 " "
50 " "	=	150 " "
100 " "	=	180 " "
150 " "	=	200 " "

Another rule is to make the height of the chimney three times length of boiler plus twice distance of furthest boiler to chimney. This allows 1 ft. of height for every foot the gases travel round the boiler and 2 ft. of height for every foot of external flue. And, again, a round chimney should not exceed twenty-five times its internal diameter in height. In many modern power-stations Babcock & Wilcox boilers and Green's economisers are used; what is saved in obstruction in the boilers is lost in the economisers, so that no material difference arises, but the chimney-shafts are, as a rule, only from 75 ft. to 100 ft. high and of very large sectional area. For chemical works, or where poisonous fumes are emitted, they should be higher than for ordinary steam boilers, in order to disperse the fumes at such a height that they may be diluted to a harmless condition by the time they reach the ground.

Shape.—The necessary sectional area being obtained, it should next be decided whether the chimney is to be round, octagonal, or square. It is generally acknowledged that circular chimneys have the best appearance, at least above the pedestal, which is usually square, and from which the circular part springs by broadened angles. Octagonal chimneys have the next best effect, some even consider that they are more sightly than round chimneys, while square chimneys always look more or less heavy and are only suitable for short stacks of large area, such as are generally used in modern central station work. The circular chimney is most efficient for its area, as it takes the least material and there are no angles in which soot may cling, but with any chimney it is desirable to add 2 in. all round to the calculated minimum area to allow for friction. Octagonal chimneys require special bricks for the angles in alternate courses, to produce the best work.

Wind Pressure. The comparative efficiency according to the shape of cross-section may also be considered from the point of view of obstruction to the wind, that which offers the greatest obstruction requiring the greatest stability or quantity of material apart from other considerations. It is not yet definitely settled what is the pressure of the wind upon a plane surface due to a given velocity, and less is known of the effect upon a surface inclined to its direction. We shall generally be quite safe, however, if we allow for ordinary purposes a pressure of 56 lb. or $\frac{1}{2}$ cwt. per square foot on a plane surface normal to the direction of the wind, and even half of this may be sufficient in many cases. When we come to fix the value of these figures against an inclined or curved surface we find much difference of opinion and no sufficient experimental evidence.

A formula agreeing closely with Hutton's experiments is:—

$$P = a p (\sin \theta)^{1.84 \cos \theta}$$

where P = total pressure in pounds,
 a = area of surface in square feet,
 p = normal pressure pounds per square foot,
 θ = angle of incidence,

and this is the basis of the majority of tables of effective pressures; but Hutton's experiments on a surface only 22 sq. in. area, which was small to be of much practical value.

Some years ago the author suggested a variable allowance according to the width, height of the structure, which would cover cases and be more in accordance with modern experiments. His empirical formula for this purpose is now:—

$$\log p = 1.125 + 0.33 \log h - 0.12 \log w$$

where p = ultimate wind pressure in pounds per sq. ft. necessary to be allowed for against a plane surface normal to the wind;
 h = height in feet of centre of gravity of surface considered, above ground level;
 w = width in feet of part to be taken as surface;

and when the surface is inclined at θ degrees to the direction of the wind, the ultimate pressure normal to the surface may be taken as $p \sin \theta$, or its effect in the same direction the wind = $p \sin^2 \theta$.

Pressure on Square Chimney.—A square chimney will give the same resistance when

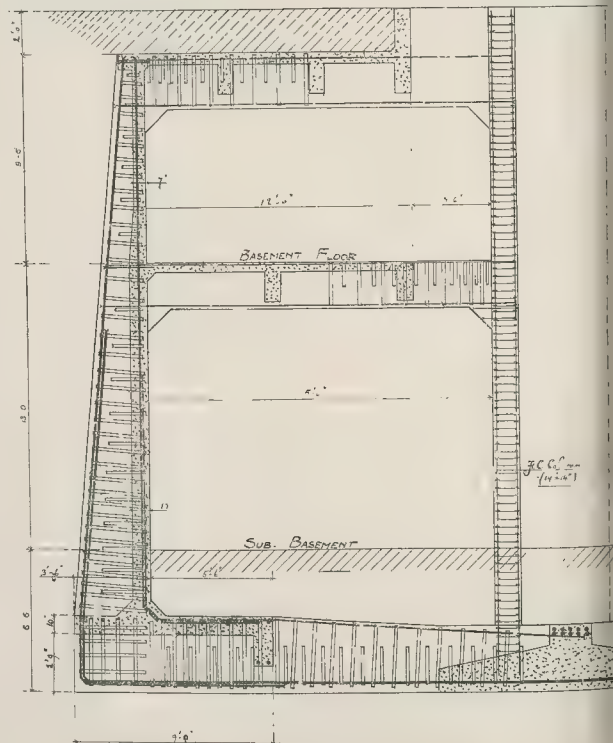


Fig. 14. Section of Retaining Wall in the Polytechnic.

the wind or standing diagonally to its ion, the greater area of the inclined e and the reduced pressure upon it making e total as the flat side under the full ure.

Pressure on Circular Chimney.—With circular eys a very serious difference of opinion as to the effective pressure of the wind, own by the following list of multipliers mended:

skine ..	.5	Professor Hutton ..	.68
Albion ..	.38	Gaudard ..	.48
Lyda ..	.57	Bressi ..	.78
B. Baker ..	.57	Adams ..	.7654

Pressure on Octagonal Chimney.—An octagonal ey has two extreme positions with regard e wind, viz., when it is acting directly t one face and when acting directly t one edge. For the former case the multiplier would be .983 and for the .082; there is not much difference, but tter coefficient gives rather the higher s as it is taken against the width over

Russian Government Rules.—In April, 1902, Russian Government issued regulations for the construction of chimney-stacks. Square e to be designed for a wind pressure of .5, per square foot, with the centre of e at the centre of gravity of diametral al plane. Octagonal stacks, 71 per cent. e above pressure, and circular stacks, 68 per cent. (*Engineering Record*).

Thickness of Brickwork.—Up to 150 ft. high, inside diameter the top length is ally one brick (9 in.) thick; above that r diameter the top length should be ick and a half thick, and the thickness e increased by a 4½-in. set-off at every below the top. The outlet at top androat or internal diameter at each set-off e of the calculated size to give the ary area plus allowance for friction. times one hears it recommended that the e chimney should be contracted, to the expulsion of the gases at a greater y and so to prevent down draught. It d also that as the gases cool in their e up the chimney they require a smaller al area to keep the velocity uniform. In d no attention is paid to either of these s and the section is kept as uniform as her requirements will permit.

er.—If the diameter of the throat is kept m and a 4½-in. set-off occurs at every e, the intermediate portions being of n thickness, a batter of 1 in 53.33 will ven, but the London County Council on a minimum batter of 1 in 48 = 2½ in. t., and besides that it will be requisite in ases to provide a firebrick lining for at the bottom 15 ft. or 20 ft., having a ess of 4½ in. and a clear space above the brickwork of 1½ in. to 2 in., necessitating greater batter.

Chimney-Cap.—The chimney-cap or cornice, London County Council rules, must not e more than the thickness of the brick- on which it rests. It may be of cast- asings bolted together and filled with rk; or of granite or other good weather- one, the separate blocks being cramped r with galvanised-iron cramps, or with a hoop sunk into the top and protected ess; or of brickwork in cement.

Chimney at Base.—There is also an important e the London County Council which says width of a shaft at the base, if square on must be at least one-tenth, and if circular n, at least one-twelfth of the total

Chimney Lining. The firebrick lining must rely self-supporting and have a clear e behind, to allow for expansion and ion independently of the main structure, ould be prevented if dirt and dust were e behind it. It is therefore necessary to the top of the space by an over-sailing e of bricks built out from the inside of ain shaft, protecting the space, but g a clearance above the lining of ½ in. y 5 ft. of its height, to permit of its ion when heated. The average height of lining is 3 height of shaft + 10 ft. A on height is 20 ft. and thickness 4½ in.; of greater height it is necessary to make ver part 9 in. thick. No air bricks e inserted in the outer wall, as is mes done with the idea of cooling the e, any such openings being very al to the draught. The only possible r air to the chimney-shaft should be

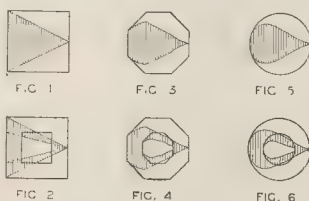
through the fire-bars or over the surface of the incandescent fuel.

The smoke inspectors of the London County Council have lately recommended openings into the chimney-shafts near the bottom to reduce the smoke nuisance. The real effect is to dilute the smoke with air before it reaches the chimney-top so that it is not so black when expelled, but it does not reduce the actual amount of carbon emitted except so far as it tends to spoil the draught and so to reduce the fuel consumption and boiler efficiency.

Stability.—Having drawn out the vertical section to suit the conditions, it will be essential to test the stability by calculation, but this is a somewhat complex matter and requires some preliminary data that will now be dealt with.

Materials and Weight.—The weight of each portion of the shaft, i.e., between each set-off, should be obtained separately so that the figures can be used singly or together. The weight will depend very much upon the material. Many chimney-shafts are built of ordinary stock bricks and ground stone-lime mortar, and may be taken at 112 lb. per cubic foot. Others are built of solid machine-pressed bricks and has lime mortar, and may be taken at 126 lb. per cubic foot. Some builders prefer perforated radial bricks and Portland cement mortar, weighing, say, about 100 lb. per cubic foot. Others consider that cement is too un-yielding and that a shaft has greater ultimate stability if it sways slightly in a gale, which they fear the use of cement mortar might prevent. The bond usually adopted is one course of headers to four courses of stretchers, but sometimes tall chimneys are built in English bond, and occasionally in all headers.

Tall Chimneys
Resistance areas of different sections



Safe Load on Material.—Assuming best workmanship and material, the maximum safe load may be taken as follows, being about 50 per cent. higher than would be allowed for live loads or inferior conditions:—

	Tons per foot super. Compression
Granite ..	25
Portland and compact limestone ..	20
Hard York stock ..	15
Blue brick in cement ..	12
Stock ..	10
" " " " " " " "	8
" " " " " " " "	6
Cement concrete 6 to 1 ..	9
Deep clay (foundations not less than 10 ft. from surface), gravel and compact earth ..	3
Made ground rammed in layers ..	1½
	Tons per foot super. Tension.
Grey lime mortar (1 to 2) ..	1.0
Lime mortar (1 to 2) ..	1.5
Portland cement mortar (1 to 3) ..	2.0

Foundation.—It is important to note that a tall chimney should stand on an independent foundation in order that the settlement, or compression of the soil, may be uniform. When a chimney is built close alongside a boiler-house, or within the four walls of a warehouse, it is sometimes placed on an extension of the other foundations and bonded in with other work, but this invariably leads to unequal settlement and subsequent cracks in the brickwork. It is evident that an ideal site would be on virgin soil of uniform character, preferably firm gravel, and not over old excavations, or a filled-in watercourse, or over old shaft workings, although all these positions have been adopted from carelessness or necessity.

Principles of Stability.—The principles of stability can best be illustrated by taking a solid square brick pier, say, 3 ft. square and 30 ft. high, weighing 1 cwt. per cubic foot. The total weight will be:—

$$3 \times 3 \times 30 \times 1 = 270 \text{ cwt.}$$

$$\text{The area of base } 3 \times 3 = 9 \text{ sq. ft.}$$

$$\frac{270}{9} = 30 \text{ cwt. per square foot.}$$

The resultant of the weight of all the parts passes vertically through the centre of gravity of the mass and cuts the centre of the base. If the wind be assumed to blow horizontally against one side the effect will be collected at the centre of the face and act with a leverage of half the height, and the resultant of the two forces P and W will gradually approach the outer edge of the base as the wind pressure increases.

Application to Chimney-Shafts.—The reason we have considered the stability of the plain brick pier is that we shall be able to deal with complex chimney-shafts the more readily. Nearly all the different forms of bed joint can be reduced to a few simple diagrams. These are collected together in Figs. 1 to 6, the shaded part being the resistance area, or measure of effective resistance, of each. Another form of section may occasionally be found, viz., square with two buttresses on each face, the resistance area of which would be found in a similar manner to the preceding, and the centre of gravity would be found experimentally by cutting out the area in drawing-paper and suspending it from two points. These shaded portions have been described as resistance areas, although they correspond exactly with the inertia areas for a neutral axis coinciding with one edge. The reason is that in calculation account is taken of the actual conditions, viz., a uniformly distributed load, and a bending moment producing compression on one side and tension on the other side of a neutral axis passing through the centre of gravity of the section.

COLOURING OF PAPER.

MR. E. HEUSER, describing recent developments in the decoration of paper, refers to great advances from an artistic standpoint, the aim being to avoid sharply-defined patterns and to effect the tasteful blending of the different colours in harmony with the structure of the paper. It is this structure which governs the diffusion of the colours, and the different varieties of fibrous materials develop different types of patterns. The effects obtained vary with the process of application of the colouring matter; sometimes this is applied in the form of clear solutions of dyestuffs, sometimes in the form of separately dyed fibres of a different nature from the body of the paper—e.g., mechanical or chemical wood pulps, sawdust, ramie, or even pieces of dyed paper stamped out, suspended in water, and allowed to flow on the surface of the wet paper on the wire of the machine. When solutions of dyestuff are used their penetration and diffusion depends on the position on the wire at which they are applied—i.e., on the amount of water present at that particular moment in the body pulp in the course of formation of the web. In the manufacture of "Phidias" or "Marmorella" papers solutions of different dyestuffs are run on the surface, diffusing to a certain extent, but retaining the form of straight stripes. These stripes are made wavy by the to-and-fro motion of strips of felt moved sideways by means of an eccentric. In the "Cirrus Relief" paper the manufacture is based on the fact that the drained surface of a free beaten pulp on the machine wire is naturally irregular, being composed of elevations and hollows. Across this uneven surface are sprayed horizontally solutions of dyestuffs, which is taken up by the sides of the elevations on the surface and misses the hollows, creating a relief effect. When the paper is smoothed out the actual relief vanishes and the paper becomes flat, but the colour relief remains. The surface of the pulp may be made irregular by drops of water, forming "craters," or regular relief patterns may be impressed by a coarse dandy roll on the surface of the paper before spraying on the colour, and when this is applied the pattern of the dandy roll remains on the finished paper in the form of a colour-relief. "Terrazzo paper" is made by first applying a uniform layer of colour by means of a felt roll to the surface of the moist web on the wire, and then spraying water on the coloured surface—the surface layer is thus disturbed and forms pale patches with dark edges. Lastly, the author mentions a method of producing patterns by allowing a differently coloured fibrous pulp to flow on the paper machine wire through a stencilled wire sieve, so that the applied pulp reproduces the patterns of the stencil before the body pulp is applied.

THE BUILDING TRADE.

PRIME-COST CONTRACTS.

A LARGE number of buildings are being erected to-day on what may be called a prime-cost basis, and as the tendency to enter into contracts on these lines appears to be on the increase, a discussion of the system may be useful. The usual agreement is one whereby the contractor accepts the actual prime cost of the building to him with a percentage addition for both establishment charges and profit, the building owner being allowed free access to his books and a clerk of the works being appointed by him to check the time, materials, etc., on the works. The advocates of the system contend that it is perfectly fair to both parties, as the building owner pays for neither more nor less than he receives, and that there is no incentive to scamping. Now it is well known that on a job where there is no lump sum contract there is always a strong tendency to slackness on the part of the workmen which the contractor finds very difficult to check. The scamping in the building trade is very much exaggerated; any respectable contractor has a reputation to keep up, and has a great deal to lose if his work is condemned. What scamping there is generally the work of an over-zealous foreman. All owners like to know, and it is essential that most should know, the cost of the building before they commence work; but under the prime-cost system this first cost is usually arrived at by a rough method of cubing or practically by guesswork, which is extremely likely to lead to disappointment on the completion of the building. The drafting of these contracts requires considerable care if they are to be made fair to both parties, and the following are a few points that may well be considered. There are two opinions as to what establishment charges are—one is that they represent, in addition to rents, etc., only the clerical work in the office, the other that they include in addition to this the time for yard supervision and yard and outside foremen.

Again, what prime cost really is raises several questions—the method of the adjusting of trade and cash discounts must be agreed upon. The question as to whether scaffolding, plant, tools, etc., should be taken by hire, by depreciation, or as an establishment charge is important, as is also the running cost of machinery at the works. Again, how are goods taken out of stock to be charged? For instance, a contractor on a lump sum contract for digging finds sand, which he carts into his yard, and again delivers to his prime-cost job: how is this to be charged? Also, if he buys for stock in bulk at a low price, anticipating a rise, which he realises, is the prime-cost charge to be made at the market value or at the price the contractor bought at? There are many other items which will occur to the reader that must be settled between the contractor and surveyor before a definite and fair prime-cost contract can be agreed upon.

CEMENT.

MR. BERTRAM BLOUNT delivered his second lecture on "Cement" at King's College on Friday, December 1, before the Institute of Chemistry, Professor Raphael Meldola, F.R.S., Vice-President, occupying the chair. Proceeding to the more practical details of his subject, Mr. Blount pointed out that owing to our limited knowledge of the chemistry of cement it is necessary to resort to tests of a physical and mechanical nature in order that the user may be able to satisfy himself that the product he employs will meet the demands laid upon it. From their very nature such tests must be arbitrary, and to ensure uniformity they must be carried out under standard conditions which will satisfy the requirements of the consumer, and not lay too heavy a burden on the producer. Mr. Blount was assisted by Mr. Gillett, who demonstrated the method of mixing the cement to be examined, on which so much of the reliability of the tests depends—a point which was illustrated by the story of a firm who undertook to subject a cement to mechanical tests and reported that a briquette had been made and had been found to contain a large

number of voids. Since cement is not deliberately used under tension it would appear at first sight to be more logical to appraise its mechanical strength by compressive rather than tensile tests; but as all the tests are merely used as a basis for comparison, and the errors inherent in compression tests largely invalidate the results, it has become customary to omit them in favour of tensile tests of either the neat cement or of mixtures of cement and sand of a given degree of fineness. Much prominence has been given to the advantages of testing mixtures of cement and sand, on the ground that such a method approximates more closely to the conditions obtaining in actual practice, whilst on the other hand it can equally be urged that the sand prescribed by any standard specification will differ widely both in size and shape from the aggregate usually employed on a commercial scale. For the user of cement the question of soundness, i.e., the property of remaining constant and unalterable in volume, must always be of paramount importance, and justifies the decision of the British Standards Committee in adhering to the simple Le Chatelier test, which has not infrequently been subjected to severe and rather adverse criticism in some countries. The methods prescribed in the standard specifications of to-day are virtually the same as those laid down some seven years ago, and the quality and uniformity of the modern product have been so well maintained that almost the only alterations have been in the direction of increased stringency, without thereby laying an unreasonable task upon the producer. The information obtained from the ordinary physical and mechanical tests is sufficient for all practical purposes, and probably will not be usefully augmented until some methods are devised for determining the proximate composition of cement and the setting time of concrete. That the former of these has not yet been realised is shown by the fact that, in spite of numerous attempts, no reliable method exists of ascertaining the content of so-called "free lime" in cement.

Turning to the economic side of the subject, it was pointed out that mainly through the introduction of the rotary kiln the cost of production of Portland cement had been so far reduced as to render possible the application of the material to uses in which lime had previously held the field, so that at the present time a limit can hardly be set to its sphere of usefulness. It was shown that whilst theoretically concrete should weigh about 162 lb. per cubic foot, the figures found in practice rarely exceeds 140 lb., or, in other words, about 14 per cent. consists of voids—a fact not to be ignored by engineers. This consideration at once suggests the possibility of increased economy in construction by using every endeavour to make concrete denser and consequently more efficient. Not only may a saving of material be effected thereby, but a further advantage is gained from the fact that the denser product will be less pervious, and better able to resist the action of water. It must be borne in mind that water continually exerts a solvent action on cement, and it is obvious that the life of the concrete depends in a large degree on its power of resisting penetration.

For structures of concrete exposed to the action of water the liberal use of cement is an obvious means of securing imperviousness; but the employment of some substance, e.g., of the pozzolanic class, which will combine with the hydrated lime set free in the process of setting of cement, is perhaps not so common. In the selection of a suitable aggregate not only must its texture be taken into consideration, but also the possibility of any chemical action that it may exert in the concrete; thus *débris* containing sulphates or easily decomposable silicates is unsuitable. So much has been said of the danger of "magnesia in cement" that the amount allowed has been reduced to quite a low figure. Undoubtedly there has been considerable confusion over this point; the presence of magnesium compounds in structures that have failed under sea-water conditions was really due not to the presence of magnesium compounds in the original cement, but to the formation of magnesium hydroxide by the

reaction of the magnesium salts in sea-water with the lime compounds of the cement.

After thus outlining a few of the intricate problems that may be presented to the technical adviser Mr. Blount sketched out a course of training for those who intended to specialise in the subject. After a broad elementary education he insisted on a sound general knowledge of chemistry supplemented, if possible, by some mechanical and engineering training, before attempting to proceed to a post-graduate training in the chemistry of cement. This should be gained in a laboratory within easy reach of some centre of the industry where access to works can be obtained, in order that the student may be able to free himself from the minute details of laboratory practice and grasp the broad principles, technological and economic, that underlie success in any chemical manufacture.

In conclusion, Mr. Blount briefly reviewed the present position of our knowledge of the chemistry of cement, and paid a high tribute to the valuable results achieved many years ago by Le Chatelier, which remain but slightly modified to-day.

In moving a vote of thanks to the lecturer and to King's College for the use of the lecture theatre, Professor Meldola expressed the opinion that the Institute had made a very good start with the new scheme of lectures, one of the principal objects of which was to bring students and young members into personal contact with acknowledged authorities on various subjects, and he mentioned that lectures would be published.

CONTINUITY OF EMPLOYMENT IN THE BUILDING TRADE.

We have received the following letter from Mr. F. J. Gayer:

"It is no longer a secret that the workmen are considering the advisability of a strike for increased wages. All 'in the know' will realise and agree that, as the trade is at its lowest ebb, a more inopportune moment could not be chosen. It is recognised that there is much to argue in favour of the operators considering the increased cost of living, and I fear a strike will not remedy the evil, but distinctly aggravate same.

Yours not being a political paper, I do not propose to advance a theory as to the cause and remedy of the bad trade, but the fact remains, in spite of the Board of Trade returns.

Fortunately, the building trade operators are gifted with more of "God's greatest gift, common sense," than most other workers, and I would suggest for the workers' consideration this theory.

Should they by force succeed in obtaining, say, 1s. per hour, the effect on the already bad state of trade will be to make same infinitely worse. Consequently, whereas now, say, ten out of twelve men are employed at 10½d. per hour, I venture to think that the will be reduced to about six at the increased rate; therefore collectively they will be worse off.

The state of trade, and keen competition also, outside of our trade has necessitated much faster pace than hitherto, and naturally the workmen resent the argument of "Hurry up, and when you have finished you get the sack."

I suggest for consideration, and for improvement, the following scheme to combat that evil:

Each firm of standing, while unable to anticipate the number of workmen to be employed, could register sufficient good, efficient men on the "staff," and when one foreman pays off they could be transferred to another foreman; any extra or casual labour could be taken on to fill up, and in course, as circumstances permit, the staff could be transferred to the regular staff.

This, in a small measure, is carried out on every job, as witness the fact that a foreman has his "followers"; but perhaps some more able builder could formulate a better scheme to remedy the evil referred

CHANGES IN THE BRISTOL BUILDING TRADE.

THE Bristol Master Builders' Association decided to increase the rate of builders' wages to 6d. per hour, to come into operation on January 1 next. This decision being arrived at on account of the small earnings of these men, due to the unusually casual nature of their employment and the loss of time through inclement weather. The arrangement does not affect workers employed in the yard and paid a flat weekly wage, or lads or old men, who are to be subject to mutual arrangement as at present. It should be pointed out that the advance is not to take effect immediately, but that such a course would constitute a heavy tax upon those builders who are engaged upon contract work, and who have to tender upon existing rates of pay. *Bristol Times.*

GENERAL BUILDING NEWS.

NEW CHURCH, LANCASTER.

A new Roman Catholic Church has been erected at a cost of about 2,000l. from the designs of the late Mr. Arthur Langdon, A. The building consists of a nave and chancel, and a small memorial chapel on the side. It resembles in many details the cathedral at Westminster.

MAINDER CHURCH EXTENSION.

The extension to St. John's Church, Maender, have been carried out at a cost of 1,000l. under the supervision of Mr. J. Coates, architect, of Cardiff. The contract was let out by Mr. W. A. Linton, builder, Newport.

NEW SCHOOL, FAIRINGHAM.

The George Memorial School has been erected at a cost of about 5,000l. by Messrs. Owen & Son, builders, of Farnborough. Edward Finn, A.R.I.B.A., was the architect, and was assisted by Mr. Robinson, the architect to the Kent Education Committee.

NEW POLICE COURT, BARROD.

The George Kenshole, of Barrood, is the architect for this building, which has been erected at a cost of 2,300l. The court-room seats 150 persons, and the contract was let out by Messrs. Williams & Sons, of Tredgar.

TRADE NEWS.

The Sanitary Hospital, Boscombe, is being built with four of D. O. Boyd's single fire stoves with ascending flues, supplied by S. O'Brien, Thomas, & Co., Upper Essex street, London, E.C.4., and Excelsior Stoves, South Bermondsey.

A new riding school is being built at the York's Headquarters, King's-road, Ealing, by Messrs. E. A. Roome & Co., of Basinghall-street, E.C.4., and Homerton, E.C.1.

Under the direction of Mr. H. R. Crabbe, Inst.C.E.R., Borough Surveyor, Pembroke, Boyle's system of ventilation (natural), being Boyle's latest patent "air-pump" motors and air inlets, has been applied to the Infirmary, Colchester.

Being supplied with Shorland's warm-air heating patent Manchester stoves with rising smoke-flues by Messrs. E. H. and Brother, Ltd., of Failsworth, Chester.

The towns of Penge and Mitcham have been fitted with Merryweather's petrol-driven fire-engine, with "Hatfield" reciprocating pump. The Penge engine will have a capacity of 350 gallons per minute.

The use of Mitcham a 500-gallon engine has been selected. It is twenty-seven years ago the Mitcham Fire Brigade obtained an existing horse-drawn steam fire-engine, of the Merryweather direct-acting type still in service.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.

At the meeting of the London County Council, the following applications under the Building Acts were dealt with, the names of the applicants being given in brief:

Lines of Frontage and Projections.

Kewey, Central.—Erection of a building on the site of Nos. 538 and 540, Kingsland-road, by Mr. W. Watson for Mr. M. G. and Mr. H. P. Grange.—Consent.

Hammersmith.—Erection of buildings upon the site of Nos. 18, 20, and 22, Queen-street, Hammersmith (Messrs. J. S. Quilter & Son).—Consent.

Islington, South.—Projecting one-story shop in front of No. 238, Upper-street, Islington (Messrs. Drivers, Jonas, & Co.).—Consent.

Kensington, South.—Covered way in front of No. 50, Victoria-road, South Kensington (Messrs. G. Gosdon & Sons for Mr. J. R. MacIsaac).—Refusal.

Norwood.—Porches, oriel windows, and metal sign at No. 30, Fulham-road, Kensington (Messrs. J. Offord & Sons, Ltd.).—Consent.

Lewisham.—Erection of a building on the southern side of Codrington-hill, Lewisham, with a flank next to Brockley-view (Mr. J. P. Glanville).—Consent.

Norwood.—Porches, oriel windows, and bargeboards to three houses on the southern side of Cornwall-road, Brixton (Messrs. H. Wakeford & Sons for Messrs. J. & R. Bax).—Consent.

St. George, Hanover-square.—Erection of a building upon the site of Belgrave Chapel on the north-western side of Halkin-street, Westminster (Messrs. G. Trollope & Sons and Colls & Sons, Ltd.).—Consent.

St. Pancras, East.—Erection of a building on the southern side of Clifton-road, St. Pancras, to abut upon the north-eastern side of Clifton-villas (Messrs. James Laycock & Bellamy for Messrs. Jones Brothers (Holloway), Ltd.).—Consent.

Wandsworth.—House on the southern side of Woodbourne avenue, Streatham (Messrs. Halliday & Stanger).—Consent.

Woolwich.—Eight houses on the southern side of Dunvegan-road, Eltham (Mr. J. J. Basset).—Consent.

Width of Way.

Hampstead.—Addition to No. 57, Belsize-lane, Hampstead (Mr. F. Adcock for Mr. F. Hodgson).—Consent.

Width of Way and Lines of Frontage.

Hammersmith.—Billiard-room addition at the rear of No. 117, Goldhawk-road, Hammersmith, abutting upon the eastern side of Avenue-road (Messrs. G. Elkington & Son for the Avenue Property Company, Ltd.).—Refusal.

St. Pancras, North.—Projections in advances of a proposed church on the southern side of Preston-street, Kentish Town (Mr. E. C. Shearman for the Rev. Gordon Smythe).—Refusal.

Woolwich.—Addition to a steel and iron building at the premises of the London Flambo Fuel Company, Ltd. (Mr. J. M. Kennard for the London Flambo Fuel Company).—Consent.

Woolwich.—Temporary wood and iron additions at the premises of the London Flambo Fuel Company upon a site on the western side of a footpath leading northwards from Gallions railway-station, Beckton, North Woolwich (Mr. J. M. Kennard for the London Flambo Fuel Company).—Consent.

Width of Way and Construction.

Hammersmith.—Iron shed and a wood and iron lean-to addition thereto on the southern side of Down-place, Hammersmith (Messrs. B. Bailey & Co.).—Consent.

Lines of Frontage and Construction.

Huckney, Central.—Wood and glass studio on the roof of the one-story shop at No. 269, Mare-street, Hackney (Messrs. Hodson & Whitehead for Messrs. Hodson, Rowlandson, & Hodson).—Refusal.

St. Pancras, West.—Temporary wood and iron buildings upon a site over the London and North Western Railway on the south-western side of Delancey-street, St. Pancras, and the omission of a layer of concrete over the sites of the said buildings (Messrs. Dolman & Pearce).—Consent.

Space at Rear.

Chelsea.—Building upon the space at the rear of No. 214, Pavilion-road, Chelsea (Mr. J. Hudson).—Consent.

Kensington, North.—Erection of a building upon the site of No. 13A, Pembroke-place, Kensington, with an irregular open space at the rear (Mr. J. S. Beard for Sir W. E. Cooper and others).—Consent.

St. George, Hanover-square.—Erection of buildings upon the site of Nos. 55, 56, and 57, Grosvenor-street, and No. 24, Davies-street, Westminster, so far as relates to the erection of additions to the corner building (Mr. E. Wimperis for Lieut. Col. Clifford Probyn).—Consent.

Space at Rear and Alteration of Building.

Peckham.—Retention of No. 60, Rye-lane, Peckham, without an open space at the rear exclusively belonging thereto (Mr. F. E. B. Blanc for the South-Eastern Electric Theatres, Ltd.).—Consent.

Separation and Alteration of Building.

Strand.—Alterations and additions at No. 7, Cork-street, Westminster (Mr. H. Cubitt for Mrs. Pope).—Consent.

Formation of Streets.

Clapham.—Formation or laying out of a new street for carriage traffic in continuation eastward of Rosemeath-road, Clapham Common (Messrs. E. Evans & Sons for Mr. J. Cobeldick).—Consent.

Lewisham.—Formation or laying out of a new street for carriage traffic to lead out of the northern side of St. Mildred's-road, Lee (Mr. G. A. Lansdown for the Rt. Hon. the Earl of Northbrook).—Refusal.

Alteration of Buildings.

Kensington, North.—Addition at the rear of No. 72, St. Ervan's-road, Kensington, without complying with the provisions of the First Schedule to the said Act (Mr. G. R. Holmes for Mr. A. R. Shoubridge).—Consent.

Kensington, South.—Erection of a lantern light at No. 62, Kensington High-street (Messrs. J. Barker & Co., Ltd.).—Consent.

Paddington, South.—One-story shop at No. 38, Queen's-road, Bayswater (Messrs. Veale & Gibbs).—Consent.

Strand.—Alterations at Nos. 2, 3, and 4, New Coventry-street, Westminster (Messrs. Treadwell & Martin).—Consent.

Cubical Extent.

Deptford.—Additional cubical extent in respect of proposed additions to the Key Glass Works, Coldblow-lane, New Cross (Mr. J. O. Cook for the Key Glass Works Company, Ltd.).—Refusal.

Uniting of Buildings.

Brixton.—Formation of two openings in the party wall between No. 1 Electric-avenue and No. 451, Brixton-road, Brixton, at the first-floor level (Messrs. Chappell & Co.).—Consent.

Finsbury, Central.—Uniting of Nos. 80 and 82, Clerkenwell-road, Finsbury, at the basement and fourth-floor levels (Messrs. Eilroft for Messrs. Butler & Crispe).—Consent.

*The recommendation marked * is contrary to the views of the Metropolitan Borough Council concerned.*

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERCARN.—School (5,000l.); Mr. J. Bain, architect, Shire Hall, Newport, Mon.

Blackburn.—Sanatorium for the Charity Organisation Society.

Blackley.—Proposed church (6,000l.); Vicar, St. Peter's Church, Blackley.

Blackpool.—Verandah and shelter on promenade (2,000l.); Mr. J. S. Brodie, Surveyor, Blackpool Town Council.

Bramford.—School; Mr. J. H. Hume, Secretary, Education Committee, Ipswich Town Council.

Brighouse.—Baths, Milroyd-street (6,000l.); Mr. S. S. Haywood, Surveyor, Brighouse Town Council.

Broadstairs.—School, Lloyd Estate; Mr. W. H. Robinson, Caxton House, Westminster, S.W.

Castlehill.—School (5,170l.); Mr. B. Lumb, builder, North-street, Todmorden.

Chasetown.—School; Architect, care of the Trustees, St. Joseph's Roman Catholic Church, Chasetown.

Chertsey.—School (10,135l.); Messrs. Jarvis & Richards, architects, 10, Queen Anne's-gate, S.W.

Dewsbury.—Extensions to infirmary; Mr. W. Hanstock, architect, Branch-road, Batley.

Dumbarton.—Proposed mortuary; Mr. J. Briggs, Surveyor, Dumbarton Town Council.

Dutton.—Adaptation of Durham Lodge into children's home; Mr. G. F. Ashton, Clerk, Board of Guardians, Barnsley.

Earby.—Picture palace and three lock-up shops, New-road, for the Barnoldstock Palace Company.

Eastbourne.—The following plans have been passed:—Addition, "Granville Hill," Silverdale-road, for Mr. H. G. Wilson; Mr. B. Eap, architect. Addition to Cottage Homes for the Trustees; Mr. C. Crisford, architect.

Alterations to Greystone-buildings, South-street, for Messrs. G. E. Maynard, Ltd.; Mr. A. Ford, architect. Addition to Royal Marine Hotel, Royal Parade, for Colonel Cardwell; Mr. John Trowell, builder. Plans have been lodged for an addition to the Lion Inn, Sea-side-road, for Messrs. Harvey & Son; Mr. A. Ford, architect.

Eastleigh, S.O. (Hants).—Shops, Leigh-road, for Messrs. Strong & Co., brewers, Romsey.

* See also our list of Competitions, Contracts, etc., on another page.

Eccles.—Plans have been passed for a picture theatre, Church-street and Corporation-road, for Mr. J. Knight, architect.

Egham (Surrey).—School; The Governors, St. George's Charity, Egham.

Festiniog.—Alterations and improvements at school (1,018l.); Messrs. Evans & Griffiths, builders.

Foleshill.—Seven houses and shop, Windmill-lane and Foleshill-road, for the Lockhurst-lane Co-operative Society.

Forfar.—Drill-hall; Mr. Carver Brymon, architect, Forfar.

Frodingham.—Enlargement of St. Lawrence's Church (5,000l.); Sir Charles Nicholson, Bart., architect, 2, New-square, W.C.

Glasgow.—Buildings for Messrs. Alexander Mathieson & Sons, Ltd., Saracen Tool Works, East Campbell street, Glasgow.

Grangemouth.—Buildings, East End (2,000l.); Mr. D. A. Donald, Surveyor, Grangemouth Town Council.

Great Harwood.—Reconstruction and erection of hall and read works for Messrs. T. Westby & Sons.

Greenock.—Trades' Hotel, Bogle-street (454 beds), for Mr. David John Garrett.

Greetland.—Sunday-school; Vicar, St. Thomas's Church, Greetland.

Grimsbly.—Spice factory; Mr. H. S. Caping, architect, Court-chambers, Grimsby.

Hanley.—Bottling stores; Mr. C. J. Cowlishaw, architect, Stafford-street, Hanley.

Larne.—Thirty-nine houses (120l. each); Surveyor, Larne Rural District Council.

Leith.—Ten houses, Restalrig-road, for the Edinburgh Co-operative Building Company.

Lincoln.—Parish hall, Santhorpe-street; Vicar, St. Andrew's Church, Lincoln.

Liverpool.—Headquarters (9,500l.) for the Liverpool University Settlement.

Marple.—Grocery stores for the Compstall Co-operative Society; Mr. M. Warrington, builder, Hyde.

Nantwich.—Extensions to church schools (1,600l.); the Vicar.

Northampton.—The following plans were passed:—Additions to Bottling Department, Bridge street, for Messrs. P. Phipps & Co., Ltd.; three houses, Ashburnham-road, for Mr. A. Glenn; thirteen houses, Sharman-road, and two houses, Spencer street, for Mr. G. F. Sharman; four houses, Lloyd-road, for Mr. A. Wilford; addition to laundry, Kingsley Park-terrace, for Mr. C. B. Taylor; four houses, Raymond-road, for Messrs. E. D. Sharman & Son; additions to factory, Green wood-road, for Messrs. C. & E. Lewis; sixteen houses, Spencer Bridge-road, for Mr. A. G. Godwin; thirteen houses, Birchfield-road and Abington-avenue, for Mr. A. P. Hawtin; six houses, Broadway, for Mr. W. Heap. A plan has been lodged for ten houses, Knight's-lane, for Mr. W. S. Brown.

Padiham.—Extension to premises to hold 400 extra looms for the Albion Loom and Power Company.

Petersfield.—Proposed building; Secretary, Working Men's Institute, Petersfield.

Radcliffe.—Sixty houses, North street; Mr. W. L. Rothwell, Surveyor, Radcliffe Urban District Council.

Royton.—Cotton-spinning mill for the Park and Sandy-lane Spinning Company; Mr. A. Turner, architect, Clegg-street, Oldham.

St. Anne's.—Extensions to St. Anne's School; the Managers.

Salford.—Rebuilding Lodge, Peel Park (445l.); Messrs. Fearnley & Sons, builders. Pendleton. Buildings to house slab-making machinery (4,400l.); Messrs. J. Gerard & Sons, Ltd., builders, Swinton. Alterations to workshop at Electricity Works; Messrs. C. S. Allott & Son, architects, Manchester. The following plans have been passed:—Alterations and extensions to Sandywell Brewery, Springfield-lane; the Proprietors. Alterations and extensions to mangle factory, Trafalgar-street, Broughton; the Proprietors.

Tanygrisiau.—Alterations and improvements at school (636l.); Messrs. Evan Griffith & Son, builders, Festiniog.

Tunbridge Wells.—Secondary school (8,560l.); Mr. W. T. Burrows, builder, Maidstone.

Upper Arley.—Structural alterations to the Church School; the Managers.

Walker.—Enlargement of Roman Catholic School (200 extra places); the Trustees.

Wallsend-on-Tyne.—Proposed laundry; Secretary, Co-operative Laundries, Ltd., Co-operative Hall, Wallsend-on-Tyne.

Warrington.—The following plans have been passed:—Thirteen houses, Cowdell-street, for Mr. W. Heesom; additions to chapel, Golborne-street, for the Trustees of the Golborne-street Baptist Chapel; fifteen houses, off Ashwood and Briarwood avenues, for Mr. W.

Cooper; club, St. Mary's-street, for the Trustees of the Junior Conservative Association; alterations to Nos. 77 and 79, Bridge-street, for Mr. Henry Thornton; extension to works, Factory-lane, for Messrs. J. Crossfield & Sons, Ltd.

Winchester.—Theatre; Messrs. Houston & Houston, architects, 1, Long-acre, W.C.

Wrexham.—Chapel; Messrs. Collins & Godfrey, builders, The Cross, Tewkesbury.

Ystradgynlais.—Council offices (1,500l.); Mr. T. Watkins, Surveyor, Ystradgynlais Rural District Council.

THE MANSION HOUSE.

On Thursday last week the Court of Common Council referred to Committee a proposal to deal with the Mansion House, said to be in an uninhabitable condition.

The matter was that forwarded by Mr. Carl Hentschel, who contended that the Mansion House was not in good condition, being incapable of housing a Lord Mayor in comfort and his staff in decency. Proceeding, he said:

"Economy run mad is the surest dog to find itself gasping under a cold douche of hasty and enormous expenditure.

The method is to keep down the expenditure, and each Chairman of the General Purposes Committee asks first, not what is necessary to be done, but "Can we save on our last year's bill?" It is a mistake, and the Corporation will, I am afraid, find it so. Even under our present method, however, our expenditure goes up. It is bound to, for as the Mansion House gets into a worse state the "patching" becomes more difficult and more expensive.

The fact is that really little has been done to the Mansion House beyond an annual cleansing and redecoration. I have been back for a considerable period in the accounts, and am confirmed in this view. There was a large expenditure between 1700 and 1800 (5,043l.), but that was really for roofing in the saloon, altering the interior, putting a new roof on the Egyptian Hall, and other similar work. There were repairs to the extent of 4,000l. in 1832, when Sir John Key had to vacate it for a time; and alterations in 1847, while the foundations have constantly been a source of trouble. But during the last half-century, at any rate, nothing material has been done to modernise, to improve, or to meet the altered circumstances.

The only exception I can find in this generalisation has reference to the drains, which in 1888 became so obviously in need of attention that they were thoroughly overhauled, at a cost of some 2,000l.—and not before it was required. I do not wish to frighten people, but I invite members to read the Report of the Banner Sanitation Company on untrapped drains and defective sewers, also without traps. In 1897 the drains were tested, at the cost of the then Lord Mayor, since when nothing serious has been done. To-day I say unhesitatingly that matters in the sanitary direction are bad. The lower portions of the house are disgraceful. Let your Medical Officer of Health inspect these lower regions, and I am sure he will condemn the arrangements as insufficient, inefficient, and altogether out of date.

Here are a few of the opinions I have had from past Lord Mayors and other Aldermen:—

"I think it is hardly fit for the Lord Mayors to live in, and every year it is becoming worse. I entirely agree with you that the lower floor does need absolutely to be remodelled; the kitchen and footmen's departments are not worthy of the Mansion House.

I agree with you that nothing but remodelling the lower floor of the Mansion House will suffice to bring it up to modern ideas of sanitation or even decency.

You need a first-rate architect specially skilled in the reconstruction of mansions, or large London houses, if it ought to be well done, and to do it well you require the best advice that can be obtained.

We should not like to house our private staff in the way in which the official staff of the Lord Mayor is housed.

Drastic alterations are necessary, especially in the domestic and kitchen quarters, at the Mansion House.

The Mansion House . . . is old-fashioned and out of date, and it is certainly no credit to the Corporation. . . . The sanitary arrangements are such that no modern householder, or even County Council would permit.

Paper is bleed over paper, paint over paint, and nothing is ever properly done.

The servants' departments are in a most deplorable condition, and calculated to do serious discredit to the Corporation. The general condition of the Mansion House requires the most careful and generous consideration at the hands of the Court. I think this is a

necessity, not only for the comfort and convenience of the Lord Mayor for the time being and his family, but for the credit of the City itself.

Those opinions, I venture to think, prove my case for inquiry. The works needed could be accomplished.

Now, what I ask the Court to do is to examine the whole building thoroughly. Let it be discovered whether I am, as I say I am, backed by expert opinion, and let us attempt to modernise and improve. Let us make the bedrooms adequate and hygienic, let us endeavour to make the public apartments adequate for the work they are called upon to do, and let us see that the kitchens, which play such an important part in the hospitality of the Mansion House, are worthy of the Lord Mayor's guests. When the matter has been through the mill of a thorough inquiry its expense be faced as one day it will certainly have to be faced.

To those, however, who would emphasise the difficulties of carrying out any big scheme of works on account of the Lord Mayor's presence, I would say this:—We have lately become very familiar in London with very quick construction. The method came, I think, from America, but Englishmen have adopted and improved it, and combined rapidly with solidity of workmanship. To-day the works needed at the Mansion House could be accomplished without disturbing the Lord Mayor. All could be done in six weeks in August and September. I have only to point to the rapidity of the construction of the New Opera House, the Waldorf and the Savoy Hotels, to convince my colleagues of the feasibility."

In connexion with the above we take the following from the *City Press*:—

"When Mr. Hentschel's motions were reached Mr. Leo Taylor rose to complain of the action taken by Mr. Hentschel in circulating matters in the nature of a Report before it had been before the Court. In the ordinary way Committee would have considered the matter and it would have come before the Court, and been ordered for printing. Mr. Fred L. thought that Mr. Hentschel should be thanked and not censured, for placing the whole of the matter before the Court. Mr. Hentschel, in the course of his personal explanation, said that he did not give his pamphlet to any member of the Press until that morning. Mr. Hentschel formally moved the resolution standing in his name. In seconding this, Major Humphreys said he would not waste time by making a long speech, but he certainly thought that the two questions raised deserved careful consideration in Committee. Mr. Bird complained that Mr. Hentschel had not paid attention to the value of the Mansion House site. He moved that the General Purposes Committee should be instructed to consider the question of transferring the Lord Mayor's official residence to more convenient part of the City, and sell the site of the present Mansion House.

Bird's amendment was not seconded. Deputy Wallace moved an amendment to effect that the General Purposes Committee should be asked to report forthwith as to condition of the Mansion House, with suggestions having particular regard to the cost.

Hentschel said he would gladly welcome the amendment. The Lord Mayor said he had so far had time to read Mr. Hentschel's pamphlet. Indeed, he had not had time to become Lord Mayor to go over the Mansion House. The Lady Mayoress, who had heard great deal about sanitation, and knew much about it by reason of her parish work, however, reported to him that the General Purposes Committee were recently shown at Mansion House some things that ought not to exist. She did more. She said: "If I had them to exist I should be justified in calling for the guidance of the Court. The Rev. Clement-Smith suggested that it might well to refer the question to the Sanitation Committee. On a show of hands Mr. Hentschel's first recommendation was negative, the second (Mansion House Improvements) was, by general consent, superseded by Deputy Wallace's amendment, which, to a large extent, satisfied the object that Hentschel had in view.

Mr. Carl Hentschel afterwards informed the Court that, as the matter was very urgent, he had obtained three tenders for re-roofing the Egyptian Hall, the lowest being for 192l.

He asked the Court to sanction its acceptance. The Court readily agreed."

THE SCIENCE OF VENTILATION.

At a meeting of the Royal Scottish Society of Arts, Edinburgh, held on November 27, a paper was read on the subject of ventilation by Capt. Geo. A. Chaddock, the patentee of a Chaddock mechanical window. Captain Chaddock, in prefacing his scientific explanation, said that the advocates of natural ventilation did not appear to realise the importance of even heat distribution as well as air distribution. He contended that when a person enters a room it should be regarded as rather seeking warmth, which scientific research showed it would have at any cost. Therefore, unless temperature matter in the room of artificial heat was immediately available, the cold air would gather heat by robbing the inmates, which it did to their intense discomfort. The first consideration is temperature, or even heat, as well as air distribution, conformity with nature's principles ruling over oceans of air and water.

The lecturer gave an account of the effects that had been realised in many public schools and institutions from the adoption of mechanical windows installed by the Chaddock Ventilation Company. Illustrations and diagrams relating thereto were shown, the principle of the system being to use a continuous and equal mingling of fresh air with the artificial heat supplied, eliminating draughts, and maintaining a standard of purity equal to that of the actual air, though regulated, of course, to any suitable temperature. On the question of ventilation in regard to schools, the lecturer's contention is that if air is allowed to move the line of least resistance it can only do so by passing out of a classroom into a hall or corridors, thus polluting other rooms of a building. The great bulk of the air in England, he said, thus contaminated, and for this reason the Board of Education are now prohibiting central hall systems of air moving on the line of least resistance was thus not only dangerous as a means of circulating impurities, but it tended to the maximum of discomfort, in setting up draughts and irregularities of temperature, and therefore, was a principal reason for the adoption of artificial systems. In connection to this, if the rotary air movement was used, outlets and inlets being on the same side of the classroom, the air would pass out to the side on which it entered, therefore on the line of greatest resistance, thus ensuring steady, even movement, and thereby eliminating draughts and irregularities of temperature. This procedure, he said, admits of better air treatment all the year round, and the system necessitates complete isolation of rooms, it spelled for the general health of those in the building; also excluding noise from other rooms, instruction can be carried on to advantage.

METROPOLITAN ASYLUMS BOARD.

At a usual fortnightly sitting of the Board was held on Saturday, when the following matters were disposed of:—
Cleaning and Repairs and Painting Works.—The recommendation of the Hospitals Committee, it was agreed that such cleaning and painting works and repairs as may be ordered by the Committee be carried out by infectious hospitals and wharves during either by direct labour or by contract, as may determine after consultation with the Works Committee.

19th Asylum.—For the purpose of raising the various grades and sexes of the reformed who are to be transferred to Darent Asylum it was decided to erect gates and gates at an estimated cost of £700.
19th Asylum.—Certain alterations in heating arrangements at the above Asylum authorised.

OBITUARY.

Mr. I. C. Johnson.

At his death, on November 30, at Gravesend, of Mr. Isaac C. Johnson, J.P., aged 70 years. Mr. Johnson was principal partner in the firm of Messrs. I. C. Johnson & Co., cement manufacturers. He founded works at Gatheshead-on-Tyne, where he served as Mayor, and at Cliffe and Green in Kent.

LEGAL COLUMN.

Repairing Covenants in Leases.

In our issue for March 31 last we briefly noted a decision in the Court of Appeal, *Zurcott v. Wackley*, under the title of "Landlord and Tenant." This case is now fully reported in the *Law Times*, and it raises questions of such importance to lessors and lessees that we propose examining the case and the judgments delivered at greater length. The defendants were assignees of a lease of premises in Hatton-garden, which were some 200 or 300 years old. The lease was granted in 1881 for twenty-eight years, and expired on March 25, 1909. On February 11, 1909, just before the lease expired, the London County Council under the London Building Acts gave the owner of the premises notice that the front eastern external wall to the level of the ground floor was in a dangerous condition, and requiring them to take it down and shore up the premises. The defendants disputed the necessity for this; but an arbitrator under the Building Acts determined the requirements to be necessary. The defendants continuing not to comply with the notice, an order was made by a magistrate on the owner requiring him to take down the wall. The owner, the plaintiff in this action, then pulled down the wall and rebuilt it, and claimed the costs incurred in these operations from the defendants, the assignees of the lease under the covenants to repair contained in the lease. The covenants in the lease were as follows:—That the lessees should "from time to time during the said term, at his and their own proper costs and charges, well and substantially repair . . . and keep in thorough repair and good condition all the said premises thereby demised, with all fixtures and appurtenances thereto belonging, and all buildings, improvements, and additions, . . . and yield up the said premises, buildings, etc., at the end or sooner determination of the said term 'being so repaired and kept together.'"

It is to be observed that the lease was one which placed heavy responsibility upon the lessee, "to well and substantially repair" and "to keep in thorough repair and good condition." The contention of the defendants was that, despite these very stringent covenants, he was under no liability to rebuild this wall, which had perished so much by age that it could not be restored, but must be made anew. In this connexion it is important to note that the Official Referee, to whom in the course of the proceedings the matter had been referred, had found that this wall was decayed by age and could not have been patched or repaired, it could only be rebuilt, but that the whole building did not require rebuilding. The Divisional Court held that, as only a portion of the structure was affected, the lessee could be called upon to renew this portion of the structure, as this was not an instance of a case where a new structure had to be substituted for an old structure.

The Court of Appeal affirmed the judgment of the Divisional Court, and, as they very fully considered the cases and the law relating to this subject, we may usefully refer to the judgments in some detail.

The Master of the Rolls thus stated the defendants' contention:—"The effect of time and the elements and the natural effect of old age has destroyed this wall, and it is not due to any negligence on our part. We cannot help it. We are not liable to make it good." He answered this contention by asking himself this question:—"Is what has happened of such a nature that it could be fairly said that the character of the subject-matter of the demise, or part of the demise, in question has been changed, or is it simply injury to a subsidiary portion as distinguished from the whole?"

He held it was restoration of a subsidiary portion, just as much as would have been the renewal of some rafters in a roof, or the replacing of an earthenware pipe, or the renewal of window-frames.

Lord Justice Fletcher Moulton considered the several covenants separately. "To keep in good condition" he held to impose an obligation varying with the age of the premises, but always involving a liability to maintain the house as a house, even if by replacing part after part the result was in the end to replace the whole.

"To keep in thorough repair" he interpreted in much the same sense, but as not involving a wider obligation. Whilst "to repair" he held to involve replacement so long as the house exists as a structure.

Lord Justice Buckley came to the same conclusion—"renewal as distinguished from repair is reconstruction of substantially the whole subject-matter."

These judgments contain a very helpful exposition of the law relating to such

covenants, but one word may be said upon the cases which were also carefully discussed in the two Courts.

A certain sentence occurring in the judgment of Chief Justice Tindal in an old case, *Gutteridge v. Munyard*, was much relied upon by the defendants:—"What the natural operation of time flowing on effects, and all that the elements bring about in diminishing the value, constitute a loss which, so far as it results from time and nature, falls upon the landlord."

In a well-known handbook this case is cited as an authority for the proposition:—"The tenant is not liable for dilapidations resulting from natural decay."

This case is somewhat differently reported in two reports, and the Judges in both Courts required to be laid it down that this sentence, of the Chief Justice, taken by itself, would not represent the law. It may also be observed that the covenants in that case were by no means the same as those in *Lurcott's* case, and "reasonable use and wear and tear" were also excepted.

As regards other well-known leading cases, it will be seen that the present decision is brought in line with them as follows—*Proudfoot v. Hart*. The Court approved.

The covenant there, was to keep the premises in good tenable repair, and so leave the same. Some of the floors were rotten, and the Court of Appeal held that they must be renewed. "Tenable repair" was thus defined:—"Such repair as, having regard to the age, character, and locality of the house, would make it reasonably fit for the occupation of a reasonably-minded tenant of the class who would be likely to take it."

The cases distinguished from the facts of *Lurcott's* case on the ground that the operation required to be done was more than repair and amounted to a reconstruction of the subject-matter are—*Lister v. Lane* (1893), where a house was erected upon a timber platform which had rotted away, and it was only possible either to pull it down or to underpin it to a depth of 17 ft. and build up a brick or other structure for a new foundation; *Wright v. Lawson* (1903), where a bow window could not be erected as before on cantilevers, but would have been an entirely new structure, supported by vertical supports from the ground; and *Torrens v. Walker* (1906)—noted the *Builder*, May 19, 1906—where a landlord had covenanted to repair outside walls on notice, and two of the walls were in such a state that they would have had to be pulled down from top to bottom. This house was triangular in form at the junction of two streets, and it was held that the renewal of these two walls would have practically destroyed the whole subject-matter of the covenant. In this case there was a further point, that no notice had been given of want of repair until after the premises were pronounced to be dangerous, and this alone serves to distinguish it from the present decision.

These cases show the necessity of carefully considering the nature of the covenants to repair before entering into leases, especially where the subject-matter of the demise is an old building.

Fire Precautions: Appeals to Tribunal of Appeal.

The decision given by a Divisional Court in the case of *Clarke v. London County Council*, which was reported at length in our issue of last week, decides a simple but important point under the London Building Acts (Amendment) Act, 1905. In our "Notes" (*the Builder*, June 25, 1910) we have already explained this question, but, as the report of the recent appeal is necessarily voluminous, our readers may find it useful if we again shortly summarise the point in issue in this case.

By sect. 7, sub-sect. 1, in the case of certain buildings plans have to be approved by the County Council or (in the event of an appeal) by the Tribunal of Appeal, showing the means of escape in case of fire.

By sub-sect. 2 of the same section the buildings or parts of buildings subject to this legislation shall not be occupied or let for occupation "until the Council shall have issued a certificate (or, in the event of an appeal), the Tribunal of Appeal shall have determined that such building has been provided with means of escape in accordance with plans approved as aforesaid by the Council or the Tribunal of Appeal, as the case be, and that the conditions (if any), subject to which such plans were so approved, have been complied with."

Sub-sect. 22 provides that an appeal may be taken to the Tribunal of Appeal within two months after "the refusal or conditional grant by the Council of their approval of any plans pursuant to sect. 7; or the refusal by the Council to issue a certificate pursuant to the same section."

In the case under consideration the Council had given conditional approval of the plans submitted; there were in all thirty-six conditions, all of which were complied with, except that which provided "that the staircases be separated from the rooms and corridors on all floors by fire-resisting partitions or walls, and all openings in such separations to be hung with self-closing fire-resisting doors or windows glazed with fire-resisting glazing."

This requirement was neither complied with nor appealed against; but on the building being completed a certificate under sect. 7, sub-sect. 2, was applied for, and, when refused by the County Council, appeal was made to the Tribunal of Appeal, and on the hearing of this appeal the Tribunal of Appeal decided, not that the conditions had been complied with under sub-sect. 2, but that "the building had been provided with all such means of escape freedom in case of fire as could be reasonably required in the circumstances of the case."

The Divisional Court have decided that on an appeal under sub-sect. 2, where the question to be determined is whether the building has been provided with means of escape in accordance with the plans approved or conditions imposed, the Tribunal of Appeal had no jurisdiction to reopen the whole question and to then determine whether the building was reasonably provided with means of escape. In other words, the appeal given by sect. 22 is twofold. First an appeal on the reasonableness of the means of escape provided by the plans, and second, an appeal as to whether the conditions complied with under sub-sect. 2, but the subject-matter of each appeal is separate and distinct. Had the building owner desired to test the reasonableness of the condition, he should have appealed within the time allowed and before the building was completed.

A somewhat similar requirement was contested and appealed under sect. 9, in the case of an existing building, in Berkeley Hotel Company v. London County Council (the Builder, March 12, 1910).

Laying Out a New Street.

In the recent case of Attorney-General v. Dorin, a Judge of the Chancery Division was called upon to decide whether a builder who simply builds a row of houses upon his own land by the side of a roadway is "laying out" a new street within the meaning of by-laws, which require new streets to be of a certain prescribed width at least. Between the houses and the road a strip of land was left, over which the cottages or houses were approached through gates in the hedge over circuit paths; but the leasing of this intervening strip appears to have had nothing to do with the decision. The Judge held that, although for certain purposes under the Public Health Act, 1875, the erection of this row of houses would make the road a new street, yet under the by-law the defendant had not "laid out" a new street. In holding this the Court was following a decision of the Court of Appeal in Devonport Corporation v. Tozer (1905), in which case it was held that there must be something in the nature of a physical laying out as distinguished from a metaphorical laying out.

Possibly the decision may be summarised by saying that, although the erection of a row of houses may convert a road into a new street so as to place the owner under statutory obligations to contribute to such expenses as paving, etc., it does not bring the owner within a by-law relating to streets actually newly erected.

Had the present decision been otherwise, it would appear that the owner could only build upon his land if he consented to dedicate a strip to the public as an addition to the existing roadway. The case is at present very shortly reported, and we may have to refer to it again.

LAW REPORTS.

HIGH COURT OF JUSTICE—CHANCERY DIVISION.
(Before Mr. Justice SWINFEN EADY.)

Westminster Nuisance Case: Halcyon Club, Ltd. v. The Westminster Corporation.

This case was heard on the 24th ult. upon a motion by the plaintiffs for an interim injunction to restrain the defendants until the trial or further order from committing a nuisance by erecting or maintaining against a wall of the plaintiffs' premises in Cork-street, Westminster, a public convenience, and from trespassing by erecting the same, and for a

mandatory order to compel the defendants to remove a convenience which had been temporarily erected.

The defence was that, as the sanitary authority, the defendants had the right to erect such a convenience in any suitable public place so long as they did not create a public nuisance.

Mr. F. Russell, K.C. and Mr. Latter appeared for the plaintiffs, and Mr. Morton Smith for the defendants.

Mr. Russell said that the Corporation had passed a resolution that they would do nothing further in the matter until the trial, but he did not think that was satisfactory, owing to the nuisance by smell and in other respects. The club was a ladies' club. If the plaintiffs were wrong in their action the defendants intended to take down the present erection, which was temporary, and re-erect a new one. Plaintiffs wanted an undertaking which would satisfy them until the trial.

Mr. Morton Smith said that the erection had been there since 1865, was re-erected in 1889, and was there when the negotiations took place for acquiring the plaintiffs' premises as a ladies' club. Men were employed to cart away the property of the Corporation last April. Afterwards it was found necessary to re-erect it for the Corporation, and after removal for a few hours, by mistake of the contractor, it was re-erected temporarily, and was used down to the commencement of the present action. The difficulty might not cease. It was closed to nuisance, which was not an addition to that, the freeholder was not a party to the action. He (counsel) contended that there ought to be an undertaking by the freeholder as to the rights of the Corporation.

His Lordship said there need be no undertaking of any legal rights which the Corporation possessed. The only order that he would make would be that the costs of the motion should be costs in the action.

COURT OF APPEAL.

(Before the MASTER of the ROLLS and Lords Justices FLETCHER MOULTON and FARWELL.)

Action against Builders and Contractors: Dorman, Long, & Co., Ltd. v. H. Willcock & Co.

This case was heard last week upon the appeal of the defendants from a judgment of Mr. Justice Channell in the King's Bench Division in favour of the plaintiffs.

Mr. J. R. Atkin, K.C., in support of the appeal, said that the plaintiffs brought the action against the defendants, a large firm of builders and contractors, at Wolverhampton, to recover 88l. 13s. in the following circumstances:—In September, 1907, the defendants entered into a contract for the erection of a technical college at Bristol, the contract price being about 28,000l. Under the contract the plaintiffs, who carry on business at Middlesbrough, were appointed by the architect, Mr. Cross, the sub-contractors for the supply of steelwork for the building. By the contract, before the sub-contractors and various tradesmen could get payment for work and materials supplied it was a condition that they should get the certificate of the architect, and when that certificate was given the defendants, as the contractors, had to pay the sub-contractors, etc., the sums so certified by the architect. Plaintiffs supplied steelwork for the building, and sent the invoices in the usual way to the builders, from time to time receiving payments on account upon the certificates of the architect. In July, 1909, when the work was practically finished, the plaintiffs sent in their statement of account for the final balance of the steelwork, and the architect gave his final certificate on October 22, 1909, for 2,819l. 14s. 2d., in which he included the sum due to the plaintiffs as made up from the statement of account supplied. Plaintiffs afterwards discovered that they had omitted by mistake 88l. 13s., the price of three stanchions supplied for the building. The architect declined to open up the matter, and the defendants declining to pay, the present action was brought. Defendants said that, of course, if the building owners would pay the amount they would pay it over to the plaintiffs, but otherwise they could not admit that they were liable, and their defence was that the certificate of the architect was a condition precedent to the plaintiffs' right to sue. Plaintiffs, however, contended that it was the duty of the defendants, under the contract in the circumstances of the case, to go to arbitration with the building owners on the matter, so as to get the mistake rectified, and that by their not doing so defendants had waived the point as to the architect's certificate being a condition precedent to right to sue, and Mr. Justice Channell so held. He (Counsel) contended that the learned Judge was wrong, and that he should have entered judgment for the defendants.

Mr. Sanderson, K.C., having supported the

judgment of Mr. Justice Channell on behalf of the plaintiffs.

Their Lordships allowed the appeal, holding that in the circumstances the plaintiffs had not the right upon the construction of the contract to call upon the defendants to have the certificate of the architect reviewed, and that, therefore, the defendants were not liable to the plaintiffs for the 88l. 13s.

KING'S BENCH DIVISION.

(Before Mr. Justice COLERIDGE.)

The Validity of an Architect's Certificate:

Ashwell & Nesbitt, Ltd. v. Allen & Co.

This case was heard on Monday, November 27, and the following day, and matters of considerable interest to builders and architects were discussed.

The plaintiffs, Messrs. Ashwell & Nesbitt, Ltd., of Leicester, sued Messrs. Allen & Co., of Westminster, for 377l. for work done and materials supplied to a building in Regent-street, London, under a contract of May 12, 1909. The defendants denied that the plaintiffs did the work or supplied the materials, and they further pleaded that the sum in the contract was not to be paid for until included in the architect's certificate, and that it had never been so included.

Mr. J. B. Matthews said that the action was to recover the amount claimed under the certificate of the architect for Messrs. Lewis & Allenby, who were re-erecting premises of land belonging to the Crown in Regent-street, London. The defendants were the general contractors for the work, and the plaintiffs were sub-contractors for the heating and hot water installation, to the amount of 3,320l. Various payments were made up to March 1911, falling short of the sum due by 377l., and on it being asked for the defendants denied liability. They also said the work was done under contract, and that it was a term of the contract that payment should only be made to the plaintiffs on the inclusion of the amount in the architect's certificate, and on payment of the amount. The main point in dispute was whether the defendants had received the money from the building owners. The defendants settled a claim for extras with the building owners for 5,000l., part of which was paid in cash and part in prior lien bonds issued by the building owners on the property. The plaintiffs contended that the terms of settlement were equivalent, as between themselves and the defendants, to payment to the defendants, and that the defendants were estopped from denying that they had received payment. Counsel said that his view was that the plaintiffs were clearly entitled to stand upon the certificate and be paid the amount certified.

Mr. Justice Coleridge: Can the certificate be got over on the ground of mistake? Mr. Matthews: I think it is impossible to suggest mistake. Continuing, Mr. Matthews said that because the defendants chose to enter into an arrangement with the building owners they had no right to hold over the balance of the plaintiffs' account. The formal certificate for 377l. was issued on March 1 by Mr. Verity, the architect, which the plaintiffs forwarded to the proper quarter, with request for a cheque.

In answer to the Judge, Mr. Hudson, K., who appeared for the defendants, said: Plaintiffs were, first, there must be a certificate granted for the money due to the plaintiffs; secondly, the amount of that certificate must be included in the certificate to the defendants; and thirdly, the amount must be paid to the plaintiffs.

His Lordship: There was a certificate given by the architect to the plaintiffs before the action was brought, then a certificate was given to the defendants, and a settlement of the defendants' certificate was arrived at in lieu of being paid?

Mr. Hudson: Yes.
His Lordship: It included the plaintiffs' 377l.?

Mr. Hudson: We say it does not. Disputes were going on as to the number of radiators put into the building, and we had given building owners large credits for a large difference in the numbers supplied.

His Lordship: Can you go behind the certificate on that ground?

Mr. Hudson: Yes; because the architect without any notice to my clients issued certificate for 377l.

His Lordship: He had a right to do that. Mr. Hudson: I say not, in view of the fact that he must have known that we had already given the building owner large credits in respect of the work and goods which the plaintiffs ought to have supplied and did supply.

Mr. Justice Coleridge: Do you say that certificate of an architect is bad unless he

Ford's Park, Canning Town. Messrs R. Gay & Co., warehouse, Langthorne Works, Stratford-market; Messrs. H. Tate & Sons, Ltd., additions to electric power house. The Thames Sugar Refinery, Silvertown. The following have been lodged:—Messrs. W. Bradford & Sons, additions and alterations to the "Green Gate" public-house, High-street, and Deacon-street, Stratford; Messrs. Emden, Egan, & Co., cinematograph theatre, 370, High-street, Stratford; Mr. A. Single, rebuilding workshop and warehouse, rear of 29, Hubbard-street, West Ham.

Westminster.—The tender of the Acme Flooring and Paving Company (1904), Ltd., has been accepted at 1217 16s. for paving with combined strip wood pavement the roadway of Durham House-street. The Improvements Committee have decided to alter and widen Poland-street by pulling down No. 18 and laying the site thereof into the highway. Macadam repairs are to be carried out in St. George's square at an estimated cost of 1557 6s. 8d. creosoted yellow deal paving-blocks are to be purchased from Messrs. W. W. Howard Brothers & Co., Ltd., at a cost of 412. 16s. 6d. Consent has been given to the extension to Little George-street of the sewer in the new street between the Middlesex Guildhall, Broad Sanctuary, and the Surveyors' Institution, the execution of the drainage works at the Institution, the abolition of the existing sewer running under the Institution premises, and the construction of a flushing tank, in accordance with the plan submitted by Mr. Paul Waterhouse on behalf of the Institution, subject to protective conditions and the sum of 1600, being deposited with the Council to cover the costs of works on or under the public way, which are to be executed by the Council. A proposal is on foot to continue the widening of Argyle-place to Great Marlborough-street, on the south side, between Kingly-street and Carnaby-street. Plans submitted by Messrs. Bull & Esdaile, Ltd., for additions to No. 55, Princes-gate, have been approved.

Willesden.—The tender of Rayboulds, Ltd., has been accepted for a supply of unclimbable iron fencing at Roundwood Park, at 3s. 6d. per yard, with iron gates at 35s. each. The tender of Mr. E. G. Brummell has also been accepted, at 14012, for the construction of about 1655 ft. lineal of concrete tube surface water drain at water course, rear of Denzel road. Electricity mains are to be extended at an estimated cost of 1871. Fresh plans and estimates are to be prepared by the Engineer for making-up part of Dog Lane.

Wood Green.—Plans submitted by Mr. C. H. Croxford, Borough Engineer and Surveyor, have been passed for the erection of an elementary school at Lordship-lane and Ellenborough-road, also for alterations and additions at Bounds Green-road School.

Woolwich.—Electricity mains are to be extended at an estimated cost of 651. In connexion with the making-up of a portion of Clay-lane, Plumstead, widening work is to be carried out at an estimated cost of 2402. No objection has been raised to a plan submitted by the London County Council by Mr. J. R. Vining, 89, Chancery-lane, W.C., for additions to a warehouse in Wood-street for Messrs. J. James & Co. Plans have been passed for Mr. J. J. Bassett, Easthall-road, Eltham, on behalf of Lord Rowallan, for eight houses, Dunvegan-road, Eltham, also for Messrs. Whistler & Worge, 80, High-road, Eltham, on behalf of Mr. S. R. Carr, for additions to "Mottisfont," Court-road, Eltham. Plans have been lodged by Mr. J. J. Bassett, on behalf of Lord Rowallan, for six houses, Dunvegan-gardens, Dunvegan-road, Eltham.

FOREIGN AND COLONIAL.

Australia's Demands for Artisans.

The demand for skilled labour in New South Wales is so great that the Master Builders' Association of Sydney have despatched a trade union representative to England to inform his fellow-workmen in this country of the openings that exist in New South Wales for artisans. The gentleman referred to (Mr. F. J. Murray) informed a representative of the *Morning Post* that the building trades of Sydney are seriously hampered by the lack of men, particularly bricklayers, plasterers, stone-masons, and carpenters and joiners. There are opportunities for men belonging to other trades, but Mr. Murray is only directly concerned with the needs of the Master Builders' Association. "Only recently," he said, "the State Government appointed a Royal Commission to inquire into the state of the labour market in Sydney, and the result of the inquiry was to show that there was an urgent demand for at least 3,000 artisans in the City of Sydney alone. The minimum wage (fixed

by law) for the trades with which I am more directly concerned on this mission is as follows:—Bricklayers, 12s. per day, and plasterers, carpenters, and joiners, 11s. This is for an eight-hour day, but in some of the trades—that of the masons, for instance—the hours are even less than that, being forty per week. I am not engaging men because under the laws of the Commonwealth men may not go out under contracts entered into abroad. This is a condition imposed in the interests of the workers lest they should be induced to contract on terms less favourable than those that they can command on the spot. But I can do this—I can give an intending emigrant belonging to any of the trades I have enumerated a signed card addressed to the Master Builders' Association which will ensure him an engagement on the terms I have mentioned immediately on arrival. I can also give him this assurance—that constant work awaits him at his trade for more years than he is likely to live."

An advertisement having appeared in the Press to the effect that Mr. Murray would interview bricklayers, plasterers, and joiners at the offices of Mr. John E. Ridgway, 22, Henrietta-street, Covent Garden, London, over 1,500 men and youths arrived outside the offices and clamoured to gain admission. A large number of those who put in an appearance seem to have misread the advertisement. They appear to have been under the impression that the Master Builders' Association of New South Wales were prepared to pay the passage of the applicants willing to go out there. The consequence was that there was much disorder, and a large number of police had to be requisitioned to pacify the crowd. The applicants were then formed into a queue, and they were allowed to enter the offices in batches to interview Mr. Murray. An official at the offices, in an interview, said that Mr. Murray had come over on behalf of the Master Builders' Association of New South Wales to point out the dearth of labour in these particular branches of labour. The Labour Government some time ago appointed a Royal Commission to inquire into the shortage of labour, and before this Commission the master builders gave sworn evidence of the scarcity of artisans which had been growing steadily worse for about eighteen months. The members of the Masters' Association in Sydney alone wanted 172 bricklayers, 57 masons, 135 carpenters and joiners, 19 plasterers, 31 plumbers, and a large number of painters, electricians, bricklayers, etc. Altogether Sydney alone could do with at least 3,000 artisans. The passage will only cost about 16d. There is some talk of the State Governments granting a reduction in the passage, but that has not come about yet.

Irrigation in New South Wales.

The most important irrigation scheme yet undertaken in Australia, and one of the greatest in the world, is known as the Burrenjohnk (a corruption of the aboriginal word Burrenyak) in New South Wales. It is being carried out under the auspices of the Government, and is so far advanced that the first section of 70,000 acres has been subdivided, and will be thrown open to settlers in the early part of next year, when a big immigration campaign will be inaugurated by the New South Wales Government in Europe and America. One of the contractors for this work, Mr. J. Symons, of the firm of Messrs. Lane & Peters, is now in London in connexion with this and other Australian contracts which his firm has in hand, and when seen by a *Morning Post* representative he explained that the whole scheme when fully completed will involve an expenditure of over 3,000,000l., will irrigate 1,250,000 acres, and will provide settlement areas for 40,000 persons. The irrigation works include the erection of a barrage, which, it is said, will be one of the largest in the world. It will be 232 ft. high, and will form a reservoir of 43 miles long and 200 ft. deep, with a total capacity of 32,000 million cubic ft. of water. There is a river running for 20 miles through the estate, which will be available for irrigation purposes, and this will be supplemented by 50 miles of canals, now in course of construction. The barrage is being constructed of concrete and plumbstone, the concrete being made on the spot. Nearly all the work, including excavation, concrete manufacture, and the construction of the barrage, is performed with the aid of an immense electric-power plant, and operations are carried on unceasingly day and night. A large part of the area is in mountainous country, and before the contractors could begin operations at the site of the dam they had to construct a narrow-gauge line for 28 miles through the mountains from the nearest railway line. The minimum rate of wages is 8s. 6d. per day of eight hours for common labour and 9s. 6d. per day for skilled

labour, with proportionately higher rates for professional work.

Hotel, Brazil.

H.M. Consul at São Paulo (Mr. D. O'Sullivan-Bearre) reports that a company has been formed at that place, with a capital of 5,000,000 milreis (about 553,000l.), for the purpose of erecting in the city a large hotel with all modern improvements. All material required for the construction and equipment of the hotel may be imported free of duty. The name of the company may be obtained from British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Improvement Works, Calcutta.

The Director-General of Commercial Intelligence of British India has forwarded a copy of the Calcutta Improvement Act, 1911, providing for the improvement and expansion of Calcutta by opening up congested areas, laying out or altering streets, providing of spaces for purposes of ventilation or recreation, and demolishing or constructing buildings, etc. The Board of Trustees is to be set up to carry out the provisions of the Act. The copy of the Act may be seen by British firms at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Building in the Netherlands.

The *Staatscourant* of November 25 notes that (1) the provincial authorities of Groningen have decided to erect a hospital for mental cases at Het Bolderiep, in Groningen, at a cost of 250,000 guilder (20,833l.); (2) the municipal authorities of Utrecht have decided to erect a pharmaceutical laboratory at Catharijnesingel, at a cost of 198,000 guilder (16,500l.).

TRADE CATALOGUES.

We have received from the Carron Company a pamphlet illustrating a new series of fires which they have recently put on the market. The "Abbey," as the new series is termed, comprises eight distinct designs, with their different sizes, afford a selection of twenty-one varieties. All parts of "Abbey" fires are interchangeable, and connexion can be made either right or left hand as desired. In most cases a big burner can be fitted. The designs are a distinct advance on the wrong-headed old-fashioned iron fire, and justify the price of the firm in going to the expense of entirely new patterns.

Messrs. Young & Marton, of Calcutta Works, Stratford, London, E., send us a prospectus containing prices and illustrations of the "Hue" adaptable barless fire. Hitherto the adoption of the increased popular heart-fire has in many cases been hindered by the difficulty of adapting the form to existing grates, entailing, as the temporary removal of the chimney and the scoring of the stove. The "Hue" fire is manufactured specially to suit the area of existing grates, and all that is necessary to ensure a proper fit is to superimpose a template of the existing bottom of the grate. A specially constructed grate, closed pan beneath ensures cleanliness in use. In cases where the existing fire is shallow the firm recommend the use of special deflecting back bricks. These, if inserted in most cases by removing the backs, without the necessity of taking stove or touching the mantelpiece and surroundings. Messrs. Young & Marton manufacture complete suites, complete mantel, stove, and hearth.

Messrs. Siemens Brothers, of 33, Abchurch-lane, London, E.C., send forward us a leaflet for circulation by trade, containing the latest price list of well-known "Tantalum" lamps.

The Asbestos Manufacturers Company, of Caxton House, Westminster, send a pamphlet dealing with asbestos coverings, showing a new roofing and sheet material manufactured by the Asbestos Manufacturing Company, Ltd., of Montreal, Canada, for whom the firm act as sole distributors. It is applied in practically the manner as corrugated iron, and it is said that it is absolutely fire and weather proof, is unaffected by gas, steam, or other acids besides being superior in insulating properties to corrugated iron. Moist conditions of atmosphere, it is said, by assisting the setting of its chief component, hygroscopic, actually improves the material, being concrete in sheet form, is of an unendingly durable nature. Illustrations are from photographs of its application to houses, cold-storage plants, oil storerooms, purifier buildings, and other cases where great desideratum is the maximum of heat and immunity from fire.

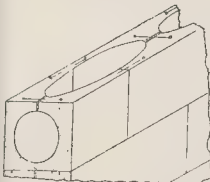
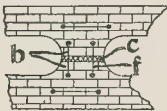
PATENTS.

APPLICATIONS PUBLISHED.*

5,865 of 1910.—Walter Tietze: Door-closing vice.
7,828 of 1910.—Robert Thompson and William Affleck Thompson: Reinforcement of chimneys, ferro-concrete pillars.
10,043 of 1910.—Francis Johnson and Edgar Talles: Machine for mixing concrete, and the like.
21 of 1911.—Samuel Stelling: Chimney-pots covers for preventing down draughts and raising the up draught.
426 of 1911.—Rudolf Hermann McHardy and James McHardy: Casement stay, applicable also to analogous purposes.
611 of 1911.—James Chenhalls: Devices for venting down draught in chimney-pots, chimneys, ventilating-shafts, and the like.
145 of 1911.—John Shanks: Valve fittings for baths, lavatories, and the like.
1,044 of 1911.—Joseph Joss and Josephine: Combination rule, square, bevel, level, rammer, scratch, awl, glass-cutter and the like.
252 of 1911.—Frederick Rickards Bennett and Edward Stephen Cashen: Carriage and or sash windows.
802 of 1911.—Arthur Edwin Bishop: Dust-pan.
264 of 1911.—Henry Hope & Sons, Ltd., and John Walter Hope: Glass rods.
7,775 of 1911.—Arthur Ernest Spreadbury: Ladders, ladders, trestles, or the like.
1,336 of 1911.—Joseph Leslie Musgrave and David Gritall & Co.: Method of installation heating and cooling buildings.
1,265 of 1911.—Friedrich Schofer: Method of obviating cracking and injurious stresses in joined smoke and ventilating chimneys.
7,591 of 1911.—Eugen Frankel: Flushing apparatus.
1,104 of 1911.—Alfred Crane Russell: Connection of stair-treads and the like.
10,086 of 1911.—Adolf Donecker: Process of manufacturing weather-proof coloured gravel for garden paths and the like.

SELECTED PATENTS

7,796 of 1910.—John Ferguson: Walls.
This relates to hollow damp-proof walls which are formed with ribs *b*, projecting from inner sides and insulated by damp-proof material *c*. The ribs may be horizontal or



15,796 of 1910.

vertical, and the bricks or blocks forming them are strengthened by means of bars, clamps, *f*, interlocking keys formed on the bricks. A wall constructed of bricks on one side and on the other, and a wall having both horizontal and vertical passages are shown.

56 of 1910.—Rudolf Sedlacek Blome and Joseph Sinek: Paving.

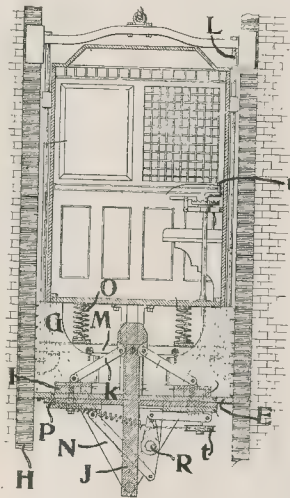
This relates to means for grooving plastic material before it sets to represent block paving and consists in the provision of a die or adjustable in a main frame which extends across the roadway and travels on temporary rails. Rails are laid clear of the road, and thereon is mounted the main frame, which

these applications are in the stage in opposition to the grant of Patents upon can be made

consists of girders and rollers operated by hand gearing. Locking pawls at each end engage notches in the rails. Transverse tracks conforming to the curve of the road are carried on the inner faces of the girders by screws, and support an auxiliary frame. The die carrier slides in this and carries at the lower end a die frame, which is pressed downwards by springs. The frame and die are raised and lowered by racks and pinions operated by hand-wheels and controlled by a hand-brake.

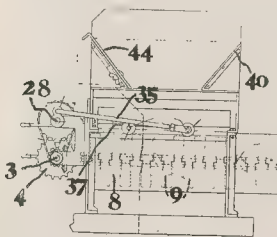
16,534 of 1910.—Carlos John Brookings: Catch gear and safety retaining-mechanism for lifts.

This relates to catch-gear and safety retaining-mechanism for lifts, and consists in the provision of a pair of wedge-operated pincer grips carried by the cage, which are controlled by the vertical movement of a skeleton framework which surrounds the cage, and are adapted to engage the corrugated guide bars in the event of the hoisting-cable breaking, or by the actuation of a hand-crank in the cage. To the cage floor is rigidly attached a platform *E*, on which are pivotally mounted the gripping-jaws *G*. Wedges *I* sliding on the



16,534 of 1910.

platform *E* between the inner arms of the jaws *G* are connected by toggle links *k* to a vertical bar *J*, which forms part of a skeleton frame *L*, *M*, *N*, surrounding the cage, and supporting it by springs *O*. In the event of the hoisting-cable breaking, the springs *O*



17,084 of 1910.

depress the vertical bar *J* and thrust the wedges *I* between the inner arms of the jaws, causing their outer arms to engage the corrugated guide-bars *II*.

16,835 of 1910.—Glenn Allan: Reinforced concrete.

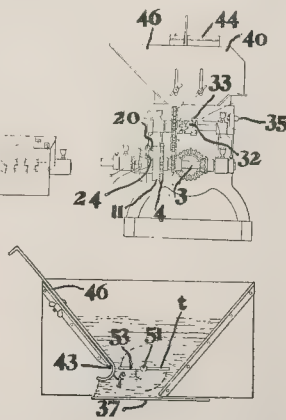
This relates to reinforced concrete, and consists in the provision of flat and angle bars having keyhole slots and notched tie-bars, which engage the straight sides of the slots. The floor and wall connexion is braced, and the corners of the main walls are thickened to form piers.

17,084 of 1910.—Heinrich Ditter: Floor and ceiling blocks.

This relates to interlocking blocks for floors and ceilings wherein the blocks are constructed with stepped grooves *d*, which on assembling the blocks form circular channels beneath the interlocking ribs and recesses for the reception of supporting iron rods *e*.

17,524 of 1910.—Henry Pocock: Apparatus for mixing concrete.

This relates to machines for mixing sand or gravel with concrete, and consists in providing an open-bottom divided hopper with a carriage reciprocating beneath the open bottom, the hopper having two adjustable front plates for regulating the passage of material, which is delivered from the carriage to the mixing-apparatus beneath. The main shaft *3*, mounted on the front of the machine, is driven by hand, or by a pulley fixed thereon, or through a chain-wheel *4* mounted loose thereon and connected to the shaft by a spring clutch inside an angular rim *11* connected to the wheel. The clutch is connected to a hub fixed on the shaft *3*, and has an opening at its upper end into which passes the squared end of an arm *20*, which is connected through a lever to a lever carrying a roller *24*, adapted to be engaged by a conical collar, which revolves with and reciprocates on the shaft *3*, being operated by a lever to lift the roller *24*, and turn the arm *20* to open the spring to clutch the rim *11*. The shaft *3* drives, through bevel-gearing, a shaft *8*, which carries inclined mixing-blades *9*, and a countershaft *28*, through chain gearing and a clutch, one part being loose and the other part pinned on the shaft, and the parts being engaged by a lever *33*, an arm of which has a catch to hold the clutch parts together. The ends of the shaft *28* carry cranks connected to rods *35* fixed to the back axles of the wheels of a reciprocating carriage *37* running on tracks below the mouth of the divided hopper *40*. The front openings of the hopper above the carriage are regulated by adjustable plates *44*, *46*, the plate *46* in the cement hopper being provided with a curved end *f*. In the side of the cement hopper is mounted a shaft *51* operated by connexion to the front axle of the carriage *37*, to oscillate an agitator *53*, the part *t* of which moves forward and downward with the forward movement of the carriage to force cement through the opening *43*. On the return movement of the carriage the cement falls into the mixer and the forward and downward movement of the part *t* carries cement down to fill the opening *43* for the next forward stroke.



17,524 of 1910.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. vii. x.; Public Appointment, xvii.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

DECEMBER 15.—**Sofa**.—New Municipal Building. See Competition News, page 608, November 3.
DECEMBER 21.—**R.I.B.A.** Prizes and Studentships. Work to be sent to 3, Conduit-street, before 4 p.m.
DECEMBER 22.—**Glasgow**.—Design for a Bridge.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 60s. and 20s. are offered. See advertisement in issue of December 24, 1910, for further particulars.
DECEMBER 30.—**Armadale**.—Public hall and offices, to cost 2,500l. Premiums of 15s. and 10s. Open only to architects who were represented on the site on October 12.
DECEMBER 30.—**Welsh Eisteddfod, 1912**.—Designs for WORKMEN'S DWELLINGS.—Prize, 50l. Particulars from Welsh Housing Association, 3, Temple-chambers, E.C.
JANUARY 1, 1912.—**Rochdale Infirmary**.—Extensions.—Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.
JANUARY 6, 1912.—**Bolton**.—Miners' Federation Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 50s. and 25s. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernhough, 7, Fold-street, Bolton.
JANUARY 6, 1912.—**Stafford**.—Public Library.—The Stafford Corporation invite designs for a Public Library. Mr. Henry T. Hare, F.R.I.B.A., assessor. Second and third premiums of twenty and forty guineas. Deposit, 1l. Particulars from Mr. W. Plant, A.M.Inst.C.E.
* JANUARY 8.—**Banbury**.—WORKMEN'S DWELLINGS.—The Banbury T.C. invite designs for workmen's dwellings. See advertisement in this issue for further particulars.
JANUARY 9.—**Spennymoor**.—PUBLIC HALL, etc.—The Spennymoor U.D.C. invite competitive plans and designs for a public hall, market, and offices, etc. Three premiums are offered. See advertisement in issue of December 1 for further particulars.
JANUARY 29, 1912.—**Montevideo**.—Government Palace (premiums, 2,025l. and 850l.) and town improvement scheme (premiums, 1,000l., 640l., and 425l.). Conditions may be seen at the Board of Trade, 78, Broadhall-street, E.
JANUARY 31, 1912.—**Australia**.—Designs for FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 508, November 3.
FEBRUARY 3, 1912.—**Bolton**.—NURSES' HOME at the Infirmary.—Premiums of 30l., 20l., and 10l. Assessor, Mr. John B. Gass, F.R.I.B.A.
FEBRUARY 17, 1912.—**London, E.C.**—New Offices.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity-square, and for laying out remainder of land as a building site. See advertisement in issue of November 24 for further particulars.
May 1, 1912.—**Society of Architects' Travelling Studentship**. Design for a Town Hall, 25s. and medal.
July 1, 1912.—**Dusseldorf**.—A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 28, September 29.
No Date.—**Jordanhill, Glasgow**.—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in Competition News, December 1, page 635.

Contracts

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 8.—**Briggwater**.—ADDITIONS.—For alterations and additions to the Isolation Hospital at the docks. Borough Surveyor, Mr. F. Parr, A.M.Inst.C.E., Municipal-buildings, High-street, Briggwater.
DECEMBER 8.—**Laverockclock, etc.**—HOUSE, etc.—Erection of new farmhouse at Cotta, and new farm steading at Laverockclock. Plans and specifications with Mr. J. Witte, architect, Elgin.
DECEMBER 9.—**Elgin**.—ADDITIONS.—For additions to Elgin Academy buildings. Plans and specifications with Mr. J. Witte, architect.
DECEMBER 9.—**Great Harwood**.—COTTAGES.—Erection of twenty-seven cottages near Glad-

stone-street. Plans and specifications seen, and form of tender from Mr. A. H. Dunkin, Surveyor to the Council, Town Hall, Great Harwood.

DECEMBER 11.—**Leeds**.—CHAMBER.—Construction of an underground transformer chamber at North and South-street. Specification and drawings seen, and form of tender from Mr. H. Dickinson, Manager, 1, Whitehall-road, Leeds.

DECEMBER 11.—**Morecambe**.—RESIDENCE.—Erection of a villa residence in Bare-lane. Plans, specifications, etc., at "Ye Planry," 23, Queen-street. Mr. Albert Gorton, architect.

DECEMBER 11.—**Ossett**.—SHED.—Erection of a shed in Wakefield-road. Specification and drawings seen, and quantities and forms of tender from City Architect, Town Hall, Sheffield.

DECEMBER 11.—**Rugby**.—SHED.—Erection of a corrugated-iron shed in market. Drawings seen, and specification and quantities from Mr. D. G. Macdonald, A.M.Inst.C.E., surveyor.

DECEMBER 11.—**Sheffield**.—SCHOOLS.—For the following works:—Philadelphia Council School, alterations; Tinsley Park Council School, alterations; Carbrook Council School, new playshed, etc. Drawings seen, and quantities and forms of tender from City Architect, Town Hall, Sheffield.

DECEMBER 11.—**Southampton**.—SCHOOL.—Erection of a handcraft and cookery centre, and enlargement of Ascutup School. Plans, specification, and conditions seen, and quantities and forms of tender at the Borough Engineer's Office, Municipal Offices, Southampton. Deposit of 3l. 3s.

DECEMBER 11.—**South Norwood**.—ALTERATIONS.—For structural alterations at Branch School, Cumberlow, South Norwood. Plan at the District School at Anerley. Deposit of 1l. Mr. H. J. Chidcock, Clerk to the Managers.

DECEMBER 12.—**Abercraze**.—STORES.—Erection of stores for the Abercraze Co-operative Society. Specification, on deposit of 5s., from Manager, Co-operative Society, Abercraze.

DECEMBER 12.—**Briddington**.—SCHOOL.—Erection of new buildings in extension of the Grammar School. Drawings and specifications seen, and quantities on deposit of 1s. from the architect, Mr. John Bilson, 23, Parliament-street, Hull.

DECEMBER 12.—**Dowlais**.—INN.—Re-building of the Victoria Inn, for the Pontycyfel Brewery Company. Plans and specification seen, and quantities, on deposit of 1s. from Messrs. Johnson & Richards, architects, Merthyr Tydfil.

DECEMBER 12.—**Dowlais**.—THEATRE.—Erection of an electric theatre for the Victoria Cinema Company Ltd. Plans and specification seen, and quantities, on deposit of 1s. from Messrs. Johnson & Richards, architects, Merthyr Tydfil.

DECEMBER 12.—**Hendon**.—SCHOOL.—For erection of a public elementary school. Mr. James Anderson, Council Offices, Hendon, N.W.

DECEMBER 13.—**Bury**.—SHED.—The Lancashire and Yorkshire Railway invite tenders for the erection of a cotton-shed at Knowley-street Goods Yard. Plans seen, and quantities and specification at the Engineer's Office, Hunt's Bank, Manchester.

DECEMBER 13.—**Keighley**.—CONVENIENCES.—Erection of conveniences in West-lane. The Borough Engineer, Keighley.

DECEMBER 13.—**Salisbury**.—ALTERATIONS.—For sanitary alterations at the police-station. Mr. Albert E. Brookes, County Surveyor, Truro.

DECEMBER 14.—**Teignmouth**.—SCHOOL.—For building a screen to the boys' playshed at schools. Drawings seen, and quantities from Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester. Deposit of 10s. 6d.

DECEMBER 14.—**London**.—POST-OFFICE.—Erection of Barking new post-office. Drawings, specification, and form of contract at Barking Post-office. Quantities and forms of tender, on deposit of 1l. 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

DECEMBER 14.—**Teignmouth**.—POST-OFFICE.—Extension of Teignmouth Post-office. Drawings, specification, and form of contract at Teignmouth Post-office. Quantities and forms of tender, on deposit of 1l. 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

DECEMBER 14.—**Waltham Cross**.—SCHOOL.—The Hertfordshire C.C. Education Committee invite tenders for new school. See advertisement in this issue for further particulars.

* DECEMBER 15.—**Grays**.—SCHOOL.—The Essex Education Committee (Orsett District Sub-Committee) invite tenders for special school. See advertisement in this issue for further particulars.

DECEMBER 15.—**Kendal**.—WALLS.—For removal of earthwork and building of retaining walls in connexion with the widening of Queen's-road. Plans, specification, and general conditions contract seen, and quantities from Mr. F. V. Oxberry, Borough Surveyor, Town Hall, Kendal.

* DECEMBER 15.—**Tilbury**.—MANUAL TRAINING SCHOOL.—The Essex Education Committee (Orsett District Sub-Committee) invite tenders for manual, cookery, and housewifery teaching. See advertisement in this issue for further particulars.

DECEMBER 16.—**Beaminster**.—ADDITIONS.—Erection of additions to the master's house of the Grammar School. Plans and specifications with Mr. Henry H. Hounsell, architect, Bridport.

DECEMBER 16.—**Boxhill**.—SEA WALL, etc.—Construction of a sea wall, slipway, promenade, and other works. Plans seen, and specifications and quantities, and form of tender from Mr. G. Ball, Asson-Minst.C.E., Borough Surveyor, Town Hall, on deposit of 5l.

DECEMBER 16.—**Brough**.—COURTHOUSE, etc.—Erection of a police-station and courthouse. Plans and specification seen, and quantities and forms of tender, on deposit of 1l. 1s., from Mr. J. Watson, quantity surveyor, Cogan-chamber, Hull.

DECEMBER 16.—**Hipperholme**.—ADDITIONS.—For additions to the Wesleyan school. Plans and specifications seen, and quantities from Mr. Joseph F. Walsh, F.S.I., architect and surveyor, 10, Harrison-road, Halifax.

DECEMBER 16.—**Loughrea**.—PUMP-HOUSE.—Erection of a new pump-house, supplying water to the erection of a cottage and homestead. Plans and specification by Mr. F. Bergin, B. 36, Westmoreland-street, Dublin. Deposit of 1l.

DECEMBER 16.—**Newport, Mon.**—COTTAGE, etc.—For the erection of a cottage and homestead on Holding Henlye No. 1. Plans and specification with Mr. C. Reginald Harding, County Land Agent, County Council Offices, Newport, Mon.

DECEMBER 16.—**Shoreham-by-Sea**.—SCHOOLS.—Erection of schools. Plans and specification seen, and quantities from Mr. A. W. Nye, M.S.A., Town Hall, Shoreham-by-Sea, Sussex. Deposit of 1l. 1s.

DECEMBER 16.—**Tattenhall**.—SCHOOL.—Erection of a new Council school. Plans and specifications from Mr. H. Bewick, F.R.I.B.A., County Architect, Newgate-street, Chester. Quantities on deposit of 1l.

DECEMBER 16.—**Earlestone**.—HOUSES.—Erection of four houses at Bank Top. Plans and quantities from Messrs. John Barton & S. architects and surveyors, Halifax-road, Dewsbury.

DECEMBER 18.—**Banbury**.—EXTENSIONS.—Erection of the fire-resisting floors, etc., in connexion with the alterations and extension of Central Telephone Exchange, Rose-street. Drawings, specifications, and conditions of contract at H.M. Office of Works, 8, Parliament-square, Edinburgh; or at H.M. Office of Works, G.P. Glasgow. Quantities and forms of tender at H.M. Office of Works, 8, Parliament-square, Edinburgh. Deposit of 1l.

DECEMBER 18.—**Old Trafford**.—EXTENSIONS.—For the extension of the Technical Institute, Trafford-road. Plans seen, and quantities from the architects, Messrs. John Bowden & Co., Ridgefield, Manchester. Deposit of 3l. 8s.

DECEMBER 18.—**Sheerness**.—NEW QUARTERS.—Erection of 100 Married Soldiers' Quarters. Sheerness Garrison at New Barracks, in Eastern Command. Plans, specification, and conditions of contract at the Barrack Construction Office, Sheerness Garrison; and at the office of the Director of Barrack Construction, 80, Pall Mall, London, S.W. Quantities from Director of Barrack Construction. Deposit 10s.

DECEMBER 18.—**Stevenage**.—FIRE-STATION.—Erection of a fire-station. Plans, specification, and form of contract, on deposit of 10s. from Mr. Wm. Onslow Times, Clerk to Council, Council Offices, Stevenage, Herts.

DECEMBER 19.—**Martin**.—CONVENIENCES.—For the erection of a women's conveniences at the Martin's Hill Recreation ground. Specification and details at the Borough Engineer's Office. Deposit of 10s.

DECEMBER 20.—**Barrow-in-Furness**.—Construction of new conveniences in Hindpool and Salt-house-road, and extension of existing conveniences. Plans and specifications and quantities from Borough Engineer and Surveyor, Town Hall.

DECEMBER 20.—**Oldham**.—SHOPS.—Erection of a new shop at lock-up, Victoria Market Hall. Plans and specifications seen, and quantities and forms of tender at Borough Surveyor's Office.

BUILDING—continued.
he date given at the commencement of each graph is the latest date when the tender, or names of those willing to submit tenders.

DECEMBER 20.—**Tydesley, SCHOOL.**—Erection of an elementary school. Plans seen, and notices from the County Architect, Mr. Henry Hor, 16, Ribblesdale-place, Preston. Deposit of 11. 1s.

DECEMBER 22.—**Birmingham.**—S.W. Commissioners of H.M. Works and Public Buildings invite tenders for construction of a way at new Parcel Office. See advertisement in this issue for further particulars.

DECEMBER 22.—**Kendal.**—INSTITUTE.—For erection of an extension to the Museum and Museum. Plans and specifications seen, and quantities in Mr. S. Shaw F.R.I.B.A., architect, Kendal.

DECEMBER 23.—**London.**—HOSPITAL.—For connecting a new hospital and other work at (ines-road, Hounslow. Drawings, specifications, and form of contract seen, and quantities in form of tender from Mr. H. R. Peake, 213, Chiswick-road, Hounslow, on deposit of 11. 1s.

DECEMBER 23.—**Macclesfield.**—HOME.—Erection of a new house of 4 rooms, kitchen, bathroom, and an extension of the infirmary, wings and specifications seen, and quantities in Messrs. Whitaker & Bradburn, 19, King Edward-street, Macclesfield, on deposit of 11. 1s.

DECEMBER 30.—**Aston.**—EXTENSION.—Erection of an extension to the electricity-station in western-street. Forms of tender and quantities in the quantity surveyor, Mr. Christopher C. 33, Newhall-street, Birmingham. Deposit of 11. 2s. Drawings with the architects, Messrs. Hurst, Harrison & Cox, Council-chambers, 109, more-row, Birmingham.

DECEMBER 30.—**Birmingham.**—ELECTRICITY.—The Electric Supply Committee invite tenders for erection of an extension of the station Chester-street, Aston. See advertisement in this issue for further particulars.

DECEMBER 30.—**Bury, Devon.**—REBUILDING.—rebuilding Elbury farm buildings. Plans in Messrs. B. H. Harbottle & Son, architects, Bury-chambers, Bury.

DECEMBER 30.—**Belturbet.**—HOUSE.—For alterations and additions to dwelling-house. Plans and specifications from Mr. P. J. Brady, architect, Broomfield House, Ballyhaise.

JANUARY 5, 1912.—**Edenbridge.**—SPECIAL JUNCTS BUILDING.—The Kent Education Committee invite tenders for special subjects building. See advertisement in this issue for further particulars.

JANUARY 5, 1912.—**Milnrow.**—SCHOOL.—Erection of an elementary school at Milnrow, near Blythdale. Plans seen, and quantities from Mr. W. J. Little, 16, Ribblesdale-place, Preston. Deposit of 21.

JANUARY 5, 1912.—**Welling, Kent.**—SCHOOL.—The Kent Education Committee invite tenders for new Council school at (Bexley) Welling. See advertisement in this issue for further particulars.

JANUARY 8, 1912.—**Loose, Kent.**—SCHOOL.—The Kent Education Committee invite tenders for new Council school. See advertisement in this issue for further particulars.

o DATE.—**Audenshaw.**—LEATHER WORKS.—Erection of new leather-dressing works. Messrs. H. G. Gibson, architects and surveyors, under-Lynde.

o DATE.—**Mirfield.**—PAVILION, ETC.—Erection of a small pavilion and the laying-out of a (ling green at Spring Head, for the Nubling Men's Club and Institute. Mr. J. W. Rows, architect, Royd-terrace, Mirfield, near Leeds.

o DATE.—**Silksworth.**—PICTURE HALL.—For erection of a picture hall at Silksworth, near once to Mr. J. Newton Fatkin, architect, 1, St. Nicholas-buildings, Newcastle.

o DATE.—**South Bank, Yorks.**—SCHOOL.—Erection of a school in Victoria-street. Messrs. M. Bottomley & Wellburn, architects, 28, art-road, Middlesbrough.

o DATE.—**Southend.**—ADDITIONS, ETC.—Erection of two additional wards, alterations, and additions to nurses' quarters at the Southend Victoria Hospital. Architects, Messrs. Lees & Harris, Clarence-chambers, Southend.

ENGINEERING, IRON, AND STEEL.

DECEMBER 11.—**Lancaster.**—BRIDGE.—For the steel girders, sinking caissons, etc., in connexion with a new bridge across the River Lune. Specifications, quantities, and particulars from Mr. Arthur G. Bradshaw, Borough Surveyor, Town Hall, Lancaster.

DECEMBER 14.—**Barrow-in-Furness.**—LIGHTING.—For installation of electric light at the central fire-station, Abbey-road. Plans at the Electricity Works, Buccleuch-street, and specifications from the Borough Electrical Engineer. Deposit of 11. 1s.

DECEMBER 15.—**Ennis.**—GASHOLDER.—For supplying and fixing at the gasworks a new gas-holder in steel tank. Plans seen, and specification from the Engineer, Mr. H. Hawkins, C.E., M.S.C.I., Moyola Villa, Lansdowne, Limerick.

DECEMBER 15.—**Killala.**—BRIDGE.—For reconstruction of the Glen River Bridge. Specification with the County Surveyor, Ballina. Form of tender from Mr. J. J. Kelly, Secretary, County Council, Courthouse, Castlebar. Deposit of 51.

DECEMBER 18.—**Damerham.**—BRIDGE.—For reconstruction of Compass Bridge. Plan and specification, and general conditions from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 21. 2s.

DECEMBER 21.—**Laris Colne.**—BOREHOLE.—For sinking a borehole for water supply. Specification and schedule from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham.

DECEMBER 21.—**London.**—EXTENSION.—Extension of the electricity works, East-street, Barking. Plans, specification, and conditions of contract seen, and quantities from Mr. C. Dawson, Surveyor to the Council, Public Offices, Barking, on deposit of 21. 2s.

JANUARY 10, 1912.—**Douglas.**—Isle of Man.—Plans, specification, quantities, and form of tender from Mr. W. H. Blaker, Engineer to the Harbour Board, Coronation-chambers, Douglas, on deposit of 21. 2s.

FURNITURE, PAINTING, MATERIALS, ETC.

DECEMBER 11.—**Portsmouth.**—PAINTING.—For painting the outside of the Council schools during the Christmas vacation. Specification with the Surveyor, Mr. A. H. Bone, Cambridge Junction, Portsmouth.

DECEMBER 12.—**Lewisham.**—PLASTERING.—For replastering the ceilings at the Central Library, High-street, and at the Forest Hill Library, Dartmouth-road. Form of contract at the Town Hall, Catford (Surveyor's department). Specification on deposit of 5s. Mr. Edward H. Oxenham, Clerk to the Committee, Town Hall, Catford, S.E.

DECEMBER 12.—**Sunderland.**—CLEANING, ETC.—For the inside cleaning, etc., of the schools. Specifications seen, and form of tender at the Borough Engineer's Office, Town Hall.

* DECEMBER 16.—**London.**—W.—SHINGLE.—The Paddington B.C. invite tenders for supply of fine crushed Thames or other shingle for alternative periods of one, two, or three years, from January 25 next. See advertisement in this issue for further particulars.

DECEMBER 16.—**Totnes.**—FENCES, ETC.—For erecting fences, and forming footpaths in connexion with the cemetery extension. Plans and specifications with the Borough Surveyor, Mr. W. F. Toltit.

* DECEMBER 18.—**East Ham.**—DEMOLITION.—The East Ham Education Committee invite tenders for the demolition of the old vicarage building, and for removal of the old material. See advertisement in this issue for further particulars.

DECEMBER 20.—**Canterbury.**—PAINTING, ETC.—For distemper, etc., at the city police-station. Mr. A. C. Turley, A.M.Inst.C.E., City Surveyor, Guildhall-street, Canterbury.

* JANUARY 2.—**Wandsworth.**—MATERIALS AND WORKS.—The Wandsworth B.C. invite tenders for execution of works and the supply of materials for a period of one, two or three years, at the option of the Council. See advertisement in this issue for further particulars.

No DATE.—**Kendal.**—PAINTING.—For painting and decorating the interior of 63, High-street. Mr. John Stalker, M.S.A., architect, Kendal.

ROADS, SANITARY AND WATER WORKS.

DECEMBER 9.—**Flixton.**—FLAGGING.—For laying of concrete flags in Flixton-road. Plans seen, and particulars from Mr. A. H. Mountain, A.M.Inst.C.E., Union Offices, Patricroft, near Manchester.

DECEMBER 9.—**Looe.**—SEWERS.—For providing and laying sewers in Middle Market and Buller streets, East Looe. Plans and specifications from the Surveyor, Looe.

DECEMBER 11.—**Leeds.**—ROADS.—For paving and flagging private streets. Drawings at the City Engineer's office, Municipal-buildings. Forms of tender and quantities from the Highways Office, 155, Kirkstall-road, Leeds.

DECEMBER 12.—**St. Denys.**—DRAINS.—For laying storm-water drains. Plans, specification, and conditions seen, and quantities and form of tender at the Borough Engineer's Office, Municipal Offices, Southampton. Deposit of 11. 1s.

DECEMBER 13.—**Isle of Wight.**—CHIPPINGS.—For the supply of 75 tons of granite chippings (1-in. gauge). Tender forms from Mr. H. Eldridge Stratton, Clerk to the Council, R.D.C. Offices, 80, Pyle-street, Newport, I.W.

DECEMBER 14.—**London.**—ROADS.—For the kerbing, channelling, paving, making-up, etc., of Holm-bury-view and Hawkwood Mount, Hackney. Conditions of contract and specifications and plans and quantities, and form of tender from Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Hackney, N.E. Deposit of 11. 1s.

DECEMBER 16.—**Colchester.**—ROAD.—Construction of a new road and other works near the recreation ground. Plans and sections seen, specifications, quantities, and form of tender, on deposit of 11. 1s., from Messrs. Ernest S. Heard & Daniell, surveyors, Head Gate, Colchester.

DECEMBER 18.—**Dover.**—MATERIALS.—For supply of granite, chippings, and quartzite. Forms of tender and specification from Mr. R. E. Knocker, Town Clerk, Town Clerk's Office, Dover.

DECEMBER 18.—**Guildford.**—ROAD.—For extension of Gline-road. Plans and specification seen, and form of tender from Mr. C. G. Mason, A.M.Inst.C.E., the Borough Surveyor, at Tunsate.

DECEMBER 20.—**Isle of Wight.**—DRAINAGE.—For laying of water mains and services on the Gatoombe Estate. Plans, specifications, and conditions seen, and form of tender and quantities, on deposit of 11. 1s., from Messrs. H. W. Daws and Co., High-street, Shanklin.

DECEMBER 21.—**Croydon.**—STREETS.—For the making-up of the private streets. Plans and specifications by the Council's Surveyor, Mr. R. M. Chart, F.S.I., Katharine-street, Croydon. Deposit of 21.

DECEMBER 21.—**Halam.**—SEWAGE.—For laying of pipe sewers, manholes, and the construction of small tanks and filters. Plans at the office of the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham. Specification and quantities on deposit of 21. 2s.

DECEMBER 21.—**Southwell.**—SEWERS.—For laying stoneware pipe sewers, manholes, and construction of small tanks and filters. Plans from engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, and quantities on deposit of 21. 2s.

DECEMBER 21.—**Stockport.**—SEWERAGE.—For excavating and sewerage a portion of Edgeley Fold. Plan, specification, and conditions of contract seen, and quantities and form of tender from Mr. John Atkinson, A.M.Inst.C.E., Borough Surveyor, Town Hall, Stockport.

DECEMBER 28.—**Newmans.**—DRAINAGE.—For the construction of a sewerage system and sewage purification works. Plans seen, and specification from Mr. W. L. Douglass, M.Inst.C.E., District Engineer, District Offices, Hamilton. Deposit of 11.

No DATE.—**Crashead.**—STREETS.—For excavation, concrete, and street formation works at Crashead. Mr. J. W. Routhwaite, A.R.I.B.A., architect, 13, Mosley-street, Newcastle-upon-Tyne.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
CHIEF ARCHITECT	Mile End Old Town Guardians.	2001. per annum.	Dec. 18

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
BEHOUD SITES, TOTENHAM COURT-ROAD AND KING'S CROSS—At the Mart	Butley, Son, & Vine	Dec. 12
ALTS, RATTINGS, BOARDS, TIMBER, Etc.—Great Hall, Winchester House, E.C.	Churchill & Sim	Dec. 13
ASBOD TIMBER—At Woodman-yard, Westow Hill, Upper Norwood	Mosey & Johnston	Dec. 13
BEHOUD SITES, WESTMINSTER—At the Mart	Giddy & Giddy	Dec. 15

METROPOLITAN WATER BOARD.

At the monthly meeting of this Board, held last Friday, the following amongst other matters were dealt with:—

Supply to Hampstead Garden Suburb, etc.—It was decided to expend £1,500 in the erection of pumping-stations at Fortis Green and Cricklewood, and in the laying of mains to improve the supply to the Kidderpore Reservoir Zone, in which are situated the Hampstead Garden suburb and the district of Hendon and Golden's Green. It was also agreed to use Diesel oil-engines in the pumping-stations.

Island Barn Reservoir.—It was reported that Messrs. R. McAlpine & Sons had completed their contract for the construction of the Island Barn reservoir. The tender was for 152,727 l. 7s. 6d.

Quantity Surveyors.—Messrs. Northcroft, Neighbour, & Nicholson were appointed to take all the quantities for the construction of the pumping-station, gas-producer house, and two cottages at the Chingford Reservoir Works.

Works.—Amongst the estimates for new works passed were the following:—3,200 l. for the laying of a main for Old Ford Pumping-station to High-street, Stratford; 1,050 l. for laying mains over Ladbroke-grove road bridge; and 671 l. for the renewal of mains in the New River district.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

November 21.—By W. M. STREET & SON, Nunsfield, Yorks.—Pastoral House Farm, 27½ acres, f. £4,250

November 22.—By G. TROLOPE & SONS, Welford, Northants.—Part of Sulby Hall Estate, 49½ acres, f. 14,145

November 23.—By R. KNIGHT, PRANK & RUTLEY, Grappenhall, Cheshire.—Canal Bank Farm, 6 a. 3 r. 2 p. f. 3,190

November 24.—By T. W. GAZE & SON, Titcham, Norfolk.—Dyson Farm, 75 a. 2 r. 30 p. f. and c. 1,050

November 25.—By KEMSEY, Tattershall, Lincs.—Part of Tattershall Estate, 1,270 acres, f. 22,065

November 26.—By THURGOOD & CO., Haver, Camberland.—Nucleus Farm, 20 acres, f. and c. 775

November 27.—By ELLIOTT, SON, & BOTTEN, Battersea.—Mallinson-rd., Leatherhead-rd., Banbury-rd., Salcott-rd., etc., f. g. rents 771 l. reversion in 70 yrs. 17,985

November 28.—By BLAKE, SON, & WILLIAMS, Croydon.—Leslie Park-rd., f. g. r. 91 l. reversion in 30 yrs. 215

November 29.—By GABRIEL, WHITE, & POLARD, Leyton.—389, Church-rd., f. p. 130

November 30.—By ELLIOTT, SON, & BOTTEN, Ealing.—Castle Bar-hill, Fennyngers, and 1½ acres, f. p. 450

December 1.—By HOLCOMBE, BETTS, & WEST, Regent-st.—58, Margaret-st., beneficial lease for 12 yrs. at 21s. per annum 1,410

December 2.—By OUELLE, MARAS, & BARLEY, Cheltenham, Glos.—Regent-st., Star Hotel, f. and p. 1,000

December 3.—By THURGOOD & CO., Peckham.—Chadwick rd., f. g. rents 301 l. reversion in 41 yrs. 830

December 4.—By FREDERICK WARMAN, Islington.—362, Upper-st. (s.), u. 15 yrs, g. r. 10 l., y. r. 50 l. 235

December 5.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 370

December 6.—By BEARD & SON, Kensal Rise.—College-rd., f. g. rents 321 l., u. 84 yrs, g. r. 21 l. 510

December 7.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 8.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 9.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 10.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 11.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 12.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 13.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 14.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 15.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 16.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 17.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 18.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 19.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

December 20.—By BOREHAM & CO., Tottenham.—31, 33, and 51, Douglass-rd., u. 15 yrs, g. r. 17 l. 10s. 210

Palham, 93, 95, and 97, Wandsworth Bridge-rd. (s.), f., and c. r. 23 l. 275

Sandilands-rd., The Nook, f., y. r. 30 l. 1,200

332, North End-rd. (s.), u. 69 yrs, g. r. 13 l., y. r. 90 l. 1,270

199 and 207, New King's-rd., u. 87 yrs, g. r. 28 l., y. r. 170 l. 315

By VENTON, BULL, & COOPER, Wandsworth.—Bur-rd., f. g. rents 161 l. reversion in 53 and 51 yrs. 1,745

Marl-st., f. g. rents 83 l. 10s. reversion in 35 yrs. 205

Old Port.—Laher-rd., f. g. rents 101 l. reversion in 52 yrs. 1,385

Camberwell.—Cator-st., f. g. rents 63 l. 16s. reversion in 56 yrs. 155

Hornsey.—Westfield-rd., f. g. r. 71 l. 7s. reversion in 56 yrs. 1,030

Boyton-rd., f. g. rents 52 l. reversion in 56 and 57 yrs. 970

Harting-rd., f. g. rents 45 l. reversion in 56 and 57 yrs. 890

St. Mary's-rd., etc., f. g. rents 42 l. reversion in 56 yrs. 340

Silvertown.—Constance-st., f. g. rents 171 l. 2s. reversion in 57 yrs. 180

Notting Hill.—Crescent st., f. g. r. 10 l. reversion in 51 yrs. 125

Lee.—Summerfield st., f. g. rents 61 l. 6s. reversion in 49 yrs. 1,250

Stoke Newington.—Ayrshire-rd., f. g. rents 55 l. 10s. reversion in 68 yrs. 2,530

Church-st., etc., f. g. rents 114 l. 5s. reversion in 53 yrs. 340

West Norwood.—Thurlo-hill, f. g. rents 151 l. 10s. reversion in 58 yrs. 210

Holloway.—Cromwell-rd., f. g. rents 11 l. reversion in 52 yrs. 2,960

Brookside-rd., f. g. rents 153 l. reversion in 52 yrs. 115

Stratford.—Forest-lane, f. g. r. 51 l. 5s. reversion in 60 yrs. 185

Peckham.—Staveley-rd., f. g. r. 71 l. 5s. reversion in 33 yrs. 900

Clapham.—Roundell-st., f. g. rents 60 l. reversion in 53 yrs. 1,370

Battersea.—Brumwell-st., f. g. rents 80 l. reversion in 53 yrs. 330

Queen's-rd., etc., f. g. rents 161 l. reversion in 53 yrs. 1,015

Stockwood-st., f. g. rents 54 l. reversion in 55 yrs. 350

Lothian.—Adis-st., f. g. rents 271 l. 10s. reversion in 57 yrs. 400

Hurth.—Bertman-st., f. g. rents 18 l. reversion in 63 yrs. 1,450

Bristol.—Wingmore-rd., f. g. rents 46 l. reversion in 54 yrs. 110

Kenilworth.—Hadley-st., f. g. r. 31 l. reversion in 47 yrs. 900

Derford.—Ainslie st., f. g. rents 42 l. reversion in 54 yrs. 33,230

November 28 to 30.—By TYLER & CO., Bradford and Shipley, Yorks.—Part of the Rose Estates, 130 acres, including three hotels, etc., f. 11,500

November 29.—By RUSHWORTH & BROWN, New Bond-st. 19 & 14, Brook-st. (business premises), corporation lease, g. r. 51 s. 4d., y. r. 460 l. 2,290

By HOBSON, RICHARDS & CO., Croydon.—124, George-st. (s.), and range of stabling, u. 57½ yrs, g. r. 30 l. 5s. e. r. 25 l. 6,650

By HENRY HOLMES & CO., Easton-rd., Nos. 298 and 304, also 7 to 11, Eden-st., f. y. r. 340 l. 1,425

Tottenham Court-rd.—39, 43, and 45, Grafton-st., f. y. r. 255 l. 10

By ROBERT TIDY & SON, Paddington.—124, Regent-st. (s.), u. 55½ yrs, g. r. 81 s. 8s. e. r. 31 l. 800

Stoke Newington.—80 and 82, Green lanes (s.), u. 51½ yrs, g. r. 10 l. y. r. 115 l. 1,185

By WAGSTAFF & SON, Islington.—185, Essex-rd. (s.), f. y. r. 75 l. 100

By C. P. WHITELEY & SON, West Croydon.—Westbury rd., f. g. r. 41 l. 15s. reversion in 38 yrs. 325

Clapham.—25, Sandmere-rd., u. 68 yrs, g. r. 81 l. 10s. y. r. 40 l. 415

By N. EASTON & SON, Cotingham, Yorks.—Grass-close, 6 a. 5 r. 30 p. f. 780

By CHARLES HALL, Stockwell.—Andalus-rd., Mission Hall, u. 63 yrs, g. r. 71 l. 185

November 10.—By C. C. & T. MOORE, Mile End.—220 to 226 (even), Devonshire-st. 1 to 8, Mays-buildings, f. w. r. 244 l. 8s. 900

By BOY, 12, Eglington-rd., u. 50 yrs, g. r. 54 l., y. r. 52 l. 200

By BOY, GAP, & CO., Walthamstow.—20, Devonshire-rd., f. p. 300

By CHAS. CANET, Camberwell.—60 and 71, Vestry-rd., u. 65 yrs, g. r. 10 l., y. r. 88 l. 8s. 375

By FISHER, STANHOPE, & CO., Stoke Newington.—29, Heathland-rd., u. 64 yrs, g. r. 9 l., e. r. 48 l. 400

63, Farnley-rd., u. 33 yrs, g. r. 10s, y. r. 30 l. 280

72, Kynaston-rd., u. 33 yrs, g. r. 6 l., y. r. 12 l. 225

Walthamstow.—15, Erskine-rd., u. 78 yrs, g. r. 31 l., y. r. 31 l. 4s. 155

By NEWBOLD & SHEPHERDS, Dalston.—84, 84A, and 86, Mortimer-rd., u. 63 yrs, g. r. 15 l. 15s. y. and e. r. 104 l. 600

Caledonian-rd., u. 33 yrs, g. r. 20 l., y. r. 30 l. 620

Holloway.—21, Mercer's-rd., u. 56 yrs, g. r. 12 l. 15s. e. r. 80 l. 500

Enfield.—11 and 43, Gordon-rd., f. w. r. 33 l. 2s. 4d. 4s. and 50, Holly-rd. and 2 plots, f. w. r. 58 l. 15s. 210

Tottenham-rd., Providence Cottages, f. u. r. 24 l. 11s. 570

1 and 2, Marina-villas, f., w. r. 41 l. 12s. 240

Victoria Park.—4 and 6, Risholme-st., f., w. r. 67 l. 12s. 230

By T. D. & A. R. PEACOCK, Myrtlehouse, 5, John-st., w. r. 134 l. 8s. 4,370

Edgware-rd.—No. 91, also 13, Torrington-mews, u. 8 yrs, g. r. 18 l. 6s., y. r. 170 l. 360

Hackney.—188, Amburst-rd., u. 55 yrs, g. r. 31 l., y. r. 50 l. 1,503

Marlybone. 5 and 6, Frederick-mews, u. 8 yrs, g. r. 9 l., y. r. 60 l. 800

By GUTHRIE & MORRIS, Woodford.—Groves-rd., f. g. r. 61 l. reversion in 80 yrs. 145

Wanstead-lane.—43, Cleveland-rd., f., y. r. 26 l. 315

By STRIMMON & SONS, Chiswick.—25 to 31, Belmont-gr., u. 56 yrs, g. r. 128 l. 4s., w. r. 913 l. 18s. 4,270

Barnes.—2, 28, 31, and 33, Eleazer-gr., u. 57 yrs, g. r. 16 l., w. r. 100 l. 28 s. 360

Spaldfields.—7 and 9, Brushfield-st. (s.), f., y. r. 120 l. 1,503

Southwick.—1-2, Borough High-st. (s.), f., y. r. 30 l. 800

December 1.—By DRIVERS, Caledonian-rd.—18, Wellington-rd., u. 60 yrs, g. r. 10 l. 10s., y. r. 15 l. 110

By W. A. HEAD, Pimlico.—7 and 9, Alderney-st., u. 21 yrs, g. r. 14 l., y. r. 14 l. 360

South Lambeth.—40, Thorne-rd., u. 49½ yrs, g. r. 6 l., p. 340

By JONES, SON, & DAY, Poplar.—Gough-st., Waterloo Hero p.h., lease for 18 yrs. at 80 l. with goodwill and possession 1,085

Stepney.—135, White Horse-st. (yard), f., w. r. 84 l. 625

Poplar.—Greenfield-st., yard and premises, f., w. r. 28 l. 160

Lincoln.—Willow-row, stabling, f., y. r. 17 l. 220

East Ham.—1, Vicarage-lane (s.), f., p. 150

Edmonton.—39, Rosebery-rd., f., w. r. 20 l. 16s. 100

Leyton.—45, Farmer-rd. (s.), u. 71 yrs, g. r. 11 l., e. r. 35 l. 100

By STOCKER & ROBERTS, Lee. 121, High-rd., u. 40 yrs, g. r. 9 l., e. r. 45 l. 400

Contractions used in these lists.—E.g. for freehold ground-rent; L.g. for leasehold ground-rent; i.g. for improved ground-rent; g. r. for ground-rent; p. for rent; f. for freehold; a. for copyhold; l. for leasehold; p. for u. for unexpired term; p. a. for per annum; y. for years; la. for lease; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; or. for oratory; av. for avenue; g. for garden; yd. for yard; ur. for grove; h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

* * * Our aim in this list is to give, as far as possible, the average prices of materials, and necessarily the lowest quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River. £ s. d.
Best Stocks 13 0 0
Picked Stocks for Facings 2 7 8

Per 1000, Delivered at Railway Depot. £ s. d.

Flettons 1 10 6
Best Blue Pressed 3 15 0
Best Red Pressed 4 0 0
Best Blue Pressed 4 0 0
Best Red Pressed 4 0 0

GLAZED BRICKS £ s. d.

Best White 13 17 6
Eggs and Salt 17 17 6
Glad. Str'ch'rs 11 7 6
Ends 17 17 6

Double Headers 13 17 6
One Side and two 17 17 6
Two Sides and 18 17 6
Quoins, Bullnose, 18 17 6
and ½ in. Flats 14 17 6
Splays & Squins 16 17 6

D'ble Surchers 16 17 6
Second Quality £1 10s. per 1000 less than best.

Thames and Pit Sand s. d.
6 s. 9 per yard, delivered.

Thames Ballast 6 s. 9 per ton, delivered.
Best Portland Cement 30 0 per ton,
Best Ground Blue Lias Lime 19 0 per ton,

NOTE.—The ordinary charge for sacks is exclusive of the ordinary charge for sacks.

Grey Stone Lime 13s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at dry dep.

STONE.

Per Ft. Cube.

BATH STONES—delivered on road waggons, s. d.
Paddington Depot 1 6 0
Do. do. delivered on road waggons, Nine Elms Depot 1 8 0

PORTLAND STONE (20 ft. average)—
Brown Whitbed, delivered on road waggons, Paddington Depot, Nine Elms Depot, or Pimlico Wharf 2 3 0

White Bashed, delivered on road waggons, Paddington Depot, Nine Elms Depot, or Pimlico Wharf 2 4 0

Per Ft. Cube, delivered at Railway Depot. s. d.

Ancaster in blocks. 1 10 0
Closeburn Red 1 6 0
Freestone in blocks 1 10 0
Red Mansfield 2 4 0

Darley Dale in 2 4 0
Freestone 2 4 0
Talcure & Gwesp 2 8 0

Red Coral in 2 3 0
Stone 2 3 0

STONE (Continued).

STONE—Robin Hood Quality.	
Per Ft. Cube, Delivered at Railway Depot.	s. d.
Delivered random blocks	2 10
Per Ft. Super, Delivered at Railway Depot,	
sawn two sides landings to sizes (under 2 super.)	2 3
rubbed two sides ditto, ditto	2 6
rubbed two sides slabs (random sizes)	0 11 1
2 1/2 in. sawn one side slabs (random sizes)	0 7
2 1/2 in. ditto, ditto	0 6
YONG.	
Per Ft. Cube, Delivered at Railway Depot.	
Delivered random blocks	3 0
Per Ft. Super, Delivered at Railway Depot,	
sawn two sides landings to sizes (under 40 ft. super.)	2 8
rubbed two sides ditto	3 0
rubbed two sides slabs (random sizes)	1 2
sawn two sides slabs (random sizes)	3 0
self-faced random flags	0 5

SLATES.

Per 1000 of 1800 at Railway Depot.	s. d.
best blue	20x10bestEurka
gor	13 2 6 unfading green
ditto	13 17 6 20x15 ditto
1st quality	13 10 0 18x10 ditto
2nd	13 0 0 16x8 ditto
3rd	13 5 0 20x10 permanent
4th	13 10 0 18x10 ditto
5th	13 15 0 18x10 ditto
6th	12 12 6 16x8 ditto
7th	6 12 6 16x8 ditto

TILES.

At Railway Depot.	s. d.
Best "Hartshill"	s. d.
(per 1000)	42 0
Do. plain	42 0
Do. pressed	47 6
Do. Ornamental	50 0
Do. Hip	40 0
Do. Valley	3 6
Do. Staffordshire (Hanley)	42 6
Do. Bed or Brindled	42 6
Do. Hand-made sand	45 0
Do. fac'd (per 1000)	45 0
Do. fac'd (per doz.)	4 0
Do. Valley (per doz.)	3 6

WOOD.

BUILDING WOOD.	At per standard.
best 3 in. by 11 in. and 4 in.	s. d.
9 in. and 11 in.	14 0 0
best 3 by 9	13 10 0
best 2 1/2 in. by 7 in. and 8 in.	11 10 0
best 2 1/2 by 6 and 8 by 5	10 0 0
seconds	1 0 0
3 seconds	1 0 0
4 in. and 2 in. by 6 in.	9 10 0
4 in. and 2 in. by 5 in.	9 10 0
Sawn Boards	1 0 0
and 1 1/2 in. by 7 in.	10 0 0
over best midding Danish	5 0 0
oil (average specification)	5 10 0
all timbers	4 10 0
1 timber (6 in. to 8 in.)	3 10 0
dash balls	2 12 6
pine timber (30 ft. average)	5 5 0

JOINERS' WOOD.	At per standard.
Sea: first yellow deals,	24 10 0
n. by 11 in	25 10 0
n. by 9 in	23 10 0
n. by 8 in	21 10 0
n. yellow deals, 3 in. by 11 in.	19 0 0
" "	

HAVERFORDWEST.—For the rebuilding of premises in Dew-street. Messrs. D. E. Thomas & Son, architects and surveyors, Haverfordwest.—
W. Watts £835 W. Reynish £70
S. J. Rogers 787 T. Barnes, Hazel-
D. Evans 785 beach, Neyland* 715

HOOLE.—For erection of a new Council school for Cheshire County Council. Messrs. J. H. Davies & Sons, architects, 14, Newgate-street, Chester. Quantities by architects:
J. G. Davies & Co. £1,119 J. Mayers, Son, & Co. £3,911
P. Williams 1,080 McLennan Bros 3,890
M. Browne 3,960 Nixon 3,783
W. Storrs, Sons, & Co. 80 0 0 Matthews, Nant-
Co. 3,939 wich 3,328
* Recommended for acceptance.

IMMINGHAM.—For construction of stoneware sewers, temporary pump well, and engine-shed. Mr. A. Hobson, engineer, 198, Legsbay-avenue, Grimsby. Quantities by the engineer:—
W. B. Whitton £333 0 2 C. Whitaker £280 0 0
W. Church 283 16 3 Pettifer & Stain-
T. Roper & Sons, Ltd. 273 8 3 ton, Imming-
hem* 257 0 0

ISLEWORTH.—For alterations and improvements at the public hall.
Eldridge & Sons £84 0 0 T. J. Hosman £72 11 6
Dunn & Son 83 12 6 A. Wellman 72 11 9
W. J. Wilkinson 81 0 0 H. Morgan 67 10 0
W. Lacey 81 0 0 Wills & Son 63 10 0
Thakker & Son 80 0 0 Whitton* 63 10 0
Hicks & Son 78 15 0

LEEK.—For sundry works at the coffee tavern, Catle Market. Mr. W. E. Beacham, Surveyor, Town Hall, Leek, Staffs. Quantities by the Surveyor:
J. Heath & Sons £83 0 0 T. Grace* £72 0 0
S. Salt 76 11 6 J. Heath 69 1 2
G. Hine 72 6 3 R. A. Crombie 57 0 0
* All of Leek.

LONDON.—For erection of a secondary school for boys at Craster road, Norwood, for the London County Council.

J. Appleby & Sons	£26,758 0 0
W. Smith & Son	35,748 0 0
W. King & Son	23,369 0 0
G. Parker & Sons	25,370 0 0
J. Garrett & Son	25,388 18 10
Thomas & Edge	24,387 0 0
W. Downs	24,197 0 0
C. Wall, Ltd.	33,884 0 0
Kirk & Randall	23,680 0 0
J. Marshall & Sons	23,174 0 0
J. Smith & Sons, Ltd.	23,322 0 0
T. D. Leng	23,321 0 0
Holliday & Greenwood, Ltd.	23,392 0 0
Patman & Fotheringham, Ltd.	23,283 0 0
G. E. Wallis & Sons, Ltd.	22,887 0 0
J. & C. Bowyer, Ltd.	22,883 0 0
Rowley Bros.	22,355 0 0

[The Architect's estimate, comparable with the tenders, is £22,654.]

LONDON.—For redividing rooms E and F in the boys', girls', and infants' departments at the "Whitlington" School, Islington, for the London County Council.

Brand, Pettit, & Co.	£1,168	McCormick & Sons, Ltd.	£865
J. Garrett & Son	1,094	W. Lawrence & Son	840
Holliday & Greenwood, Ltd.	974	McLaughlin & Harvey, Ltd.	815
Rowley Bros.	918	H. L. Holloway	800
A. E. Symes	897		

LONDON.—For redividing rooms A, B, and C in the boys' department, and rooms C, D, and E in the girls' and infants' departments at the Johanna-street School, Lambeth, for the London County Council:—
J. Garrett & Son £1,050 0 0 T. D. Leng £773 0 0
Courtney & Fair 942 5 W. Lawrence & Son 756 0
bairn, Ltd 942 5 Lathey Bros. 732 0
Holliday & Greenwood, Ltd. 854 0 Lole & Co 728 0
W. Smith & Son 821 0 W. Johnson & Co., Ltd. 725 0
J. & C. Bowyer, Ltd. 777 0 H. L. Holloway 720 0

LONDON.—For the supply, etc., of the machine-shop tools required for the tramway permanent-way depot at Battersea-bridge and Leven-road, Poplar, for the London County Council:—

Tangyes, Ltd.	£3,230 5
Pollock & McNab, Ltd.	2,494 10
Buck & Hickman, Ltd.	2,340 2
Judson Jackson Co.	1,711 18
J. Holroyd & Co., Ltd.	1,421 10
C. H. Caton & Co., Ltd.	1,420 0
Greenwood & Batley, Ltd.	365 0
W. B. Haig & Co., Ltd.	51 17

LONDON.—For alterations at the Islington fire-station, for the London Council Council:—
H. L. Holloway £788 W. Johnson & Co., Rowley Bros. 694 Ltd. 540
Leslie & Co., Ltd. 678 W. Downs 595
J. & C. Bowyer, Ltd. 674 Higge & Hill, Ltd. 595

LONDON.—For erection of a secondary school for girls, Highgate-road, N., for the London County Council:

J. Allen & Sons, Ltd.	£27,444 0 0
C. Miskin & Sons	27,183 0 0
Treasure & Sons, Ltd.	27,040 0 0
Holliday & Greenwood, Ltd.	25,381 0 0
Perry & Co. (Bow), Ltd.	25,267 0 0
E. Lawrence & Sons, Ltd.	25,047 0 0
Ford & Walton, Ltd.	24,944 17 3
G. Godson & Sons	24,631 0 0
Rowley Bros.	24,433 0 0
J. & C. Bowyer, Ltd.	24,099 0 0
Patman & Fotheringham, Ltd.	23,923 0 0
McLaughlin & Harvey, Ltd.	23,689 18 1

[The Architect's estimate, comparable with the tenders, is £24,900.]

LONDON.—For supplying and erecting a double-decker steam-pipe oven at the Cornwall-road workhouse, Upper Holloway, for the Guardians of St. Mary, Islington. Mr. Edmund J. Harrison, architect, 9, Gray's Inn-square, Holborn:—
Moorewood & Co. £380 H. Heaton £235
W. F. Mason, Ltd. 380 A. Hunt, Ltd., Milton Engineering Works, Perkins 307 Leicester* 230
J. Baker & Co. 285 T. Collins & Co. 220

NORBURY.—For erection of a public elementary school at Stanford-road, for the Education Committee of the County Borough of Crofton. Mr. H. Carter-Pearce, F.R.I.B.A., architect, Thornton Heath:—
Greenwood & Sons £14,600 0 G. Everitt £12,650 0
A. L. Ingleton 13,957 0 W. E. Blake 12,650 0
Lawrence & Sons 13,735 0 Cook & Sons 12,577 0
Foster & Dickson 13,531 0 P. Drever 12,447 0
Longley & Co. 12,388 0 Smith & Sons 12,363 0
Lawrence & Son 12,944 0 S. E. Moss 12,227 10
Akers & Co. 12,620 0 Smith & Sons 12,221 0
E. Pitt McCarthy 12,872 0 E. J. Saunders, Grace & Marsh 12,680 0 Croftend 12,100 0

PRINCES RISBOROUGH.—For construction of temporary septic tanks and other works, for Wycombe Rural District Council:—
G. P. Trentham £240 0 0 O. & E. Barnard, W. H. Sney 187 10 0 Princes Risborough* £115 5 5
W. E. Lee 139 1 4 J. Miller 34 5 0
* Excavation only.

WELWYN.—For erection of an engineer's cottage. Mr. H. F. Monce, architect, 11, St. Peter's-street, St. Albans:—
Goldhawk & Son £275 0 A. Pitkin £248 0
F. Newton 267 0 J. F. Owen, Gust-
J. Naden 260 0 ard Wood, Wheat-
J. T. Bushell 255 0 hamstead* 244 5

J. J. ETRIDGE, JR.
SLATE MERCHANTS. LTD.

**EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.**

Telephone 2685 Wall, or write—
BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

**Ham Hill Stone.
Doulting Stone.
Portland Stone.**

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.)
Norton, Stoke-under-Ham, Somerset,
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Soudes and Metallic Lays
Asphalte Company (Mr. H. Glenn), Office, 4,
Poultry, E.C.—The best and cheapest material
for damp courses, railway arches, warehouses
floors, flat roofs, stables, cow-sheds and milk
rooms, granaries, tun-rooms, and terraces.
Asphalte Contractors to the Forth Bridge Co.

WHAT!
USE WHITE
LIME-SAND BRICKS
(Of the Finest Quality)
FOR CONTRACT WORK?
WHY?
B The Bricks are uniform.
C Less mortar is required.
C Closer joints can be made.
A 10 per cent. more bricks can be laid per day.
U Where light is required they need no whitewashing.
B Saving of material and labour.
B Used by the MILITARY in GERMANY, AMERICA,
AND IN THIS COUNTRY.
These Bricks are made by the
GODSTONE BRICK & TILE CO. LTD.,
Oxted Road, Godstone, Surrey.
and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at £1- per 1,000, net.
Send for Free Samples.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

OGILVIE & CO.,
Telephone: DALSTON 10
Many years connected with the late firm of W. J. L.
LASCARLES & Co., Ltd., of Banhill Row.
Amhurst Works, DALSTON LANE, N.E.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by
**THE
French Asphalte Co.**
Whose name and address should be inserted in all
specifications.

For estimates, quotations, and all information
apply at the Offices of the Company,
**5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.**

EWART'S

"EMPEROR" Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.

Established 1834.

Telephone:
2570 North.

SMOKE-CURE

Cures in 19 cases out of 20.

THE BUILDER

VOL. CL.—No. 3593.

DECEMBER 15, 1911.

CONTENTS.

	PAGE		PAGE		PAGE
WORK OF THE R.A. STUDENTS	693	THE COMPETITION FOR LIBRARY AND ART GALLERY, MANCHESTER (WITH ILLUSTRATIONS).....	707	LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ...	726
LIVERPOOL KING EDWARD MEMORIAL (WITH ILLUSTRATION).....	694	EARLY CHRISTIAN MOSAICS	715	PATENTS.....	728
ROYAL INSTITUTE OF BRITISH ARCHITECTS.....	695	EARLY ROMAN CHURCHES	719	SOME RECENT SALES.....	728
ARCHITECTURAL ASSOCIATION (WITH ILLUSTRATIONS)	696	THE BUILDING TRADE:—		PRICES CURRENT.....	728
TECHNICAL SOCIETIES.....	696	DAY WORKS	721	TENDERS	729
ENGINEERING SOCIETIES	700	THE MEDLEYWAY SAWYER.....	721		
SOCIETY OF ARCHITECTS	701	SUNDERLAND AND DISTRICT BUILDING TRADES' ASSOCIATION.....	721		
ACADEMY SCHOOLS	702	CONTRACT OR MUNICIPAL LABOUR AT BLACKBURN?	721		
REAL NEWS	702	GENERAL BUILDING NEWS.....	722		
STATION NEWS	703	COMBINATION AMONG BUILDERS	722		
OF COUNCILS	703	APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1909.....	722		
LONDON COUNTY COUNCIL	704	PROJECTED NEW BUILDINGS IN THE PROVINCES	722		
RESPONSE	704	WESTMINSTER CITY COUNCIL	723		
YEARS AGO	705	FOREIGN AND COLONIAL	723		
RIAL SUMMARY.....	706	LEGAL COLUMN	724		
INGS	706	LAW REPORTS	724		
TO ILLUSTRATIONS	706	OBITUARY	725		
ABRATTOIR SOCIETY	706				

Illustrations.

MANCHESTER LIBRARY AND ART GALLERY COMPETITION:—

SELECTED DESIGN BY MESSRS. CROUCH, BUTLER, & SAVAGE.

DETAILS OF SELECTED DESIGN BY MESSRS. CROUCH, BUTLER, & SAVAGE.

DESIGN BY MR. ROBERT ATKINSON, A.R.I.B.A.

“ “ MR. F. W. SIMON, F.R.I.B.A.

“ “ MESSRS. COOPER & SLATER.

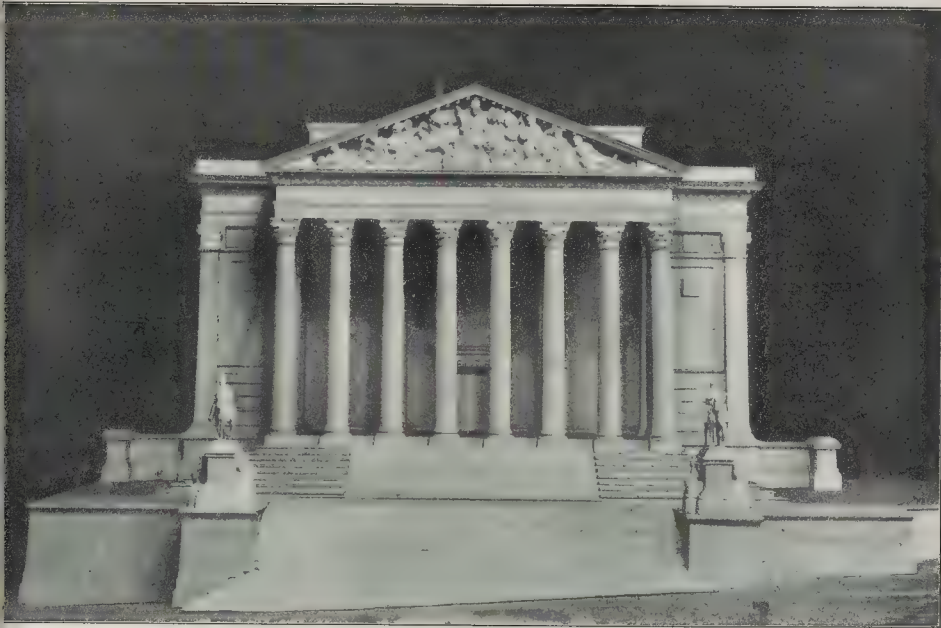
“ “ MESSRS. BRADSHAW & GASS, F.F.R.I.B.A.

“ “ MR. A. GRHAM HENDERSON, A.R.I.B.A.

“ “ MR. R. FRIEDLAND PARKER, A.R.I.B.A.

Illustrations.

- MANCHESTER LIBRARY AND ART GALLERY COMPETITION:—
- SELECTED DESIGN BY MESSRS. CROUCH, BUTLER, & SAVAGE.
- DETAILS OF SELECTED DESIGN BY MESSRS. CROUCH, BUTLER, & SAVAGE.
- DESIGN BY MR. ROBERT ATKINSON, A.R.I.B.A.
- MR. F. W. SIMON, F.R.I.B.A.
- MESSRS. COOPER & SLATER.
- MESSRS. BRADSHAW & GASS, F.R.I.B.A.
- MR. A. GRAHAM HENDERSON, A.R.I.B.A.
- MR. R. FIELDING FARRAR, A.R.I.B.A.



Proposed Edward VII. Memorial : St. George's Hall, Liverpool. (See page 694.)

THE WORK OF THE R.A. STUDENTS.

THIS year is notable for the large proportion of awards in the Painting School that go to lady artists. We should be only too pleased to be able to hail the winners as having tied the claim that art knows no sex; but we honestly do so; but, to be candid, this year's work in painting is deplorably weak in the display of promise that we feel the President quite right in diplomatically passing the virtue of industry rather than indulging in prognostications as to the future career of the prize-winners.

The Gold Medal, it is true, is won "hands down" by Miss Williams, but to no other painting could it possibly have been awarded. The successful picture displays a fine sense of composition, but has few graces of technique, being wrought out with the over-insistence on forms and drawing that suggests the term "academic." The Turner and Creswick prizes have provoked the poorest result we have ever seen on the walls of Burlington House, and neither the Decoration nor the Armistage competitions are up to the

standard of past years. Surely there must be something radically wrong with a school when the output is no better than that exhibited this year.

The Sculpture School does not seem in very much better case. The work is perhaps technically more accomplished than that of the painters, but there is little displaying any sign of the imaginative faculty.

By comparison architecture stands out well; in fact, the Architectural School, though far from being what we should like to see it, is the only one that seems

at the present time to be possessed of any vitality at all. There is a good deal of dull work here, as must be inevitable, but even this frequently displays a degree of technical knowledge relatively more advanced than the principal painting competitions, while the best work certainly suggests far more promise than any shown in the other two schools.

It is, however, to the individual student that this result must be credited, it being quite obvious that no appreciable pressure is being put upon him in disciplining and training his natural abilities. No doubt the more brilliant are bringing on the less able; that is fortunately incidental to every body of workers, and it gives an occasional, but fallacious, effect of progressive method. This circumstance does not offer any guarantee against a relapse if there is a slight falling off in strength among the leading students.

The Architectural Gold Medal for "The Hall of a City Company" goes to Mr. Alan Binning, whose design is a quiet and dignified rendering of the subject. The scheme is well worked out in a good set of drawings, but we feel that the large hall, the main feature in the design, is too lofty in its proportions for the best effect, both externally and internally. The design by Mr. Bucknell offers more interesting architectural internal effects, and is most thoroughly thought out in detail, and, while it does not display quite the same breadth of effect as the winner, it is a scholarly piece of work. We fear Mr. Adrian Berrington lost his chance by approaching the problem in a spirit of light-hearted gaiety very remote from that of stolid respectability which it is customary to associate with even the recreative aspect of a City company. His design bubbles over with whimsical mirth, and, even though the "portly cit." might carry himself ever so sedately in his cups, he would feel in negotiating Mr. Berrington's curly stairs that he had been doing himself well. Another design, by Mr. J. C. Rogers, in the Byzantine manner, is worthy of note as a broad and harmonious rendering of the subject.

We find the design awarded the 20*l.* prize more interesting than the competition for the Gold Medal. This latter would generally be classed as an effort on "Beaux-Arts" lines, although we understand that the author emphatically and indignantly repudiates any such classification. The subject is a concert hall, surrounded by a cruciform group of loggie enclosing fountains and monuments. The treatment has been carefully studied from the symbolic point of view, and, although we do not feel that this has affected its architectural qualities to the extent that the interest taken in this aspect of the design seems to imply, there is a most skilful graduation from the outlying features up to the culminating point in the hall itself.

There are two subjects embodying the design for a public "place," one dealing with the southern terminal of a proposed Charing Cross Bridge, and the other with a railway-station group. These have provoked a good response from the students, and we can compliment Mr. W. H. Gammer and Mr. V. O.

Rees on their designs, which are handled with great restraint and a strong feeling for breadth of effect.

Among the other designs we noted a charming study for a winter garden by Mr. Cyril Farey, which gained him the 10*l.* prize; one for a town house by Mr. W. J. Roberts; while the work of Mr. W. L. Clark and Mr. F. B. Nightingale is characterised by scholarly and refined treatment.

We hope to publish many of these designs in early issues of the *Builder*.

THE LIVERPOOL KING EDWARD MEMORIAL.

IT is now eight months since the proposal to deface the south elevation of St. George's Hall aroused such world-wide opposition that its authors were forced to reconsider their intention, and the matter was apparently dropped.

The general impression was that this ill-advised and altogether unwarrantable project for tampering with an architectural masterpiece—a national, not a parochial inheritance—had been quashed once and for all.

The most eminent architects of Europe and America (including all the architect members of the French Academy of Fine Arts and the late Mr. Carrère), and nearly every London architect with any reputation for scholarship, the Presidents of the provincial architectural societies, leading merchants and public men of the city of Liverpool—all signed petitions and forwarded urgent protests against any meddling with the Hall.

Yet what has happened?

On Friday, December 1, the Finance Committee of the Liverpool Corporation sanctioned a brand-new scheme secretly prepared and approved by the Memorial Committee. On Wednesday, December 6, the City Council were to meet, and on that date the new proposal would be submitted to them and, if accepted, carried into effect without delay. No one outside those immediately responsible was in any way prepared for the manoeuvre. The whole affair had been engineered in camera. Only four days was left for opposition to mature, and during those four days the public were given no opportunity of viewing the model. Councillors and a few favoured individuals alone were permitted to see it; this by the express order of the authorities. Beyond the publication of photos (taken from a favourable position) and an imaginative sketch perspective in the local Press, the citizens themselves had no opportunity of forming any opinion on the real all-round appearance of the new scheme or what it actually involved. To devise effective action in the circumstances was, of course, impossible, and, though a great number of protests and appeals by the best-known Liverpool architects were published, nothing more could be done.

It may be asked, What was the explanation of this sudden *coup*? Simply this. The members of the Finance and Memorial Committees, having drawn upon their heads the universal execration of artists and connoisseurs eight months ago, bitterly resented the exposure of

their own ineptitude. The discovery that their will could be thwarted by the sheer force of public opinion, if on sufficient time were given for the opinion to be instructed, was as pleasant as it was surprising to them. This time they determined there should be no mistake. They have publicly professed to regard the opposition to the original proposal aroused as being engineered by persons too young and inexperienced to be taken seriously, whose motives were either a misguided conception of their own importance or mischievous determination to damage the reputation of the civic authorities and acquire personal advertisement. That the Committees had the support of only two well-known architects, sculptors, and a painter mattered nothing. To save their face, at any rate, the Committees decided to run no risks, and followed therefore a plan of campaign which does infinite credit to the circumspection.

As might have been anticipated, the Council debate revealed abysses of fatuity and ignorance, cheap Corporation wit abounded—puns on "odium" and "podium," etc.—and other evidence of general incapability of realising the nature of the proposal under discussion. Much of what we suppose to be "parliamentary capital" was made out of the suggestion that the memorial should be placed on the site now occupied by the Beaconsfield statue. This was denounced as a Radium dodge to insult the Conservative majority in the Council. Several admiral speeches were delivered in a last effort to save the Hall, but the majority of the Council, fearing the consequences of admitting the incompetence of the Committees, deafened their ears. A final sacrifice of Elmes's masterpiece by a sixty-seven votes being in favour of the scheme submitted and only twenty against.

Still more significant was the defeat of a subsequent proposal to delay the execution of the work for a month, in order that the architects, and through them the general public, might have some opportunity of giving their opinions on the matter.

An unfortunate circumstance assisted in the disaster was the intentional unintentional misreading of a statement coming from a quarter always associated with the strongest opposition. The statement, which was widely circulated and undoubtedly had, in its misinterpreted form, a great influence, pronounced the new scheme to be an improvement on the old, but only if accompanied by drastic alterations in the site and the provision of a great door within the Hall directly behind the outer door, making the latter a principal entrance and giving a *raison d'être* for the statue. The promoters of the new scheme had the pronouncement as if it were weakening of the opposition and admission that they were at last justified in their persistence. A vague but not the less mischievous impression was abroad that "a happy compromise" had been achieved so dear to the English temperament and always mistaken for public matters for "sound statesmanship"—had been arrived at, and subsequent efforts could wholly dispel

tion. Few members of the Council saw, wished to see, that the new scheme was an improvement on the old in so far as it was accompanied by far-reaching and costly modifications of the site and a change in the plan of the building. In our own opinion, any suggestion at that the new scheme can be made probable by altering the interior of the building is incalculably dangerous. We are convinced it is a far wiser policy to withhold from the Philistines all opportunity for further mischief, to give no vent to a greater catastrophe.

As it stands, the new scheme is as fortunate as its predecessor. In the latter it may be remembered there was, to an arrangement of dog-legged steps, cut out of the podium and in the centre an equestrian statue. Then the statue was relegated to the east end of the podium and another pedestal for a statue group placed at the west end. Now in the new scheme the whole of the middle of the podium is cut away and the introduction of a wide flight of steps parallel to those already existing is inevitable. Projections are thrown out from the remnant of the podium partially to lose the lopsided avalanche of steps, and on the projections pedestals for equestrian statues are placed, the east being embellished by the work of Sir George Gilbert Scott, the west to remain plain till some sufficiently illustrious personage has the good grace to die.

The position of affairs is almost irredeemable. To start with, the Memorial Committee decides to have an equestrian statue, the essential inappropriateness of which we need not press. Then they propose to consider the dozen or more excellent sites vacant in the city, and to receive the idea of laying hands on the site of St. George's Hall to provide a setting for their equestrian statue—albeit, having conceived the idea, the only objection seems to have been just how much mischief they could possibly do. Finally, they approve a scheme whereby the ratepayers are levied of 2,500*l.* to provide a series of steps leading nowhere and meaning nothing, and in which the actual memorial statue is made to balance an empty pedestal. It is a unique achievement in the annals of municipal futility. Before this supreme accomplishment can be reached have been many preliminary steps, it is true—the dismal Niagara steps in front of the William Brown statue, the wilderness of stone called John's Gardens, the Queen Victoria Memorial. But all these follies pale beside the new memorial scheme.

The most casual survey is sufficient to condemn it. The steps sprawl asymmetrically over the pavement and take away the impression of lofty, immutable length that was one of the glories of the south facade. They make it appear as if slipping down the hill. The jagged, cheap line of the steps where they merge one by one from the pavement emphasises the fact that the whole facade has been thrown out of balance. Resupposing the necessity of altering the south elevation of the Hall, a scheme by Mr. Horatio Farnham was published which had points of vast superiority over one adopted. In it the lower courses of the podium were retained to form a

level plateau upon which the steps descended at a regular angle.

In conclusion, let us make it quite clear that if the Liverpool Corporation thinks it can perpetuate artistic outrages of this sort with impunity, no greater mistake could be made. St. George's Hall is not the property of the gentlemen whose business it is to manage municipal finances, trams, and drains. It belongs to those persons whose minds have been fitted by education in and natural sensibility to appreciate "the most grimly intellectual of the arts." In this matter there is no question of "the agitation subsiding," "the storm blowing over."

We can safely predict that this work, if carried out, will ultimately be destroyed and the podium replaced—just as St. John's Gardens, upon which 40,000*l.* was wasted, will also be effaced and redesigned.

NOTES.

The New Capital of India.

THE reincarnation of the ancient and romantic city of Delhi as the seat of empire in India is no doubt an act of the first political importance. Few administrative measures make so striking an appeal to the imagination. Delhi has not only historical associations, but architectural ones also of no mean importance. The transfer of the headquarters of the Imperial Government from Calcutta will involve the erection of new Government buildings in proximity to the fanciful and poetic creations of the old Mogul Emperors. It is much to be desired that the Government of India will rise to the height of the occasion and realise that this is a most important event—a unique opportunity—in the architectural as well as in the political world, and will make some special effort, outside the ordinary routine of their official departments, to deal with the architectural problem in the same imaginative spirit as inspired their political action. Here, if anywhere, an artist, not just a competent and reliable official, is needed. It may be necessary to improve the sanitation of Delhi, but the one unpardonable sin would be to vulgarise it. Presumably a new Imperial quarter will arise laid out in a manner that is suitable for State ceremonies. Here the recent experience of the Durbar should be useful, involving as it did the lay-out of a temporary city for ceremonial purposes. This might possibly suggest a ruling idea for a permanent one which is now to come into existence.

The Object of the British School at Rome.

WE can heartily sympathise with Professor Reilly's anticipations, as expressed in his letter to the *Times* of the 7th inst., that the British School at Rome will have a permanently beneficial effect on our architecture. In pointing out that, compared with other countries, we sadly need the strengthening influence of classic studies Professor Reilly enforces his arguments by references to John Wood's work on Palmyra and Robert Adam's on Spalato, and by contrasting such studies with the unhealthy practice which results in a new piece of detail, or some ingenious trick of design, spreading

like an epidemic through the architecture of the day. While a great deal of modern "free classic" is "free from nothing so much as the classical spirit of refinement and restraint," we must look to the architectural students of the new school to supply the much needed corrective to such a state of affairs.

SIR EDWARD J. POYNTER Lady Students in his address to the of Art. Royal Academy students

and their friends on the evening of December 9 referred, as he did last year, to the successful work done by women students. He attributed the results mainly to the better powers of application possessed or exercised by the lady members of the schools. The President alluded particularly to the work of Miss Margaret Lindsay Williams, who, it will be remembered, secured no fewer than four prizes last year. This year this industrious painter wins the coveted Gold Medal with Travelling Studentship, also the first prize (30*l.*) with medal for her design for the decoration of a portion of a public building. A point which arises naturally in regard to this promising career, officially approved by Sir E. J. Poynter, is the future eligibility of Miss Williams for Associateship of the Royal Academy. Mary Moser and Angelica Kaufmann were original members of the Academy, and in recent times Lady Butler was only two votes behind when Sir H. von Herkomer was elected Associate. Can it be prophesied that Miss Williams, trained in the Schools and possessing the artistic qualities admired at Burlington House, will break down the barrier of sex which has existed since the foundation of the Royal Academy, and in due course, if her progress is maintained, be elected A.R.A.? There seems to be no reason why such an honour should not be conferred, if in Academic circles women continue to out-paint the men. The ranks must be filled. It may be mentioned that Miss Williams is not the first lady who has taken the "Gold" for painting; Miss Louisa Starr took it in 1867 and Miss Jessie Macgregor in 1871. Since 1879, when the Studentship and Medal were combined, one lady has won the distinction, namely, Miss Robilliard, in 1909. So far the women students have not challenged the supremacy of the men in the architectural school.

The Semi-Nude. A few weeks ago we illustrated some female statues used as lamp

standards outside the new Town Hall at South Shields. These figures have given offence to certain inhabitants who, not entirely on their own account, have protested because they fear the youth of the town will be demoralised. Sensitive maids have been seen to blush in self-consciousness, and all the usual objections are raised. We had them in London when the Venus of Velazquez found its way to the National Gallery and when Mr. Epstein's figures were placed on the British Medical building in the Strand. The supposed outrages on modesty are usually exaggerated on these occasions. The best course for the South Shields Town Council to take is to remain neutral in the controversy. The attention directed to the statues

shadow such as is cast by an arc-lamp is not wholly pleasing; its contrasts are too violent, and deprive the subject of that continuity which is essential to artistic effect. Atmosphere, by toning down the shadow effect, gives in the beautiful half-tones the soft, almost inimitable gradation of light upon a rounded surface, which forms an essential factor in repose.

Eve's golden rays
Falling on glade and stream,
Flecking the forest path with slanting beam
Made glorious by her minister the shade,
Sinking through the distant air
The purple haze

Colour.

There is still one great factor in connexion with texture upon which I have not touched, and that is colour. It would be impossible to trespass upon your patience by attempting to give any details on this subject, which has been often treated from an artistic standpoint in more scholarly effusions from this rostrum. Physically, however, colour is due to two things—the composite nature of most sources of light, which are really made up of coloured rays, and the power of most bodies upon which such rays fall of absorbing some of these colours more than others, and thus reflecting a mixture of rays dissimilar to those falling upon them. Ordinary sunlight and some artificial lights (such as acetylene) are composed of the various colours seen in the rainbow, which, mixed together, produce the sensation of white. When such light falls on a red brick, most of the blue rays are absorbed and converted into heat; the reflected light, therefore, contains such a preponderance of red rays that the object appears red. It is obvious from these considerations that the further light penetrates into a light-selecting or coloured body the deeper will be its colour, since the less will the amount of unaltered light merely reflected from its external surface. This is well illustrated by the fact that transparent coloured bodies in large pieces are deeper in tint than the same substances in the form of powder, examples of which I put before you. As it can hardly be denied that texture is affected by colour, this quality must then be influenced by the nature of the light in which the body is viewed. If proof is wanted, it is only necessary to repeat the make-believe ghost stories of our children's days and enter a darkened room with a flame tinted with sodium vapour from salt. You will readily observe the changed appearance under these conditions of the coloured powders on the table.

The wonderful play of colours which we value so much in many materials, the beautiful veins of marble giving us greens, reds, and yellows; the warm, cheering tint of Ham Hill stone; the blending of purples, browns, and reds on our sand-faced bricks, are all due to the wonderful variety of absorptive properties possessed by bodies of slightly different chemical compositions. Further, be it noted, nearly all colours in materials are due to that, at least in artistic circles, much abused metal, iron, in an oxidised form.

I have endeavoured to show that the texture of materials, the existence of which, I

think, it is not proposed to deny, depends upon various factors operating in various degrees. Some of them are certainly physical, and are thus amenable to the application of scientific investigation; others are, no doubt, temperamental, and hence are hardly reducible to distinct terms in the present state of psychological research. I take it that you have not called upon me to answer the question which forms the title of this paper. It may be that the correct attitude towards texture is that of the mechanically-trained mind, which makes symmetry of form down to the last mathematical detail a fetish, and that the worship of these irregularities which constitute texture are the outcome of a disordered brain distorted by long hair and a velveteen coat. The decision I leave to you, and at the same time give you my thanks for your patience, and my pleas for lenient dealings with my oratorical and critical shortcomings."

The lecturer showed several interesting lantern slides of the structure of building stones and timber.

Mr. A. R. Jemmett,

in proposing a vote of thanks to the lecturer, said he wished he were permitted to deal with the scientific side of the question. As it was, he would start with the question that the lecturer asked as to whether texture is a fetish; but the trouble was to know what was a fetish. The lecturer had carefully defined texture, but he had not given a lead as to "fetish," but he (the speaker) took it that it meant a sort of false god. Mr. Munby did not appear to regard texture as a fetish, or he would not have taken so much trouble in preparing such an interesting paper. No doubt there was something in texture, but the way it was used in modern work the idea of importance attached to it nowadays—was distinctly a fetish. In modern domestic work one found buildings in which more importance was attached to the material with which it was built than to the forms and proportions, and there were many architects who let their buildings "happen," as it were—their forms and shapes "happen"—and trusted to salvation to the beauty of the brickwork with which they built. A great deal of our architecture nowadays let the features and forms "occur," trusting to the bricks to pull it through; but the finer the design the less it depended on the texture of materials. If they got a little hut or barn or house with no particular interest in it of design it was saved by the materials, but if they erected a building like a Greek temple or Gothic cathedral, the texture of the material was of very little importance. All the finest effects of the buildings—the characteristic effects of the buildings—came when one was at such a distance from the building that the texture could not be seen. If one looked at St. Paul's Cathedral from Waterloo Bridge the buildings created an impression on the mind, a grand effect, which, no doubt, "texture" had something to do with; but the actual texture of the stone was a matter of little importance. In the same way the texture of the material had very little to do with the

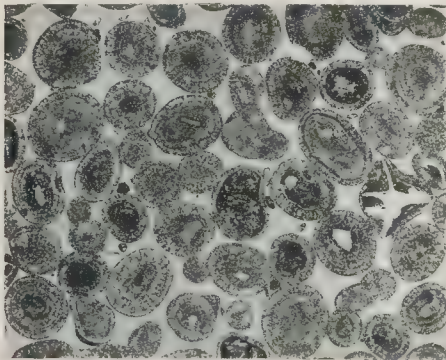
impression created in looking at Lincoln Cathedral. Or take the west front of Notre Dame and view it from the square and then from the other side of the river—the building could tell its story, and impressed one, even if it had been built in cement. Or take the Parthenon and view it a few hundred yards away—it would look just as well if cast in cement. They could go close up to a building and, appreciating the point of view of texture of the materials, get the effect aimed at; but when they got away some quarter of a mile the texture disappeared, and any bad proportion struck one, and the building had no fine effect on one at all. In that way he thought there was a great danger in modern architecture of making a fetish of texture. Mr. Munby said that a perfectly plain surface would not interest anyone, and that the importance of texture was its variety. That was obvious in a way, as the sky at night would not interest one if there were no stars in it. We wanted to get the variety on the surface in order to get interest, so that from that point of view the production of texture was the whole art of design. They had to take perfectly plain surfaces, and proceed to ornament or mould them, and texture was got by this modelling—the giving of light and shade, and producing a texture which, seen at a distance, looked well, and from that point of view texture was not a fetish.

Mr. H. D. Searles-Wood

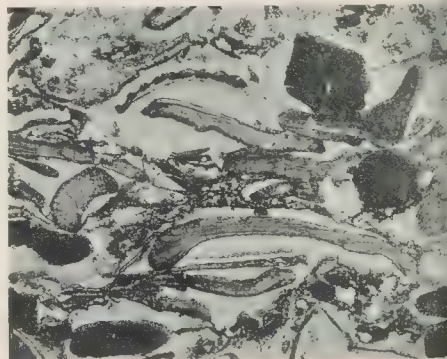
seconded the vote of thanks, and said that, in regard to the lantern slides they had seen, Mr. Munby had formed an album of sections of stone at the Institute, and had written an interesting introduction to them. Anyone who wanted to study the question of stone could not do better than get that book from the Institute library, for it contained a great deal of interesting information. With regard to texture, there was the question of bricks and mortar joints, and whether the work was fresh from the builder's hands or whether an interval of a few years had elapsed when the effects of the weather had told on the joints and when they were very far from satisfactory. That was the point where the picturesque ended and the painful began. It was a difficult point to determine how far good solid construction should give way to texture. As to the small bricks which were such a fetish at the present time, they made bad bonding. Small bricks did not make good brickwork unless there were small bricks throughout a wall, and that was a luxury which few of them could afford. With regard to the sections of wood, anyone could make them; it was a fascinating way of studying the wood question. Could Mr. Munby give them a reason why colour faded in materials?

Mr. J. D. Crace

said that it must not be overlooked that certain stones were adopted—Portland, for instance—not for uniformity of colour, but because they stood the climate, especially the climate of cliffs, better than other stones that were available. Stone required definite treatment in mouldings; if one took Ham Hill



Ketton Limestone.
(Magnified 20 diameters.)



Ham Hill Limestone.
(Magnified 20 diameters.)

it, it would be absurd to put in the same oil as in Portland stone. Ham Hill stone is admirably suited to buildings of a simple order, but it would be wrong to introduce ridings or carving unless on a large scale. A desirable character of stone, therefore, did depend merely on texture, and, after all, it sank into insignificance in the distance. The case of wood of even grain, a much more beautiful effect was obtained without polish, only such as would preserve it from the action of damp and weather. As to wax with solvent being a protection, the wax was rather without the solvent, as in damp weather the solvent was apt to come to the face again. As to metals, in some cases it could be polished, and the other part would show the texture, and the combination of smooth and texture was often of great advantage. He did not think that anyone would object to the natural surface of wrought-iron, which the same excuse and the same advantages could be claimed as for the natural face of wood. Atmosphere entirely modified appearance, and that was where texture led to be of consequence. As to colour, though it was quite true that colours were actually affected by how much they were taken up in the actual pigments, when they were once put on to a surface it was practically not very much affected. It was the difference between making a water-colour wing on a smooth paper or a rough one. Was there not considerable risk in trusting too much to these adventitious circumstances of building material? It seemed to him that that was a thing which every architect in practice would gradually experience. When they were considering architecture as art these variations assumed an importance, except to this extent that each material should have its own treatment, and other than that was a treatment consequent on its use or on other circumstances was a subsidiary question; but there was always the danger of laying too much stress on the adventitious conditions of surface or other things. He had noticed that whenever he had been sent on discussions on his favourite subject, the colour question, the question was at once raised: is it more successful in oil or in fresco? That was a question quite far from the question of the use of colour.

T. L. Dale
It was largely a matter of design as to whether the texture was of importance or not. It was largely a question of scale. If a building was of sufficient importance to produce an effect, texture was of slight importance, but if the building was something like some of the ideal homes, texture then a matter of importance. If they were relying on form as in a Greek temple, they could afford to disregard texture; but in ideal villa texture was sometimes the only thing which could be made at all interesting.

H. W. Britton
He always felt that the Greeks snubbed marble. In marblework they relied on fine shape and form, but form was what they got at chiefly.

Mr. A. E. Bullock having spoken,

J. B. Scott
That the materials of to-day were better than those of twenty years ago. Care ought to be given to the selection and use of material. He had remarked that if you looked at building half a mile off it did not matter what the material was, but we had to look at buildings close to us as well as at a distance.

Mr. Alec Horsnell said that every material had its texture, and an effect could be got out of it if used in a right way.

T. C. Yates
He agreed to Butterfield's work, and said that Butterfield was one of the grandest architects of his time, but he failed in texture. The College was a fine design, but the whole was overloaded with ornament; one was hindered by ornament. If Butterfield had used Mr. Munby's paper he might have lifted his external decoration, and his designs would have given even more pleasure than they do.

C. G. Boucher
The Greeks did not trouble about texture, they were going out of their way to get rid of it.

He did not agree that a flat surface gave a better notion of material, but a polished one did. If one polished granite it gained density of tone and colour. A water-colour drawing when it was glazed was far deeper in tone and colour than when unglazed.

Mr. N. Hadwen having spoken,

Mr. A. T. Bolton

said it seemed to him that one point was that colour depended upon texture. He had a particular affection for the old London chimney-pot, such as could be seen at Kew, and he had desired to put some on a house he designed, and the result was that the apparently red pot at a distance of, say, half a mile looked black. The reason for that, he believed, was that the old chimney-pot made on a potter's wheel had an open texture, but the modern ones were produced by a machine in the same way as drainpipes were, and the density of the material caused the light to affect the colour in the way described. It seemed obvious to him that colour and texture were intimately connected. The examples of ground and unground materials which Mr. Munby had shown greatly interested him (the speaker), because some years ago he gave a good deal of attention to mosaics and carefully examined some of those old ceiling mosaics at Rome and elsewhere, and he discovered that those beautiful blue vaults were produced by variations in the size of the tesserae and the size of the texture and the coarseness of the material. The importance of that was great; and spacing and jointing had a good deal to do with the result. He did not agree that the Parthenon would look the same in Portland or any other cement; the quality of the marble was intimately connected with the design. A problem was why some buildings were regarded as exceptionally beautiful? To the translucency of the marble, which modified the shadow, had been ascribed, by Mr. Chisholm, much of the beauty of the Taj Mahal; and that would apply to the Parthenon. The translucency produced by the polishing modified the shadows precisely as it did in the Taj Mahal; but with marble and a brilliant sky they had a good many of the trump cards which we did not get in this country. In Seville there were some late-period buildings, with common, washed-out, red bricks inlaid with tiles, and under the sky of Seville these lines matched the sky, the combination being very effective; he had seen from above these tiles were nothing but the commonest black tiles, and it was the sun shining on them that produced such a glorious effect. An artist saw a thing as true without necessarily knowing the true scientific reason for it; his observation might be true and his own reason for it wrong. Mr. Munby's paper showed how intimately science could help them. As to Mr. Butterfield, the answer was that the architect said his buildings would require 100 years before they could be judged, and Keble was not as old as that yet; but that would not help the inside, which was very trying in colour effect. He had always been greatly interested in the subject of old stone walling, and in order to see how it was done, had often measured lengths in various places. Wanting to get a garden wall built rather more like the old work, he bought a quantity of old stone, and, instead of employing a mason, he got a common labourer to use the material with the help of three or four other labourers. The result of their work was splendid, for it looked like a bit of some old medieval castle thrown up in a hurry with the enemy on the horizon. Though the local builders and masons did not like it at all. Later on it was necessary to make some alterations, and he let the ordinary masons do the work their way, only stipulating that there was to be no cobweb pointing, with the result that it looked like part of the ordinary seaside church—surely the lowest limit of rubble masonry. That all showed the advantage of starving old methods of walling and then setting men in a given locality to build in the way they could understand. He agreed that the size of a work was of importance in considering the question. He always thought that the very expensive bricks used in the outside of a great structure like the Westminster Cathedral were wasted, for common stocks might just as well have been used, judging by the effect of various old buildings he had seen, for the design would have looked as fine, if not finer, and the

money saved could have been spent inside, where it was needed. That was an illustration of texture being carried too far. Design and scale had a great deal to do with the question. As to wax and solvent for the treatment of woodwork, it was all right if the solvent used was spirits of wine. It was expensive, but the treatment prevented the wood taking up dirt in the objectionable way in which it had in those premises, and the solvent evaporated.

The Chairman,

in putting the vote of thanks to the meeting, said that in olden times design counted for more than texture. It certainly seemed to be the case that the old builders had not texture in mind, but they had the effect of colour; nowadays, we seemed to have lost sight of that, though some speakers had alluded to it that night. As to Mr. Grace's remark that each material should have its own particular treatment, that seemed most true, but the difficulty was to know what the treatment should be. He remembered a modern church roof made of plain deal which looked very well, and a few years afterwards he saw the church again, and he found that the roof had been varnished, and the effect was horrible—the beautiful colour of the wood had gone and the varnish had taken its place. During one's practice one found out what was the best way to treat materials.

The vote of thanks having been heartily agreed to,

Mr. Munby,

in reply, said he quite agreed with Mr. Jemmett that, if one had a big building and viewed it from a distance one was fairly independent of texture; but this involved architectural form, which was really outside the discussion. At least, that was the spirit in which he considered the proposition, i.e., that they should try and consider texture apart from architectural form altogether—as applied to a flat surface. As to the R.I.B.A. book on stones with which Mr. Searles-Wood had credited him, it had really been produced by the Science Committee. He hoped it was of some value as indicating the texture of stones and distinguishing one stone from another. In reference to the use of 2-in. bricks, 2-in. stocks could now be obtained, and there was no reason why good bonding should not be got if the work was carried right through. They were rather more costly than ordinary stocks, but not excessively so. Mr. Searles-Wood had referred to the fading of colour; a colour changed when light decomposed the material and changed it into something which had no colour or but little colour; it was the result of some actual chemical decomposition. He quite agreed with Mr. Grace that one cannot get fine finishes with Ham Hill stone; but in some districts there was a fair amount of carving carried out in the material, and it was a stone that could be recommended where one could not afford architectural detail. Touching the question of solvents, there was a difficulty in getting beeswax into the wood without the aid of a solvent. With the use of spirits of wine or turpentine, the wax could be got in easily, and then the solvent would evaporate. The final effect would depend on the amount of labour put into the work. As to Mr. Grace's remarks about metals, he (the speaker) did not mean to suggest that in a fine decorative scheme polished metals as a contrast would not be an advantage in a good many designs. Dealing with the question of treatment, the lecturer remarked that if architectural features could not be afforded, what was to be done? It was often as much as one could do to get clients to use 2-in. bricks, and many must, for small work, depend largely on texture. Something had been said about the range of use of materials. They were trying to find out at the Institute why roofing tiles failed. He was told by a manufacturer not long ago that people would have roofing tiles made in certain old tints, and in producing tiles of that tint the material was improperly prepared; that was due to the insufficiency of knowledge of what certain materials would do; it was clear, therefore, that the use of materials should be confined to certain recognised limits. A speaker had suggested that the materials of to-day were better than they

will be diverted by other interests in the locality, and the public will soon get used to the new appearance of the Municipal Buildings and their decorative features. If anyone sees moral danger in the representation of the female form it is due probably to personal idiosyncrasy, and the agitation in South Shields may be dismissed as prudish.

Overstrand Church. HAS not the Society of Antiquaries rather over-shot the mark in its protest against the reconstruction of Overstrand Church? On general principles we should be disposed to agree with the attitude taken up, but think it open to question whether they are applicable to every case. A derelict run stripped of its ivy and regarded as a sort of museum piece to be studied by the few earnest archaeologists who may find themselves in the locality does not make a strong appeal to our imagination, and, though this form of preservation may be entirely justified where there are features of unique or exceptional interest, there is also something to be said in favour of the sentiment of worshipping in a place hallowed by the tradition of centuries, even though the actual structure may be to some extent a modern one.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The third general meeting (business) of session 1911-1912 of the Royal Institute of British Architects was held on the 4th inst. at No. 9, Conduit-street, Regent-street, W., when the following gentlemen were elected:

As Fellows:

H. Barnes, West J. Swain, East Boldon.
Hartlepool, Sunderland.
H. W. Bird, Hong R. D. Wells, London.
Kongr. China, H. White, Loughton.

As Associates*:-

M. S. R. Adams, Bedford Park, Chiswick.
L. M. Angus, London.
E. E. Barks, London.
P. L. Baxter, Great P. Stannice.
H. J. Benians, Goudhurst.
W. T. Benlynn, Birmingham.
R. H. P. Bevis, Southsea.
A. G. Blackford, London.
K. S. Broad, London.
B. Brown, Bradford.
M. Brown, London.
J. E. Bullock, London.
L. H. Clarke, Harrogate.
J. C. G. Davies, Morriston, Glam.
W. F. Davies, Liverpool.
C. Davis, Putney.
C. A. Edison, Derby.
A. F. Evans, Liverpool.
L. J. Finning, Pinhoe, Exeter.
W. T. Gerbutt, Bradford.
W. S. Gorrings, Seaforth.
B. M. Godwin, London.
G. D. G. Hake, London.
C. A. Harding, Glasgow.
G. W. Home, London.
T. C. Howitt, Nottingham.
J. N. Keeseeley, London.
F. W. Knight, London.

W. Lawson, Newcastle-on-Tyne.
A. D. Leroy, London.
P. N. Logan, Bristol.
C. W. Long, London.
M. E. Martin, Brentford.
F. E. Mennie, London.
H. I. Merriman, London.
A. H. Mottram, London.
G. E. Owen, Sydney, New South Wales.
T. A. Parker, Cole, Lancashire.
J. W. Paterson, Edinburgh.
I. M. Pritchard, Chiswick.
H. L. Samson, London.
C. M. Swannell, London.
F. H. Swindells, London.
M. J. Tepper, London.
H. Thornton, Dewsbury.
A. G. W. Tickle, London.
H. West, London.
J. T. Westbye, Christania, Norway.
A. E. M. Whitehouse, Manchester.
N. Wiggell, Sunderland.
L. E. Williams, London.
A. W. Wilson, Cumbergate, Peterborough.
C. R. Winter, Bourne-mouth.
H. Wormald, Wakefield.
C. Wright, London.
A. M. C. Young, London.

As Hon. Associates:-

Walter Crane, R.W.S., Commandador Royat.
Crown of Italy, Kensington, W.
J. H. Marshall, M.A. (Cantab.), Companion of the Indian Empire; Director-General of Archaeology in India; Benmore, Simla, India, and East India U.S. Club, St. James's square.

All the applicants for Associateship passed the Qualifying Examination in June last.

Election of Licentiates.

At the Council meeting of December 4 the following candidates, having been found eligible and qualified under the Charter and by-laws, were elected Licentiates of the Institute in accordance with Bylaw 12, viz:

C. E. Ainley, Manchester.
J. Arabian.
R. J. Archibald, Middleborough.
C. W. Bell, Sunderland.
W. H. Bridges, Skegness.
B. Cooper.
A. H. Coyle, Baroda, India.
G. H. Davies, Pontypool.
W. A. Dew, Hyde, Cheshire.
A. E. Dick, Aberdeen.
C. H. Dyer, Bloemfontein.
T. Glassebrook, Stourbridge.
C. I. Greenhow, Newcastle.
C. H. Grieg, Edinburgh.
W. Hall, Oudshoorn, South Africa.
E. W. Hilton, Altrincham.
L. Holdsworth, Wakefield.
G. W. C. Lane, York.
V. A. Lawson, Stroud.

F. G. I. Legg, India.
J. M. Lewis, Madras.
J. Lowson, Aberdeen.
D. Macdonald, Dingwall.
T. Malvern, Cheltenham.
W. T. Margetts.
R. T. Miller.
B. C. Palmer, Lewes.
E. Pawley.
P. Reid, Kirkcaldy.
W. H. Scott, Cardiff.
S. Selwyn, Eastbourne.
W. G. Shipwright.
H. A. Sisley, Manchester.
C. B. Smith.
C. B. Spark, Sydney, N.S.W.
A. W. Stabler, Durham.
J. H. Stanford, Toronto.
S. Taylor, Burnley.
H. Townley, Manchester.
G. J. Viner, Morris.
J. D. White, Southampton.
A. R. Wood, Burslem, Staffs.



THE TEXTURE OF MATERIALS.

A COMBINED ordinary general and Camera, Sketch, and Debate Club meeting of the Architectural Association was held on Monday at No. 18, Tuford-street, Westminster, S.W., Mr. Gerald Horsley, President, in the chair. Mr. H. A. Hall, Hon. Secretary, made the following announcements:-

Meeting of the Camera, Sketch, and Debate Club on January 18, at 7.30 p.m. Paper by Mr. C. G. Boucher, A.R.I.B.A., entitled "Architectural Perspective."

First spring visit on January 6. Further particulars will be announced later.

The following gentlemen were elected as members, i.e. Messrs. A. Harris, Victoria street, S.W.; R. Sheppard, London; R. S. Wilshe, Finsbury Park, N.

On the motion of the President, a vote of thanks was accorded to Mr. Arthur T. Bolton for presenting diagrams of Jacobean plans to the School.

The President then nominated Mr. Theo. Frye as a member to serve on the Council to fill the present vacancy.

Mr. Alan E. Munby then read the following paper, entitled

"IS THE TEXTURE OF MATERIALS A FETTER?"

"When I mentioned the title of this paper, which your Hon. Secretary has been good enough to select for me, to an eminent official of the Institute in the hope that he would supply me with many volumes dealing with the subject, he was unable to do so, remarked, 'Well, I suppose all you can say is 'No.' My rejoinder was that, although he had gauged my literary powers with more severity than kindness, I felt a doubt as to whether so terse a paper would be exactly what was expected of me, and whether it was the best preparation for a discriminating discussion.

What is Texture?

To begin with, what is texture? One's first impulse is to appeal to Dr. Johnson and digest his definition, but the understanding of terms is not really synonymous with the defining of them, and it is the understanding with which we are now concerned. We probably all understood the feelings of the artist recently depicted in *Punch* who, on being asked in a restaurant by the amazed Phyllis whether he were really going to take brown sugar with an ice, replied: "I am, though; it gives it a texture." It is obvious that vanilla ice, with its absence of life and its unvaried surface, would be vastly improved in appearance by the addition of brown sugar, reflecting light in various directions and presenting irregularities of surface which must add interest and thus tempt investigation. It is with this question of variety that, I take it, texture is mostly concerned. Why is a tube station built of glazed faience, wholly unpleasing to the senses, when a dilapidated plaster cottage, stained and weathered with age, is able to charm our vision? Does it not depend upon the variety displayed by the latter? Select any particular feature of the plastered wall, say, a brown stain, or a sufficiently minute scale to deprive it of variety, and repeat it as the whole wall; the effect is dull and devoid of interest; the surface would lack texture owing to repetition. We are, be it observed, speaking of repetition of featureless surfaces, and repetition of architectural forms; few, indeed, would criticise the view that repeated architectural features, if these are initially good, make for repose and stateliness in buildings more than anything else.

If, then, we are to attempt a definition of texture, it should perhaps be variety on a minute scale, and we have now to inquire as to the nature of this variety. Has it a real existence as a physical entity, and, so, does it appertain to the material itself, or to the conditions of our inspection as regards light and atmosphere; or is it a thing merely of artistic cultivation or inborn feeling; or the result of mental training, whereby some and not others are affected?

Perhaps these questions are best answered by taking some individual substances and considering their physical properties and conditions of inspection.

Bricks and Tiles.

Let us take the material which forms the external surface of the vast majority of buildings in this country—brick. There are some hundreds of varieties of bricks, but we will confine ourselves to the consideration of two. If we go north of the Trent and examine some of the important brick structures we shall find that the pressed bricks of Accrington have a great virtue. They are a dull red, with a semi-vitrified face, and therefore are non-retentive of dirt and subject to surface erosion; moreover, they are large, being a full 3 in. thick, like most North-Country bricks. Very little variety is to be observed in them, and the mellowing hand of time offers to such materials in vain the insidious germs of decay. As they built up so will they remain in tone, character, and semi-sheen.

Now turn to the little hand-made, sand-faced bricks, such as those obtained from Clare, in Suffolk, rough, rich in purple patches, and bubbling with variety. What do they charm us? Is it not their irregularity? A sand ripple here, a flint there, a purple header to the right, a brown one to the left; it is surely variation which produces upon certain minds a sense of artistic satisfaction and a quiet feeling of repose and harmony. This state of mind, however, is not universal. I remember a builder who had much admired an architect's work expressing his disapproval in no measured terms at the (to him) inartistic effect of mortar joints an inch thick; and I have heard exclamations of approbation from a clerk working on a roof of hard-pressed tiles laid with a mechanical precision worthy of a dividing engine. Whether such approbation came from a well-ordered mind or from one untutored is for your decision this evening. Brick architecture is, indeed, capable of an immense variety of expressions according to the size and nature of the component bricks, quite apart from architectural treatment, and Nature lends further aids with her soft touches of vegetation.

of the most beautiful pieces of brick-I have ever seen is that composing the houses at Audley End. There is nothing striking in the design of the buildings, brick string courses, brick mullioned, arched-headed, leaded windows, very irregular, spaced, and, running out of the main of roof, gables in brick, some of them unpaved. But the rich mellowness of the building bemossed and lichened, as I lately saw it, in the full glory of a sinking left a most vivid impression on my mind. I am curious to note withal that, whether or be a fetish or not, the forces of nature seem to treat more kindly those walls which possess the charm of irregular surface, than those which attempt to elude her weathering and eroding tendencies. The hand-made tile, rough and bent, which makes a home for the seed and the moss spore, is oftentimes when found to be as hard and durable as the made yesterday instead of a century whereas the pressed tile and the terra-cotta, unless made with consummate skill, soon flake and shell, giving an appearance of dilapidation which is anything but pleasing, because it is the direct effect of mechanical disruption.

Even bricks and tiles are to some extent artificial, and what texture they possess is result of mechanical treatment. Let us turn to some materials of Nature's own making and see whether this quality of her is really a thing to be found in the natural products of the earth.

Stone.

What of stone? We must dismiss from our minds the lofty Gothic spire, with its delicate tracery laid against a blue vault of sky, or the dignity of a Renaissance façade, and the only of the flat surface of an individual of stone.

Our big cities are apt to employ stone in a too purely architectural standpoint—to utilise it for the expression of conventional features more than for what it can do for itself. Perhaps the unequal struggle between the material and the enveloping city grime is an excuse for this, but away from the town the stone may be given scope for its own beauty, unaided by form, which, on the score of it, often proves its only possible use. Indeed, that it were more often so used, and that the speculative designer stay his hand on the production of a pretentious ornament, to retain his masons' wages in exchange for the thought in the selection of his material.

At stones differ in texture is a problem which hardly requires proving, how much they differ is perhaps not fully realised. Again, we find that when relied on the material itself for effect, the sense of grain provides, at least, to the highly disordered brain of the artistic, the set sense of charm. A plain window in Ham Hill stone is delightful; the treatment in York stone is dull and banal. In London we all use Portland stone, but whether it is because we have been

brought up on the pabulum of successive repetition in the matter of specifying, or because the builder has a sacred horror of anything outside the coltite formation, has never been quite clear to me. I do not wish to degrade the theme of my discourse to a mere lecture on building stones, but, since texture is intimately connected with minute physical properties, I will venture to show you with the aid of the lantern a few specimens of enlarged photos of actual stone sections.

Now let me turn to another material of Nature's own production—timber.

Timber.

For nearly all purposes for which timber is required in situations in which its characters can be observed, it is wrought, and therefore any texture it possesses must be due to the porosity and markings of the material. No timber to my mind is more attractive than that left clean from the plane and innocent of paint or varnish. Such absence of treatment is not always possible, however, nor desirable in all situations, but where protection is required beeswax rubbed into the pores of the wood in a suitable solvent will still allow the texture of the surface to remain, and will not prevent the timber from toning. Naturally, wood which is figured and which is cut to display the figure to the best advantage presents more attraction than unmarked timber, but even a piece of yellow deal will, after a few years of exposure, assume a tone which has much individuality. That woods, even of the same class, differ considerably in structure and hence in texture will be evident in viewing the sections of a few timbers which I place before you in the lantern.

Metals.

Compare the effect of an old chair possessing the hand polish which continual use can alone afford with the same piece of furniture varnished after leaving the cabinet-maker's shop. The wood is the same, but the texture is, in the former case, brought out and the tone of the wood mellowed; whereas in the latter such variety as the wood possesses is at least partly concealed by the unbroken gloss of the varnish, which reflects much of the light falling on it direct from its outer surface. In this connexion it is of interest to note the growing public appreciation of flat as against bright surfaces. A flat surface allows the penetration of light, and hence admits of a truer appreciation of the nature of the substance, more especially when viewed obliquely. The more the light is reflected from the surface of a body without penetrating into it the less will the particular characters of the substance on which the light falls be transmitted to the observer's eye, till in an extreme case we get a mere mirror, itself a characterless thing, returning the light exactly as it receives it. We may therefore take a perfectly reflecting surface as the antithesis of texturehood, which leads us to a mental reflection on the metals which perhaps of all our materials show the least texture, and, apart from cases of imposed form, a surface of metal is not usually regarded enthusiastically for

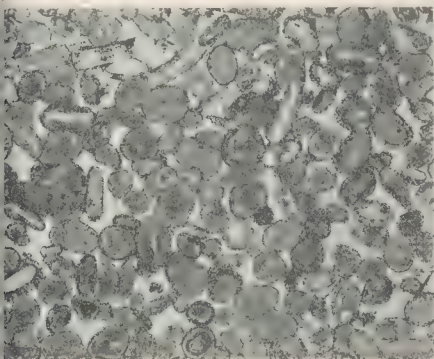
architectural treatment. Yet metals are not quite textureless, and all have in reality a crystalline structure, which may be brought out by etching their surfaces. The slide before you shows a piece of silicon steel (much magnified) etched in this manner. Our dependence on texture is well illustrated by reflecting on the distress we should experience did a client insist on his house being faced externally with sheet-iron plates; but new methods of construction are constantly calling upon us in the matter of treatment, and, should means be found to circumvent the atmospheric oxidation of iron, such a problem might be assigned to any architect, and the economical treatment of a façade comprising only materials poor in texture might well form a subject for a prize essay. Where a metal is soft and easily oxidised it is naturally amenable to assuming a texture through irregularities of surface. Old lead, particularly if cast, even in a plain waterpipe, may be very attractive to those possessing a certain mental attitude. Yet that roughness of surface does not constitute effective texture even in a metal seems to be proved by the (at least to some of us) horrible appearance of metals applied to surfaces in the form of powder. Aluminium paint, for example. It is possible that is such cases the sense of unreality causes in honest minds a feeling of revulsion similar to that produced by 5-in. by 1-in. stained deal—"oak," half timber-work—but the psychological dissection of one's feelings and the expulsion of bias in the matter of one's attitude towards so complex a thing as texture is beyond my mental capacity.

Atmospheric Influences.

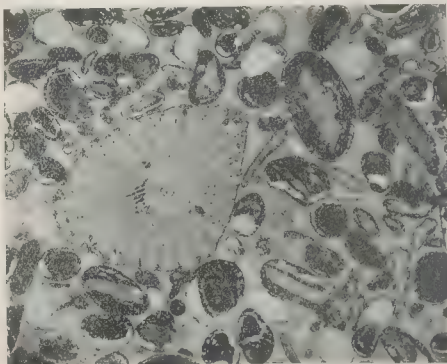
I have endeavoured to deal with some more prominent materials individually, but the conditions of their inspection must not be overlooked. The question of atmosphere in connexion with texture was raised at the beginning of this paper, and undoubtedly atmospheric influences do affect the feeling which materials display. I have never seen a Tube station nestle, even in a London fog at sunset, but undoubtedly the hardness of its lines is lessened and its enamelled surface is deadened. Distance does, indeed, often lend enchantment, because of the softness it imparts, and possibly more owing to the inventive scope it gives to the mind, which mentally fills out the picture in a manner best suited to the timbre of the observer.

Atmosphere is not, however, merely an abstract artistic expression; a definite absorption of light takes place between its reflection from the object in its passage to the eye of the observer, so that objects viewed through a vacuum space would not have quite the same appearance as those viewed through air, more especially if that air contains, as it generally does, floating solid particles.

The irregularities of a surface are interpreted to us by means of light and shade. It is the shadow cast by the projecting pebble which makes its projection apparent, and the strength and sharpness of that shadow will depend upon the nature of the light and the distance of the object. The sharp black



Ancaster Limestone.
(Magnified 20 diameters.)



Box Ground Bath Stone.
(Magnified 20 diameters.)

are quite large; while the development from it of the Roman form is natural and easy.

There is only one Doric capital in the Museum, and that is of exceedingly late Greek character, and carved in the local white stone, with a shallow abacus and echinus, and with annulets replaced by flat bands, like those found just below true Egyptian capitals of all known types and dates. Again, it is possible that an intermediate form is recognisable between the types of Greece and Rome, but the evidence is insufficient to base a theory on. Certainly there is another similar capital near Alexandria, lying on the beach some half-mile to the south of Nelson's Island and the Bay of Abu Kir, so like this one in size and workmanship, so far as can be judged (for it has suffered much from the action of sea-water), that it might well have been another of the same range as that in the Museum. No more than this could be said, if it were not for abundant evidence that here, upon the shore, some 15 miles from Alexandria itself, there was at one time a place of considerable size, possibly a pleasure resort (Canopus is known to have existed somewhere in this neighbourhood); for the shore-line is broken up into a series of small, well-protected and almost landlocked bays with sandy beaches separated from one another by low headlands of coral rock, forming safe and delightfully picturesque bathing-places. Overlying the coral there is a softer rock, little better than compacted sand, which forms a low cliff, nearly vertical, and against this as a backing there have been buildings in the Roman period, extending out towards and in some cases into the sea. For a length of close upon a mile there are constant evidences of this, the escarpment being in some places given a facing of Roman tiles (or bricks), sometimes plastered on the surface, and sometimes of squared masonry; while in other places cross walls of the same materials project from the cliff towards the sea; and in yet others, and much more frequently, the coral bed has been worked in the solid into the shape of rooms with intervening walls, the present level of the floors being sometimes below and sometimes above the water level—which varies little, for there is scarcely any tide.

Most of these indications of a Roman settlement are fragmentary, and need careful surveying for their elucidation, but upon one of the promontories there is something more, the remains of what was obviously once an important building. Close to it, upon its north, there lies the Doric capital already referred to, having a diameter of 20 in., and a little further north again is a broken drum of a column, the approximate diameter of which is 22 in., of a beautiful blue marble veined with white. On the other side of, and almost adjoining it to the south-east, half-submerged in water, are great masses of worked granite, having every appearance of being portions of an attached colossal statue of Ptolemaic Egyptian character. Casual inspection from the shore could determine no more than this, though one fragment looked as if it were needed; a well-equipped party might spend some time in discovering more among the surf. So, too, it is with the building, of which a few rough dimensions only could be taken by a solitary individual having only a 2-ft. rule in his pocket, and but a short hour or two at his disposal. There would even be some danger in making a close examination of the passages through the apse walls, considering how the sea pours through; but the accompanying plan of half of this extraordinary place will indicate, with the notes made upon the spot, that it is worth close investigation. It is all submerged, it must be remembered, except the "walls," and these are not built but formed of the solid coral rock, out of which the chambers and channels have been hollowed; and the chambers are cut to a greater depth seawards than towards the shore, where they eventually rise above sea level, as if they had been the ante-rooms to an enclosed sea bathing establishment.

There is a possibility, it must be admitted, that these remains (which can hardly be called ruins, being little more than rock-cut foundations) were of post-Roman origin, with the exception of the colossal statue already mentioned; for even after the fall of Rome, Alexandria retained a great amount of its importance, rivalling Constantinople for a considerable period as the centre of the Christian faith—as it still is the metropolis, if there be one, of the Coptic branch thereof. Thus the mere presence of Roman bricks regularly built up in walls, and

of Roman masonry, can be taken as definite evidence only that the work was not carried out before the advent of the Romans. On the other hand, such evidence as there is of architectural work during the period known as the Byzantine is wholly to the effect that Alexandria was then, in an architectural sense, completely dominated by the great city on the Bosphorus. This is seen in the Museum, where there are several fine Byzantine columns and isolated capitals, equal in all respects to those of Constantinople, Ravenna, and Venice, and identical in spirit with such as would be found in either of those acknowledged Byzantine centres, of any date between the Vth and Xth centuries of the Christian era. There are, for instance, Ionic columns, with Byzantine dosserets resting on their capitals, carved with the Maltese Cross; but with the carving raised above the general surface and not sunk beneath it, as is almost invariable in Byzantine work elsewhere; but in the capitals themselves the dart replaces the tongue, and the volutes are crude. Perhaps it is only a suggestion with no proof to support it—these capitals belonged to one of the earlier Christian buildings, of a date even earlier than that of the foundation of Constantinople; for it is difficult to believe that the Byzantine style sprang into existence, without evolution by gradual degrees, complete and perfect, with the building of that city and the erection of its great domed churches. And Alexandria, alone of all the great towns of the East, can reasonably be supposed to have been the place where any such gradual change took place—subject, as it was, to many influences itself.

That for which Alexandria stands alone is, in character, late Greek or early Roman as some might call it, but in greater truth Alexandrian, typified by a form of Corinthian capital practically unknown elsewhere, but common in the Egyptian port, as the numerous examples in the Museum indicate without doubt. It is, too, one of the most beautiful forms of capital known, beyond the beauty of that generally known as the Corinthian—with little evidence that it was ever used at Corinth—which it resembles in all respects except the use of leaf volutes at the angles in place of tendrils. Thus there surely is at least a doubt whether Alexandria was not the real home of the Order. If so, the name of Alexandrian should be given to it in place of Corinthian, and the Alexandrian form should be accepted as the general type. At least its recognition, and its use with such modifications as might be called for under individual circumstances, is fully justified in modern work which apes the Classic.

ROYAL ACADEMY SCHOOLS.

The following is the list of prizes and prize-winners for this year:—Historical Painting: The City of Refuge—Gold Medal and Travelling Studentship (200l.). Margaret Lindsay Williams. Landscape Painting: Storm Clearing off on the Skirts of a Wood—Turner Gold Medal and Scholarship (50l.). Gladys M. Clark Kennedy. Landscape Painting: A Look on a River or Canal—Creswick Prize (25l.) and Silver Medal, Joan Joshua. Design for the Decoration of a Portion of a Public Building: Winter—First Prize (30l.) and Silver Medal, Margaret Lindsay Williams; Second Prize (10l.) and Bronze Medal, Florence Margaret Walden. Design in Monochrome for a Figure Picture: Samson Pulling Down the Pillars in the House of Dagon (not to be treated as a single figure work). Judges, Chap. xvi.—Armitage Prizes, First (30l.) and Bronze Medal, not awarded; Armitage Prizes, Second (10l.) and Bronze Medal, Katherine Frances Clausen. Composition in Colour—Prize (10l.) and Silver Medal, James Williams. Cartoon of a Draped Figure: Agrippina Carrying the Ashes of Germanicus—Prize (25l.) and Silver Medal, Madeline Emily Green. Painting of a Figure from the Life—First Prize (10l.) and Silver Medal, Horace Edward Quick; Second Prize, Bronze Medal, Alice Adrienne Nash. Painting of a Head from the Life—First Prize (5l.) and Silver Medal, not awarded; Second Prize, Bronze Medal, Madeline Emily Green tied with Charles Vincent Holder, who, having won the prize before, was disqualified. Perspective Drawing in Outline (open to painters and sculptors only): One of the Piers near the Queen Victoria Memorial in the Mall—Prize (5l.) and Silver Medal, no competition. Set of Four Drawings of a Figure from the Life—First Prize (15l.) and Silver Medal, Frank Crown Mitchell; Second

Prize (10l.) and Bronze Medal, Horace Edward Quick, tied with Leopold Lemaige Swain, who was disqualified, having received the prize before. Set of Three Studies of Drapery—Silver Medal, Grace Mary Hawkins. Composition in Sculpture: Rescued—Gold Medal and Travelling Studentship (200l.). John Angel. Model of a Design: An Act of Mercy, to include not less than two figures—First Prize (30l.) and Silver Medal, Gilbert Ledward; Second Prize (10l.) and Bronze Medal, Newbury Abbott. Tron.* Model of a Bust from the Life—First Prize, Silver Medal, Robert Peter Baker; Second Prize, Bronze Medal, Chas. Randle Jackson. Design for a Medal: A Design for a Medal to Commemorate the Coronation, with an Enthroned Figure on one side and an Allegorical Design on the other.—Prize (5l.) and Silver Medal, Edmond T. Wyatt Ware. Set of Three Models of a Figure from the Life—First Prize (15l.) and Silver Medal, Robert Peter Baker; Second Prize (10l.) and Bronze Medal, James Booth.* Design in Architecture: The Hall of a City Company—Gold Medal and Travelling Studentship (200l.). Alan Binning. Set of Architectural Drawings—First Prize, Silver Medal, Walter Llewellyn Clark; Second Prize, Bronze Medal, Augustus Gaffett Bryett. An Architectural Design—Prize (20l.) and Silver Medal, James Mitchell Whitelaw. Set of Drawings of an Architectural Design—First Prize (15l.) and Silver Medal, Verner Owen Rees; Second Prize (10l.) and Bronze Medal, Cyril Farcy. Perspective Drawing in Outline (open to architects only): The "College" at Westminster School, containing the Dormitory, exclusive of the Sanatorium at the south end, but inclusive of the entrance and stair at the north end—Silver Medal, James Gough Cooper. Original Composition in Ornament (open to architects only): Prize (5l.) and Silver Medal, Thos. Penburth Bennett. Architectural Design with Coloured Decoration: The East End of a Memorial Chapel—Silver Medal, no competition.

Landseer Scholarships in Painting and Sculpture, of 40l. a year each, tenable for two years, have been awarded—in Painting to Archibald G. Barnes and Katherine F. Clausen, in Sculpture, to Robert P. Baker; and for one year in Sculpture to James Booth and Alfred Wilkinson.

GENERAL NEWS.

Professional Announcement.

Mr. W. L. Lucas is moving into new offices at 9, Great George-street, Westminster.

Architectural Assistants at the Office of Works.

In Friday's Parliamentary Papers Mr. Snowden asks the hon. Member for Southampton to represent the First Commissioner of Works, whether, before any steps are taken to place any of the class termed architectural assistants engaged in the Office of Works on the established list, the desires of all who are eligible will be ascertained, so that all of the class shall have an opportunity, if they so desire, of being placed upon the established list.—Mr. Dudley Ward says the answer is in the affirmative.—Mr. Snowden further asks whether the Treasury regard the technical certificate of the Board of Works Commissioners, granted to each member of the architectural assistants, as being equivalent to the certificate granted by the Civil Service Commissioners to the class engaged upon similar work and termed assistant architects; and if it was intended to carry the same privileges of establishment, equivalent pay, superannuation, and regular annual increment.—Mr. Dudley Ward replies in the negative to both questions.

The Aldwych Site.

The House of Representatives and subsequently the Senate of the Australian Commonwealth, according to a message through Reuter's Agency, have approved the decision of the Federal Government to purchase the freehold of the eastern portion of the Strand-Aldwych site for the sum of 364,000l. It is proposed to erect upon the site a building for the official headquarters of the Commonwealth, and probably also of some of the Australian States. The cost of the building is estimated at 225,000l.

* Disqualified, having received the prize before.

A notice of a motion to be put to the next meeting was read, having for its object a reduction in the number of members required to form a quorum at special meetings.

Royal Institute of the Architects of Ireland.

The annual general meeting of this Institute was held at the Rooms, No. 31, South Frederick-street, Dublin, on Thursday last week. In the absence of the President, Mr. R. Caulfield Orpen, B.A., F.R.I.A.I., Vice-President, occupied the chair. There were also present:—Messrs. J. C. Wilmot, L. McCallaghan, J. A. Geoghegan, F. Hayes, W. H. Webb, T. J. Cullen, F. G. Hicks, J. H. Mitchell, H. Alberry, A. G. C. Millar, P. J. Lynch, F. E. Sparrow, G. L. O'Connor, and C. A. Owen, Hon. Secretary.

The Hon. Secretary read the report of Council for the year 1911. A discussion ensued regarding several of the matters referred to, and the report was adopted on the motion of Mr. Wilmot, seconded by Mr. Lynch.

The Hon. Treasurer, Mr. F. Hayes, submitted his statement of accounts, showing that the Institute continues to be in a sound financial position.

The Chairman read the report of the scrutineers of the ballot for Council, and declared the following gentlemen duly elected for the year 1912:—Messrs. C. H. Ashworth, J. P. Sheridan, J. H. Webb, L. O'Callaghan, F. G. Hicks, H. Alberry, W. Kaye-Parry, A. G. C. Millar, W. A. Scott.

Liverpool Architectural Society.

At the meeting of the Liverpool Architectural Society on Monday, December 4, a paper by Mr. W. H. Ward, A.R.I.B.A., was read, entitled "Renaissance Church Architecture in France," the paper being illustrated by excellent lantern slides. The President of the Society, Mr. Arnold Thornely, F.R.I.B.A., was in the chair, and a vote of thanks to the lecturer was proposed by T. E. Eccles, F.R.I.B.A., and seconded by Mr. Gilbert Fraser, A.R.I.B.A.

Glasgow Technical College Architectural Craftsmen's Society.

At a recent meeting of the Technical College Architectural Craftsmen's Society, Glasgow, Mr. James S. Boyd in the chair. Mr. John Crawford read a paper on "The Duties of a Foreman Mason." After describing the preliminary operations, the importance of accurately setting out the main lines of the proposed buildings, and several methods of doing so were fully explained. Excavations and timbering, and the careful supervision of the bedding and bonding of foundations, walls, and columns were dealt with. Mr. Crawford emphasised the importance of good dampcourses, the ventilation of floors, also panelled and lath and plaster walls, and the building of vents to prevent down draught. The care to be exercised in erecting various kinds of walling, masonry, and circular windows, stairs, etc., was fully dealt with. The lecturer also explained the ordinary routine in building contracts, of ordering, taking delivery, and checking the various materials required.—Discussion allowed.

ENGINEERING SOCIETIES.

The Institution of Civil Engineers.

At the ordinary meeting of this Institution on Tuesday, the 5th inst., elections of new members, Associate members, and Associates, transfers of Associate members to members, and admission of students were reported. Five members were elected, i.e.:—J. Adam, D.Sc., Edgbaston, Birmingham; W. Firth, Electrical Engineer's Office, Great Eastern Railway, Liverpool-street, E.C.1; H. E. Mitton, Codnor, near Derby; L. P. D. Taylor, Moulake; H. Wadale, Gateshead-on-Tyne. One hundred and thirty-three Associate members were also elected.

BOOKS RECEIVED.

THE STORY OF FORD ARREY. By Sidney Heath. (London: Francis Griffiths. 10s. 6d. st.)
A HISTORY OF ARCHITECTURAL DEVELOPMENT. By F. M. Simpson. (Longmans, Green, & Co. 21s. net.)

THE SOCIETY OF ARCHITECTS: ALEXANDRIA, ITS PLACE IN ARCHITECTURAL HISTORY.

At a meeting of the Society of Architects on Thursday, Mr. G. A. T. Middleton, A.R.I.B.A. (Past Vice-President, Hon. Librarian), read a paper, entitled "Alexandria: Its Place in Architectural History," of which the following is an abstract:—

"On account of its geographical position and fine natural harbours, easily made more safe by artificial means, Alexandria has necessarily been the most important seaport of Egypt for many centuries, while it was for a considerable period one of the very greatest cities of the civilised world. This was during, and extended beyond, the fourth important building epoch in Egyptian history, that known as the Ptolemaic, its greatness lasting from the days of Alexander the Great—say, roughly, from 330 B.C.—to the VIlth century A.D. Near as it is to Cairo, there seems to be no evidence that it was a place of importance when the pyramids were building, 4,000 years before that time, nor even during the Protodoric or the Theban periods; but at the later date referred to, when there was a renaissance of Egyptian architecture at Edifu and Philae so closely resembling the Theban work of Karnak and Luxor as not at first acquaintance to be easily distinguished from it, Alexandria was at the height of its prosperity. It occupied a position where many influences met. It was founded and colonised almost entirely by Greeks at first, these being afterwards augmented if not supplanted by Romans; and it traded with all parts of the Eastern Mediterranean by sea, and simultaneously up the Nile with Egypt, and by caravan even with Assyria and Babylonia.

Thus it was the natural meeting-place of many influences, particularly at the time when Greek art was declining and the Roman scarce developed; yet not much is known of it, and the archaeologist and the inquirer into the evolution of architectural forms had troubled little about what its ruins might have to tell; for, not once but several times, it has been ravaged and destroyed, and the remains of its former glories are comparatively few, and the actual dates of such fragments as have been discovered can by no means be determined with precision. Even the buildings of which they formed a part can, as a rule, be only guessed at, so complete has the destruction been, and apparently so scant the care taken to record, even approximately, where the remains have been found; the site of the ancient city being now occupied by a modern town, partly Arab and partly European, or submerged beneath the waters of what is called the old harbour (now ceased by a sea-wall), while a new harbour with great wharves and quays occupies a large area to the south of it. Excavating and investigation have been unmethodical and spasmodic, and far more frequently undertaken for the purpose of utilising the masonry of former structures for the erection of new ones than for archaeological research. Even at the present time a low hill, honeycombed with catacombs, is being quarried away bodily to provide stone for a new quay in the harbour, which is to become the Mediterranean terminus of the Cape to Cairo railway.

In such circumstances it is to the Museum that a visitor naturally turns first for enlightenment; to be met, to a certain extent but not entirely, by disappointment. It contains, it is true, numerous objects, possessing both interests and beauty, arranged with considerable regard to artistic effect; but it is necessary to make one's own deductions from them. Of orderliness in the scientific sense there is little, for, though here and there an attempt has been made to collect statuettes or architectural features into groups, there has been scarcely any effort to differentiate with regard either to probable date or to locality of discovery—in most cases probably unknown. The descriptions attached to the exhibits are silent on these points, having been obviously composed by one who was more enthusiastically an art critic than as an archaeologist, and consisting for the most part of eulogies in French upon the beauty of the object, its contour, modelling and colour, wholly valueless to one in search of knowledge and capable of judging of these things for himself. It is only possible, therefore, to accept the collection as being

Alexandrian, and to apply knowledge acquired elsewhere to the double task of first producing some order out of the prevailing chaos, and then discovering in what way and to how great an extent Alexandrian architecture was influenced by what went before it, and how it afterwards influenced what was to come.

The lessons learnt, if not many, are by no means insignificant, but before those of the Museum itself can be fully understood it is necessary to pay a visit to the principal catacombs, which are under the control of the Museum authorities. The central chamber, reached by a spiral staircase from the surface, and cut in the solid rock, is said (on doubtful authority) to be the tomb of Caracalla and his wife. At any rate, its entrance is flanked by indifferent statues of a Roman Emperor and Roman lady; but these are probably of later workmanship than the chamber itself, as are also certain obviously Roman sarcophagi and Roman urns. The architecture and sculptural embellishments of the room and its immediate approach are of the most mixed character imaginable; but they agree in their indications of date, and leave little doubt about the work having been done, most of it, about 200 B.C.

Just as it is not surprising to find purely Egyptian characteristics in the ornament of the catacomb chamber, so is the presence of Greek feeling only what might be expected. Essentially, Alexandria was a Greek Colonial Settlement, if not at one time the greatest centre of Greek civilisation, and the Museum contains more architectural objects of Greek spirit, both in design and execution, than almost any other in the world—all presumably local. Thus the Greek egg and tongue is a common enrichment. It is seen, for instance, on a few Ionic capitals, enriching the echinus in the usual way, while the abacus is similarly enriched with the leaf and tongue, all sharply cut after the typical Greek manner, particularly that of a somewhat later date, such as is found at earliest in the Mausoleum at Halicarnassus (350 B.C.). The shallow character of the volute also suggests late workmanship; it recalls that of the Nereid Monument from Lycia, now in the British Museum, which is generally considered to belong to the 1st century B.C. The Alexandrian examples probably belong to a period between these dates.

So far as the multitude of examples may be taken to indicate anything, however, they give the undoubted impression that the principal Greek work at Alexandria was of the Corinthian Order. It is well known that to the west of Greece, in Sicily and Magna Græcia (Southern Italy), the Doric Order was employed exclusively, while to the east, along the Syrian coast, the Ionic was used as universally. In Greece itself, as at Athens, the greatest buildings were Doric, those of secondary size and importance were Ionic, and only the tiniest and most delicate gems were Corinthian—that is, in the days of independence. Later on, when the Romans ruled, the great Temple of Jupiter Olympius was, it must be admitted, erected in the Corinthian Order.

But the recognised examples of Greek "Corinthian" are extremely few, so few that they can be numbered on the fingers of one hand. The Choragic Monument of Lysicrates, very small, has generally been considered the most typical, till the discovery of the more beautiful capitals of the internal Order of the Tholos at Epidaurus. Both of these examples have tendrils volutes springing from acanthus leaves, and so probably has the original capital, of apparently late workmanship, which was brought from the site of the Temple of Diana, at Ephesus, and is now in the British Museum. As a rule, in the known Roman examples of Corinthian capitals the tendril is stiffened and strengthened till it has more the appearance of a voluted leaf—so much so, that the gradual evolution from it, through Romanesque work, of the French "crochet" capital has been traced, in which the leaf is that of the hart's-tongue fern when partly open.

Is it possible that Alexandria was the real home of the Corinthian Order, and that the tendril volute was a mere local variation, beautiful but not essential to it? In the numerous examples in the Alexandrian Museum the tendril volute is never found, but it is replaced by a broad voluted leaf at the corners—though tendrils are used for the caulicols. The capital in this form is exquisitely beautiful and structurally strong enough for employment on a large scale—and several of the numerous examples

were before; he did not agree with that altogether. Old tiles might be cited as often better than modern ones. Mr. Bolton had given some interesting experiences on walling. As a rule, if one left a piece of plain walling, the client, unfortunately, generally wanted to cover it up. The old walling work was done in a jolly and haphazard way by men who were only partially educated in their craft. In those days the architect was the craftsman, and he was able to supervise things at leisure. Now, the ordinary contractor was not a builder, but a business man, and the architect was harassed by technical questions which were too apt to drive out questions of feeling and the smaller details, which meant so much in their collective effect.

The President announced that the next meeting will be on January 15, when a paper will be read by Mr. E. F. Strange, entitled "Alfred Stevens."

ARCHITECTURAL SOCIETIES.

Manchester Society of Architects: Science and Proportion.

At the seasonal papers meeting of the Society on December 6 Mr. Paul Ogden, F.R.I.B.A., read a paper entitled "Science and Proportion." Mr. Ogden's paper has been awaited with much interest by those who knew how thoroughly he has investigated the subject he dealt with, and at the conclusion of the paper there was keen discussion of the points set forth.

The following quotation from the Greek teacher Epictetus, said Mr. Ogden, though not exactly a text, was of value to his present purpose as evidence of the Greek attitude of mind, and, with other quotations that would follow, shows how modern discussions of art and architecture might be regenerated.

Seeming doth not for every man answer to Being; for neither in weights nor measures doth the bare appearance content us, but for each case we have discovered some rule. And here, then, is there no rule above seeming? And how could it be that there were no evidence or discovery of things the most necessary for men? There is, then, a rule. And wherefore do we not seek it and find it, and, having found it, henceforth use it without transgression, and not so much as stretch forth a finger without it? For this it is, I think, that when it is discovered cureth of their madness those that mismeasure all things by seeming alone; so that henceforth setting out from things known and investigated, we may use an organised body of natural conceptions in all our several dealings.

Few architects there are who do not use the word proportion. Some few have given us diagrams setting out buildings on interaxial lines, but none have given reasons that the employment of such lines is the essence of the matter. Interaxial lines spaced a unit apart on plan, forming equal squares, have been used for the plan; and further than this, horizontal lines for the elevations and the spacing corresponding to the ratios of the musical scale. These will be found to give an harmonious, and therefore satisfactory result. The skeleton of interaxial lines would be something like a well-tuned musical instrument on which you may play harmonious compositions should your knowledge of consonance, which to the architect means proportion, be equal to the task. Scientists assert that the ear and the eye, which are only media to the intelligence, are both affected by the same law, i.e., by vibrations. If rhythm and proportion are common to all objects worthy of the name of excellent, and if we could infuse rhythm and proportion into such objects, we should have objects which to the Greek view would be what we term "the beautiful." An ancient Greek would not understand our use of the word "beautiful." "That which is excellent," "That which is for the chief good," are the Greek views. Greek art is based on scientific reasoning. Proof may be found in Plato's "Republic," Aristotle's "Ethics," and many other works (from which Mr. Ogden quoted passages at length).

After quoting passages from Combarieu's work "Music—Its Laws and Evolution," to establish his point that music is based on science and law, and after pointing out that the same laws of proportional numbers are at

the basis of chemistry and of the spectrum, the lecturer said that we must find one common rule applicable not only to architecture, but to music, dancing, painting, poetry, and all objects. The one rule is harmony, which springs from rhythm, which in turn springs from measurable and synchronous vibrations. Buildings raised upon a skeleton of lines of proportional spacing, subdivided in measurable proportions down to the smallest ornament, might be the solution that would bring us unity and harmony. Objectors ask, "Should all the buildings in one street be on one unit?" The reply was, "It is desirable that they should have proportional units." He had that night brought before them by means of extracts from unusual sources, theories, and principles, the result of reading outside the beaten track. Further investigation is necessary before the true principles could be gathered together.

He had not yet put up a building without using the method of interaxial lines and the work is set out by rods cut to the length of the unit. For cottages he used a unit of 3 ft. 3 in.; houses, 4 ft. to 5 ft.; schools, 5 ft. 3 in.; works, 10 ft., 15 ft., and 20 ft.; furniture and ornament, some measurable unit of the main unit.

Diagrams would not be given that night; they would be useless unless that which was adduced had been enough to justify continuing the work. We have lost the nature of Greek practice. Can we regain it? The law of numbers rules the world; the properties inherent in vibration, measurable, synchronous, harmonious, rhythmic, and in consonance, are the essence of the chief good in life.

Professor Capper, in moving a vote of thanks to Mr. Ogden, said that they were grateful for the patient research that the paper was evidence of, and admired the way the lecturer had brought his wide reading to bear upon architecture. He suggested that French Gothic partakes largely of classical unity and proportion, in contrast to the northern Gothic.

Mr. Sellars, in seconding, suggested that beauty depended on fitness as well as proportion, and the two were not always compatible. To a sailor a ship perfect in all her points was beautiful, because she was fittest for her work. In building, beauty was again fitness; when we have fitness we could reduce it to a rule, but with new habits and methods of construction growing up, what becomes of our rules? Rules may be good for the weak, but the strong will drive his coach and six through them.

Mr. Corbett thought that a general rule would be either too wide to be definite, or too narrow to be universally applicable. Greek conditions were different to modern conditions, but even their exactness was more to please their mathematicians than their artists. We must trust our trained sense.

Mr. Oldham felt that art was joy in life; but Mr. Ogden's conclusions were in contradiction to this.

Other speakers were Messrs. Hindle, Harris, Worthington, Wood, and Halliday, and after the discussion the vote of thanks was heartily accorded to Mr. Ogden.

Nottingham Architectural Society.

Through the invitation of Lieut.-Col. Brewill, F.R.I.B.A., the Nottingham Architectural Society spent an interesting hour inspecting the new Territorial Headquarters on Monday afternoon, December 4. Lieut.-Col. Brewill conducted them over the building. As the Society had paid a visit during the early stages of construction it was especially interesting to note the finishing of the work.

The building is to house the five branches of the local Territorials, and the architect (Lieut.-Col. Brewill) has very cleverly arranged separate accommodation for each branch while fitting them into one whole scheme. An electric lift is provided for carrying the heavy equipment to the upper floors, and a system of telephones will be installed whereby every room can be put into instant communication with every portion of the building. The stores will accommodate at least 1,000 rifles and 600 saddles.

Stables are provided for sixteen horses, and in the sick bay is an arrangement for slinging a sick horse if necessary. The front on Derby-road has been built in red sand-faced bricks and Hollington stone. The large drill-hall is 130 ft. long by 80 ft. wide. This large floor-space is entirely free from columns and is covered with a light steel roof of 80-ft. span, with a glass skylight the length of the hall.

In this the Keith gaslight has been substituted for electric light, being, in the architect's opinion, more suitable and economical. But even then it will require eight large lamps of 300 candle-power each to light it at night.

The ventilation is through louver boards the roof always open. All floors are in Hen-bique construction, and average 3 in. thick.

Some of the party afterwards visited the site of the explosion on Derby-road by invitation of Mr. Calvert, the consulting architect.

The afternoon concluded with an inspection of Mr. Mitchell's new garage in Toll-street. In the absence of the architects (Messrs. Booker & Shepherd) Mr. Shelton pointed out the interesting features, which are, briefly, solid steel columns in the garage on the ground floor, a reinforced concrete first floor and a very interesting arrangement of the steel roof trusses due to the peculiar formation of the site, and a suspended lift for motor-cars. In this form of lift there are no guides to obstruct the floor space.

The second meeting of the Designing Club was held the following evening at the Society's rooms, under the chairmanship of Mr. E. R. Sutton, F.R.I.B.A., Vice-President. Four carefully-thought-out designs were submitted for an "Approach to a Public Park."

The visitor, Mr. H. G. Watkins, A.R.I.B.A., who had seen the conditions, gave an interesting criticism and placed them as follows:—

1. *Pro bono publico.*
2. Dorian.
3. Carbon.
4. Member for Sark.

The Chairman, in proposing a vote of thanks to Mr. Watkins and the students who had submitted drawings, urged the importance to the students of not only sending in designs, but also attending and criticising them.

The Architectural Association of Ireland.

The annual smoking concert in connexion with this Association was held in the Imperial Hotel, Lower Sackville-street, on the 22nd ult., the chair being occupied by Mr. Page L. Dickenson, M.R.I.A.I., President. One of the most successful reunions of the Association was brought to a close by the assembled company singing "Auld Lang Syne," the accompanists throughout being Messrs. J. Elvery and E. Maiben.

A general meeting of this society was held on Tuesday, the 5th inst., in the Lecture Hall at 15, South Frederick-lane, Dublin. The President, Mr. Page L. Dickenson, M.R.I.A.I., occupied the chair. The minutes of the last general meeting having been read and signed, the Committee's report for the last session was read, and its adoption proposed by Mr. C. H. Ashworth, F.R.I.A.I., who congratulated the Association on the favourable nature of the report and the cheerful outlook for the present session; Mr. J. Geoghegan seconded, and the report was carried unanimously.

Two new members were elected, Mr. W. A. Dixon and Mr. C. D. B. Ward. Professor Scott, M.R.I.A.I., then read an interesting paper on "Byzantine Architecture," illustrated by numerous lantern views of principal mosques and palaces in Constantinople and Ravenna. In the course of his remarks Professor Scott described many of the curious customs existing among the Mohammedans in connexion with their religion and ritual. The lecturer dwelt on the similarity existing between certain mouldings and details found in Byzantine work and those in early Irish architecture.

In proposing a vote of thanks to Professor Scott at the conclusion of the lecture Mr. P. J. Lynch, M.R.I.A.I., laid great stress on the fact that a careful study and wide knowledge of Byzantine architecture was a necessary prelude to the study of Irish architecture. Mr. Lynch deplored the fact that so little attention has been paid in the past to this subject, and exhorted the members of the Royal Institute and the Association to band themselves together to form a renaissance in Irish architecture, to carry on the work so well begun in a bygone age.

Mr. O'Brien Smith briefly seconded the vote of thanks to Professor Scott. In putting the motion, which was carried with acclamation, to the meeting, the President, on behalf of the Association, sincerely congratulated Professor Scott on his recent appointment to the chair of Architecture at the National University.

Fallio College Chapel.

It is understood that the Master and fellows of Balliol College have decided against the proposal to rebuild the College Chapel, against which Mr. Norman Shaw, R.A., Mr. Basil Champneys, and others have protested.

The International Fire Service Council.

A general meeting of the International Fire Service Council will be held on the occasion of an International Fire Service and Fire Prevention Congress at St. Petersburg and Moscow from May 25 to 30, 1912 (new era), to be organised by the Imperial Fire Brigades Association of Russia, and held under the auspices of the Council.

Building on Consecrated Ground.

In the Court of Arches on December 8 Sir Lewis T. Dibdin, D.C.L., Dean of Arches, sitting in the Church House, Westminster, delivered judgment in the appeal from a judgment of the Chancellor of the Gloucester diocese refusing a faculty for the erection of a church school upon consecrated land, not used for burials, in Holy Apostles parish, Charlton Kings, near Cheltenham. Sir Lewis (Dibdin) decided to allow the appeal—without order, as to costs—upon the grounds that, whilst land once consecrated cannot, in general, be used for secular purposes, in the particular circumstances before him the efficient ecclesiastical purpose and use of the proposed school buildings were, in his opinion, established.

London University.

The Principal of London University has received from the Chancellor, Lord Rosebery, a letter written to him by a gentleman, who wishes to remain anonymous, offering to erect a University College a building for:

- (a) The combined School of Architecture and Engineering, resulting from the amalgamation of the schools at present separately conducted at University College and King's College, together with the following—so far as a sum of 30,000£ will suffice—viz.:—
 - (b) Studios for the teaching of sculpture and the rearrangement of the School of Fine Art; and
 - (c) The Department of Applied Statistics, including the Laboratory of Eugenics.
- Mr. F. M. Simpson, professor of architecture, has been appointed architect for the new central laboratories to be erected at University College.

The Carpenters' Company.

The following list of candidates successfully passed the Company's Examination in masonry building construction held recently:—161 medal and Clerks' of Works Association (size of five guineas, Thos. J. Welsh; silver medal and certificate, L. S. R. Hart; bronze medal and certificate, L. Barnard, F. Boxall, J. M. Clarke, H. J. Hollands, A. C. Huffell, George Priestley, and G. E. Vincent; certificates, J. M. Brown, R. F. Bryer, G. E. Burr, E. E. Evans, J. E. Fell, A. E. France, W. E. Hall, J. W. Judson, and A. Mitchell. It is interesting to note that a large proportion of the candidates came from the provinces, and from the more distant ones.

Diaries for 1912.

Messrs. Hudson & Kearns, Ltd., Hatfield-Street Works, Stamford-Street, S.E., have sent specimens of their registered date indicating blotting pads for 1912. These blotting pads are admirable productions, and leave little or nothing to be desired. We may draw attention to the pads, 7 and 8a, both of which are very serviceable and sensible blotting pads and diaries combined.

The Saxton Portland Cement Company, Ltd., Cambridge, have sent us a copy of their neat little pocket diary for 1912. It includes an accident insurance coupon.

COMPETITION NEWS.**Technical Institute, Cardiff.**

The awards in this competition are as follows:—First premiated design, Messrs. Jones and Percy Thomas, of Cardiff; second premiated design, Messrs Cooper & Carter, of Blackburn; third premiated design, R. J. Myrtle Smith, of London; fourth premiated design, Messrs. Spalding & Myers, of London.

The designs are to be exhibited at the City Hall, Cardiff, from Monday, the 18th, to Friday, the 22nd inst.

Cottage Hospital, Wellington, Shropshire.

Of the competitive designs submitted for this building the assessor, Mr. W. L. Bernard, F.R.I.B.A., of Bristol, has awarded first place to those prepared by Mr. Leslie T. Moore, A.R.I.B.A., of Raymond-buildings, Gray's Inn, W.C.

Sheffield, Woodseats U.M. Church.

In the limited competition recently held for this new building Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, London, W.C., were successful.

Chelsea Town Hall Decorations.

Mr. Charles Sims, A.R.A., Mr. Frank O. Salisbury, Mrs. Sargent Florence, and Mr. George Woolway are the successful artists in the competition for designs for the decoration of the large hall in the Chelsea Town Hall. The inception of the scheme was due to Mr. Christopher Head, late Mayor of the borough. Mr. John S. Sargent, R.A., Mr. P. Wilson Steer, and Mr. E. A. Rickards, F.R.I.B.A., adjudicated. Thirty-seven painters competed, including Mr. Young Hunter, Mr. Lambert, Mr. Jamieson, Mr. Robert Fowler, Mr. Leist, and Miss Emily Ford. An article on the subject will appear subsequently. We understand that a further competition will be held for other decorations.

Marylebone Municipal Buildings Competition.

In our review of this competition we did not mention that the assessor, Mr. Hare, also noted as excellent designs, worthy of commendation, the following:—No. 76, Mr. William Whitehead; No. 99, Messrs. Edwin T. Hall & E. Stanley Hall; No. 121, Mr. Matthew J. Dawson; No. 126, Messrs. H. Townshend Morgan & Alan Bruce; No. 157, Sir A. Brumwell Thomas.

Stock Exchange, Toronto.

January 2 next is the day for receiving drawings, limited to architects in Toronto, for a Stock Exchange building. Mr. F. S. Baker, F.R.I.B.A., is the professional assessor.

LONDON COUNCILS.

Baronet.—Sanction has been received from the Local Government Board to the borrowing of £2,788£ towards the paving of the High-street. Plans have been passed for Mr. Cude alterations to premises in High-street. Messrs. Scott & Fraser have lodged plans for the erection of a conference hall at the corner of High-street and Fitzjohn-avenue for the Rev. H. Ennor.

East Ham. The following tenders have been accepted:—Messrs. J. H. Sank & Son, Bangor slates for swimming-bath, 9£ 15s. 6d. per 1,200; Mr. A. Sambridge, laying slates and fixing ridge for swimming-bath, 4s. 3d. per square and 2d. per foot run, respectively; Messrs. Doulton & Co., terra-cotta pier for swimming-bath entrance, 14£. The following plans have been passed:—Mr. P. Cornish, four houses, St. Olave's-road; Mr. H. C. Seymour, ten houses and shop, Haldane-road; Mr. F. Hamlett, buildings on site of Nos. 9 and 11, Cotswold-gardens; Mr. W. Stewart, additions to "General Gordon," Albert-road, North Woolwich, also house and shop, Mitcham-road; Mr. G. Clark, ten houses, WallSEND-road.

Friern Barnet.—The following plans have been passed:—Mr. J. J. Wilkinson, three houses, Cromwell-road; Mr. A. Collins, alterations to "Fairstead," Friern-lane; Mr. H. Johnson, alterations to Mickledore, Athenaeum-road.

Greenwich.—The tender of Mr. William Bailey, 40, Pelton-road, has been accepted, at 212£ 15s. 6d., for carrying out decorative and repair works at the late Leo Board of Works Offices, Old Charlton. The north side of Nelson-street is to be repaired with York paving at an estimated cost of 156£. A portion of Pelton-road is also to be repaired with granite at 150£. The tender of Messrs. Henry Woodham & Son, Sangley-road, Catford, S.E., has been accepted, at 357£, for forming and paving as a new street part of Bramshot-avenue. A plan has been lodged by Messrs. Gunning & Son for ten houses in Anchor and Hope-lane.

Hackney.—The sewer in Richmond-road is to be constructed for a length of about 517 ft. with 15-in. glazed stoneware pipes at an estimated cost of 250£. Electricity mains are to be extended at an estimated cost of 2,200£. The tender of Mr. G. J. Anderson, 26, Lower North-street, Poplar, has been accepted at

431£ 7s. 3d., for paving part of Moundfield-road as a new street. The edge kerbs and flat channels are to be done with Cornish granite. The tender of the Acme Flooring and Paving Company (1904), Ltd., has been accepted at 3,348£ 7s. 10d., for paving the carriageway of a portion of Southgate-road with Acme sectional jarrah wood-blocks 3 in. deep. This includes the laying of the foundation and repair and maintenance for seven years. The following plans have been passed:—Mr. J. Ellis, motor garage road of No. 130, Shackwell-lane; Mr. A. J. West, additions to factory rear of No. 38, Albert-road, Dalston; Mr. E. E. Fowler, additions to factory, Bull-alley, near Clevedon-street, Stoke Newington Common; Mr. T. Critt, alterations and additions, No. 55, Tottenham-road.

Hammersmith.—Plans have been passed for Mr. A. P. Killick, for the erection of shops on the site of Nos. 162, 164, and 166, King street; also for Mr. Thomas R. Somerford, for shops on the site of Nos. 150, 152, and 152A, King street.

Hemel Hempstead.—At a recent meeting of the Joint Hospital Board it was decided to invite Mr. Ivon G. Mead, Hemel Hempstead, to act as architect for the erection of the proposed new hospital.

Hendon (Urban).—The Surveyor has been instructed to prepare plans for the construction of surface water-drains in Sunnyfields-road and Sunny-gardens, at an estimated cost of 1,326£, and in Green-lane at 703£. Kerbing and paving works are to be carried out to the footpath on the east side of Brent-street at an estimated cost of 268£. The following plans have been passed: Mr. F. Howkins, twelve houses, Hamilton-road, Woodstock Estate; Hampstead Garden Suburb Trust, Ltd., additions to "Homesfield," off Erskine-hill; Mr. V. L. Reynolds, eight houses, Hordford-road; Mr. Edwin Evans, six houses, "The Crest," Brent-street; Mr. Edward Strathairn, twenty-two houses, Hollis-road; Mr. R. V. Hart, eight shops, Golden's Green-road; Mr. A. J. Edmondson, four houses, The Riding; Mr. J. Wright, offices, etc., Ramsey and Argyle roads. Second Hampstead Tenants, Ltd., eight flats, Addison-way; Mr. G. H. King, five houses, Alexandra-road. A plan has been lodged by Mr. S. J. Aish for fourteen houses.

Poplar.—Paving works are to be carried out by the Surveyor during 1912 at an estimated cost of 10,000£. A plan submitted by the Star Manufacturing Company for the erection of new workshops in Davis-street has been approved.

South Mims.—Tenders are to be invited by the Rural District Council for laying an 18-in. pipe in Station-road, Potters Bar, at an estimated cost of 122£.

Stepney.—A new 9-in. glazed ware pipe sewer is to be substituted for the existing sewer in a portion of Varden-street, Mile End, Old Town, at an estimated cost of 175£. No objection is to be raised to the proposal of Mr. J. G. Oatley for the erection of a building in Cotton-street.

Wimbledon.—A portion of the footpath on the southern side of Wimbledon-road, Balham, is to be paved with artificial stone, and the kerb and granite setts carriage entrances relaid, at an estimated cost of 423£. The pavement in front of No. 47, Streatham-hill is to be paved with artificial stone at an estimated cost of 70£. Tenders are to be invited for carrying out repairs to Beaumont-road, Southmead-road, and a part of Augustus-street, Southfield. The tender of Messrs. E. & E. Iles has been accepted for paving part of Lessingham-avenue, Tooting (footpaths with Aberdeen adamant paving); as has also the tender of Mr. Thomas Adams for paving part of North-place, Southfield. The footpaths in this case are to be paved with Aberdeen adamant and kerbed with Cornish granite. They have further accepted the tender of Messrs. P. Parry & Co. for paving Steep-hill, Streatham. Cornish granite is to be used for the kerbs and Victoria indurated paving for the footpaths. Plans have been passed for Mr. G. R. Fletcher for additions to St. Simon and St. Jude's Roman Catholic Church, Hill-side-road, Streatham; also for Mr. A. H. Batley for a cinematograph theatre and four shops, Mitcham-road, Tooting.

Watford (Rural).—Plans have been passed for Messrs. J. Dickinson & Co., Aldenham, for an extension to the retail stores at Holmfirth Mills, also for extensions to the book department at Apsley Mills.

Watford (Urban).—The following paving works are to be carried out at the estimated costs stated: One side of Malden road, 855£; part of Lower Paddock-road, 128£; footpath, King-street to Wigen Hall-road, 104£. Paving works are also to be carried out in fourteen other roads, and application is to be made to the Local Government Board for sanction to borrow 5,536£ to carry out the work. Tenders are to be invited for carrying out the work.

of the Balmoral-road sewerage and the Calow Land storm-water drainage. Application is also to be made to the Local Government Board to borrow 2,134l. for the erection of a public convenience in Church-street. The tender of Messrs. Froude & Dawson has been accepted at 25l. 4s. for the supply of 6,000 Hickman's Stourbridge firebricks. Plans have been passed for the Trustees of St. John's Institute for a new parish hall in Escourt-road.

West Ham.—The following plans have been passed:—Mr. J. R. Moore-Smith, alterations and additions to St. Peter's Church Hall, Neville-road, Upton Park; Mr. A. Single, rebuilding workshop and warehouse, rear of No. 29, Hubbard-street, West Ham; Mr. A. Smith, alterations and addition to Aerated Candy Company's premises, Tramways-avenue, Stratford.

Wimbledon.—Repairs are to be carried out to the carriageways of six streets, and to the footways of a portion of St. John's-road, at a total estimated cost of 664l. The tender of the Improved Wood Paving Company, Ltd., has been accepted at 85l. for paying the margins of the carriageway of a portion of Merton-road. Tenders are to be invited for the enlargement of the Administrative Block at the isolation hospital. The Borough Surveyor has been directed to prepare an estimate of the cost of making-up the back passages of each block of houses on the Ashengrove Estate with granolithic paving laid *in situ*, and with slab paving. Plans submitted by Mr. P. E. Story for additions to the Court House, Queen's-road, and by the Temperance Billiard Halls, Ltd., for a billiard hall in Merton-road, have been passed. Mr. R. J. Thompson has lodged a plan for five shops in Hartfield-road.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White, Chairman, presiding.

LOANS.—The Finance Committee recommended and it was agreed that a loan of 10,000l. should be made to the Hammersmith Borough Council for electricity undertaking, and a loan of 1,236l. to the Westminster City Council for contribution towards street improvement.

NEW SCHOOL.—It is proposed to erect a new school on a site in Marylebone, to provide accommodation for 768 children.

THEATRES, ETC.—The following drawings have been approved by the Theatres and Music Halls Committee:

Camden Theatre, High-street, Camden-town—construction of a permanent cinematograph enclosure.

87, High-street, Notting Hill (Electric Palace)—provision of a rewinding-room.

London Coliseum—minor alterations to the dressing-rooms and offices.

London Palladium—adaptation of certain rooms in the basement for use as dressing-rooms.

The Playhouse—new stage entrance.

Royal Academy of Music, Marylebone-road—provision of additional lavatory accommodation.

Surrey Vaudeville Theatre, Blackfriars road—alterations and additions to stage electrical arrangements.

A new cinematograph hall is to be erected on a site in High-street, Fulham, adjoining the Territorial drill hall.

CORRESPONDENCE.

National Insurance.

SIR,—I have been hoping and expecting some Member of Parliament understanding finance and business, or some leading member of the builders' societies, or one of my own profession who is a leader in the practice of architecture as well as the art of it, would take up with vigour and ability the matter of the National Insurance Bill of the Government, showing how it would affect the great business of building in this once flourishing country of ours. But there seems no stir. All are expecting, I suppose, it will "pan out all right," as usual, without "fussing."

I write solely with a view of getting some able man amongst the whole of those engaged in the building trade, including, of course, architects who get their livelihood from it, to devote some of his ability to the great subject before it is too late.

Would not all of us agree that the last few years have been very bad ones for the generality of architects and all connected with the building trade? Is it not a fact that architects as a profession have had less work in their offices? Is it not also a fact that builders find it most difficult, in ordinary building competitive estimating, to obtain a contract giving fair and reasonable profits? Or, in other words, is it not a reality that competitive estimates are out so low as to leave no profit to contractors if the contract is needed so as to keep the shops going, waiting for better times?

The reasons for all this are probably manifold. Among the reasons are, however, two prominent ones. Firstly, the unrest in financial confidence raised by the land taxes, accompanied with threats of those being "only a beginning"; secondly, the reaction of this unrest, with silly and untruthful talk about the "idle rich," amongst the working-men who get more pay for less work than formerly.

(Let me insert here in parentheses that no one objects to workers getting the best of wages if they will only give the best of their capacity in return.)

If the above is to-day the condition of the building trade with the want of confidence in financial circles, whence must come our employment, what will be the state of things if the National Insurance Bill becomes law? Is it thought likely the working-classes will quietly have threepence or fourpence taken weekly from their wages, possibly for their own benefit, but certainly for the benefit of the unfortunate ones? There will be strikes and threats of strikes against any deductions, which, even in the very best results, must make builders' expenses greater than ever. Thus are the expenses of buildings increased, which, in plain English, means there will be fewer buildings erected, reacting to the detriment and loss of architects, builders, and workmen.

In this Insurance Bill the workpeople provide a part, the employers a part, and the State a part. "The State" is only the taxpayer, and the biggest taxpayer individually is the employer, so the employer pays two parts. It will end in the employer paying the three parts. But if he pays in the main only the two parts, the cost of building by him must necessarily be increased. Less building will ensue in any case.

Further, by the want of the old confidence in the finances of the Government undertakings the price of Consols is lower than ever. Much of the reserves of most companies—insurance companies, banks, etc.—have been invested in Consols. Consequently, if Consols, by unwise legislation, get lower and lower, the value of these reserves get lower and lower, and the balance has, in sound finance, to be provided out of the margins or profits which might, and to a great extent would, be in hand for expenditure in buildings. On this head turn, for example, to a great Government Department, the Savings Bank. There we have a deficit by the reduction in the price of Consols (on account, to a great extent, of broken confidence in Government proposals and in reduced security) of over forty millions sterling, and this would have to be found by the taxpayer if the accounts were called in. But what has the price of Consols to do with building? A great deal, for if the great lending companies are losing in the value of their reserves, reducing their spending and their lending in consequence, the building trade is one of the very first to suffer.

Now let me return to the Insurance Bill. It is to be worked greatly through the friendly societies. It costs these societies to work their present business from 25 to 45 per cent. in expenses. And this new compulsory National Insurance business will presumably cost proportionately almost the same, say, an average of 30 to 35 per cent.

It is computed that there will be 16,000,000 contributors, each one of which will need a separate ledger account. Just think of it. Who is going to pay for this work? At 30 per cent. the cost will be 5,000,000l. per annum, and this, as well as the weekly taxation per head, is to come out of the taxpayers also, which means mostly the employer. How can the building trade bear its proportion of this additional taxation and burden and have any of its old prosperity returnable to it?

Will not some energetic and able man take up the subject, or will not some enterprising building newspaper use its power to have a comprehensive, clear, definite protest made by the entire profession and trade against this extra burden being laid on business enterprise?

I appeal to you, the architectural profession and the building trade generally, to be doing something before it is too late, and to make our united voice heard. CHAS. HEATHCOTE.

False Economy.

SIR,—Your article of December 1, entitled "False Economy," may perhaps lead house owners to a few salutary conclusions:—

(1) That bricks and mortar are, of their very nature, a "wasting" security, for which prudence demands a sinking fund, so that the capital value of the building may be replaced in, say, sixty years' time. Thus, assuming a house and garden to be let for 100l. per annum, the value of the building itself being 1,200l., if the owner sets aside 7l. 7s. per annum to form a sinking fund at 3 per cent. compound interest, the capital cost of the house will be recouped in sixty years, by which time the utility of the original structure is probably exhausted. Owners have only themselves to blame if they treat rentals as permanently secured net profits and make no provision for the inevitable depreciation.

(2) That great foresight is needed in house design to avoid undue or accelerated depreciation. Freaks and crazes are to be shunned; the fashion for excessively low rooms is obviously only a passing one; tiny windows which produce charming pictures posted from the outside are not likely to remain fashionable for long, in defiance of common sense, for, after all, common sense is the tortoise that in the long run outstrips that rapid and brilliant artist the hare.

(3) That especial care and skill are needed in building a large house in poor surroundings if heavy loss is to be avoided.

I have before me a newspaper cutting describing the recent sale of a "magnificent modern house," containing twenty-five large rooms, an organ gallery, range of stabling, etc., all built at great cost in a squallid neighbourhood near the docks. It fetched at auction a sum representing about one-third of its original cost, and a better result could hardly have been expected in the circumstances.

Now, one would have thought that a mansion of this type in such a neighbourhood might well have been built with an eye to the future, so as to permit of ready subdivision when its first use was exhausted, and in many like cases architects might profitably tax their brains to design a house which, while providing roomy quarters for the first owner, should lend itself readily to conversion into smaller dwellings when the surroundings have altered.

That such a scheme presents no insuperable difficulty I could prove by quoting the case of two old country houses the effective life of which has been indefinitely prolonged by a cleverly contrived subdivision.

C. H. B., F.S.I.

The R.I.B.A. and the Associates.

SIR,—In the letter of "Associate R.I.B.A." in your last week's issue complaining of the neglect of his class by the Council of the Institute he seems to lack the courage of his opinions, for he does not make any practical suggestion for carrying out his ideas.

The whole and blunt truth of the matter is that nearly all the self-nominated members of Council take no broad interest in the general welfare of the profession; no businesslike methods are adopted for the "betterment" of the members or their status in the world, only petty domestic matters are entertained, apparently for the benefit of "Members of Council." But surely something more is expected from them than merely appointing each other as "professional assessors" (with large fees) or nominating well-known men as competitors for important works?

This state of affairs is due entirely to the want of interest shown by the general body of members in the affairs of the Institute, men who are always complaining, outside, over real or supposed evils, but who have never the courage to attempt to remedy them and show fight—fight to obtain a more representative Council, a body of active, earnest business men who would put life into the Institute affairs and who would try to raise the status of our noble profession and make it respected by public opinion; but this will never happen thoroughly until we obtain Registration.

Year after year the question of Registration (to which the Institute is pledged) is stonewalled and shelved for some reason or other—first for a new Charter, then to form at hermaphrodite class called "Licentiate," now again to obtain an amended Charter to allow members of a more pushing rival society to enter into our gates; yet nothing really useful has been done, and nearly all the old family circle are sitting snugly round the Council Board playing all the good things the architectural world can supply.

Some few years ago a revolution took place through the efforts of a "Registration Committee," formed from among the Fellows and associates—to which Committee I had the honour to belong. Thanks to that Committee, we were enabled that year of its existence to elect a good working Council; but, alas, its wholesome influence soon died out and we all got into the old milk-and-water methods that we suffer from to-day! Drift, drift—a noble ship with a sleepy crew!

As the Associates largely outnumbered the Fellows, nearly two to one, it is only reasonable now that they should be equally represented on the Council, and I intend bringing forward a resolution to this effect at the next business meeting of the Institute on January 8, 1912, and to also propose that the so-called "House List" issued by the Council, wherein they nominate each other for election or re-election, be abolished, and rely on every Associate who can to attend at meeting and support that resolution.

HORACE T. BONNER.

SIR,—It was with pleasure that I read the letter by "Associate R.I.B.A." dealing with new regulations with regard to "Lic.R.I.B.A.," which appeared in your last issue.

I fully concur with the views expressed therein. The I.R.B.A. Council seem to ignore entirely all the claims of their Associate members, and no one who has attended any of their meetings can fail to observe that it is the feeling and wish of the select few which they carry or rejects a proposal.

Needless to say, this "clique" is devoid of Associate members. Cannot the Institute, represented by the Council, be persuaded to descend occasionally from the ethereal to the practical, and in place of learned treatises on the "Influence of Egyptian Architecture on Modern House Planning," and such ultra-interesting topics, to give a little consideration to the problem of A.R.I.B.A.'s who have hard work to keep themselves in shoe-leather? After a course of more or less arduous study a candidate who satisfies the examiners of the Institute is allowed, for the sum of £2s. per annum, to consider himself an associate of that body. He is then shelved away, and only considered when his subscription is in arrears.

Surely it is not unreasonable that an associate who has become a member by way rather than by the back-door should demand on his Institute some sort of consideration. We are not all shining lights in the profession, but we are the backbone of it when it is a question of doing the work.

It is unpleasant to make the above statements, but I fear they voice the sentiments of the greater number of Associates.

Things have been taken lying down long enough, and some such Guild as your correspondent suggests might in time become strong enough to stem the tide.

ANOTHER ASSOCIATE.

SIR,—In answer to the letter of "Associate I.B.A." in your last issue, I wish to inform you that a "Committee of Associates" was formed six months ago to protect the interests of that class, and I shall be pleased to give you information in connexion therewith to members of the Royal Institute.

WILLIAM H. BURN.
Hon. Secretary, Committee of Associates,
14, Southampton-street, Strand.

Official Architecture.

SIR,—From the reply of the First Commissioner on the 7th inst. in the House of Commons, it would appear that the Commissioners of the Office of Works do not regard their own certificate of Technical Efficiency as being of equal value to the similar

certificate issued by the Commissioners of the Civil Service.

Now the former was issued to those of the "Architectural Assistant" class whom they regarded as being of such good service as "draughtsmen" as to be worthy of it after, at the least, twelve months' examination (this being the probationary term for all entrants to the department) with dismissal for inefficiency to follow during all that period, and, indeed, during all the period of their previous service. Whereas the latter certificate was obtained for six days' examination at Burlington House in matter foreign for the most part to the required duties afterwards.

The importance of the value of the certificate in question is apparent, having regard to the latter part of the First Commissioner's reply to a question in the House on the 24th ult., wherein he speaks of the "consequent sacrifice of present income which would be demanded by the regulations." The Architectural Assistants are, in addition to establishment, asking for a more adequate rate of remuneration for their professional services than the majority now obtain; and they submit that the regulation should not be enforced in this special case, seeing that it was framed previous to the formation of any such class as the one in review, i.e., a temporary one with a Technical Certificate in addition, for the latter instrument in past cases carried with it the permanent position, and in this respect the class is unique, and unique treatment should be accorded it.

But with the latter certificate (that of the Civil Service Commissioners) the "temporary draughtsman" (or employee under the age of thirty and minus the Board's Certificate), have, in most cases, actually doubled their salaries from £2l. and less, to £4l. per week at one bound. The "Architectural Assistant" class ask for a lesser bound from an average of the whole class of some £3s. to £4l. (and, in a few cases, from 50s. to this sum).

Perhaps a further question in the House will elicit the information for what purpose was the certificate created in February, 1907, unless for improved status and remuneration, seeing that every member of the newly-created class of "Architectural Assistants" (formerly draughtsmen) were duly accredited servants of the Board, having long since passed their probationary period, and being thus retained were, of course, necessarily efficient.

It is gratifying to know from the reply of the First Commissioner on the 7th inst. to a second question that preferential treatment, wisely foreshadowed by your correspondent last week, is not now contemplated by him which is in strict accord with Civil Service rule, which prescribes that the services of all of one class should be regarded as of equal value and to merit equal treatment.

JUSTICE.

[The replies referred to will be found in our General News column, p. 702.]

Cost of Joinery.

SIR,—Much may be said on this subject. There can be no doubt that where a foreman dominates and controls a business the way is open for irregularities, and his discipline of the shop may lead to the inference that he carries on an employment bureau.

It must be obvious in many cases that the foreman has interests that do not coincide with the firm's, and unless the office is alert serious loss may continue. Where a foreman takes orders and executes on his "own," the time-sheets are manipulated to suit the office bookings, and the workmen may be entirely innocent of any wrong; thus the costs of many jobs are inflated. This is patent where orders never see an order-book, and goods are delivered that do not appear in the day-book. "F.M." could not know that the foreman faked the time-sheet unless it came to him from the office afterwards, but it is a wise precaution to have ductile men where this is done.

Tips may have no existence, but there may be many drinks, etc., to explain much that is not strictly in line with modern up-to-date business methods.

Danger lies in allowing the foreman to manage any business. No firm can be successful if workmen control or interfere in the management.

SECOND LIVERPOOL.

Certified Plans of Houses Dating from Before the Year 1800.

SIR,—The historical value of plans of old buildings which have been pulled down has often been demonstrated, and it is of the utmost importance that these should be available for reference. Since, in most cases of demolition, surveys are made in the ordinary course of business, and copies of certified plans are lodged with the District Surveyor, it is evident that a large number of these records are actually in existence. May we, therefore, through your columns, ask all architects who have such drawings in their possession, or who may have occasion to make them, kindly to communicate with us, and, if possible, allow us the opportunity of having tracings made for the London collection? At the cost of a very little trouble a most important amount of information could thus be obtained.

PHILIP NORMAN, Chairman.

PERCY W. LOVELL, Secretary.

The Committee for the Survey of the Memorials of Greater London, 23, Old Queen-street, S.W.

Marylebone Municipal Buildings.

SIR,—In view of your very able criticism of the Marylebone Municipal Buildings Competition last week, and considering the importance of the utility of such buildings to the public, it would be very interesting matter to a great many readers no doubt if you could see your way to still further illustrate plans and details of those very earnest endeavours which your critic thinks, "happily and rightly," very meritorious schemes, viz., of those whose names he mentioned in the latter part of his article.

By them the solution of the problem governed by the conditions laid down seems to have been literally carried out to a remarkable extent, taking into great consideration the placing of the various public offices for convenient approach, as also for the convenience of the official staff.

With a proper adherence to the conditions some of these plans (in this particular competition) have been studied with wonderful care, with a due regard for exactitude and consistent with a simple and yet dignified building which I take the liberty of saying has been interpreted by some competitors as a *sine qua non*.

TRUTH.

We regret that the pressure on our columns prevents our publication of the meritorious plans referred to by our correspondent.—Ed.]

Manchester Architectural Competition for Library and Art Gallery.

SIR,—I learn from this morning's *Daily Dispatch* that the ten designs submitted in the "final" competition are to be publicly exhibited for a fortnight.

May I respectfully suggest to our Corporation the inclusion also in the exhibition of the ten "sketch" designs, descriptive reports, and estimates of cost, submitted by the same authors in the preliminary round, and which were the assessor's choice out of the 223 schemes sent in—and that obtained them this honourable position?

Doubtless also an exhibition of the "sketch" designs, etc., alongside the "final" ones would be of interest to the Manchester public generally.

G. H. WILLOUGHBY.

National Buildings, Manchester.

December 9.

FIFTY YEARS AGO.

From the *Builder* of December 14, 1861.

New Motive Power.

AN invention by Mr. Lenoir seems to meet with approval in scientific circles in Paris. It is simply the application of common gas, exploded in small quantities above and below the piston of what was once a steam-engine, the explosions being produced under regulation by the electric spark from a Rumkoff machine. The gas costs 500 litres per hour for each horse-power, ten hours' work costing about 1s. 3d. per horse-power. This invention is about to be applied to locomotives on land and water, and the gas required may be produced by the decomposition of water itself.

EDITORIAL SUMMARY.

The leading article this week is upon the work of the R.A. Students this year.

In a second article we deal with the new scheme proposed for the Liverpool King Edward Memorial (p. 694).

In our "Notes" Column (p. 695) will be found comments on: "Lady Students of Art"; "The Semi-Nude"; "The New Capital of India"; "The Object of the British School at Rome"; "Overstrand Church."

A business meeting of the Royal Institute of British Architects was held on the 4th inst., when candidates for membership were elected (p. 696).

At the combined meeting of the Architectural Association with the Camera, Sketch, and Debate Club on Monday a paper was read by Mr. Alan E. Munby, entitled "Is the Texture of Materials a Fetish?" A discussion followed (p. 696).

Short reports of meetings of the following architectural societies appear on p. 700: "Nottingham Architectural Society"; "Architectural Association of Ireland"; "Glasgow Technical College Architectural Craftsmen's Society"; "Manchester Society of Architects"; "The Royal Institute of the Architects of Ireland."

At a meeting of the Society of Architects on Thursday, Mr. G. A. T. Middleton read a paper on "Alexandria: Its Place in Architectural History," an abstract of which is given on p. 701.

The list of prize-winners for this year of the Royal Academy Schools is given on p. 702.

In our Correspondence columns (p. 704) will be found letters on: "False Economy"; "National Insurance"; "Certified Plans of Houses Dating from Before the Year 1800"; "Cost of Joinery"; "The R.I.B.A. and the Associates"; "Marylebone Municipal Buildings"; "Official Architecture"; and "Manchester Library and Art Gallery Competition."

A report of a meeting of the Model Abattoir Society is given on this page.

In place of the Monthly Review we give this week (p. 707) a comprehensive review, with many illustrations, of the Competition for the Proposed Library and Art Gallery Manchester.

An abstract of a lecture on "Early Christian Mosaics," by Mr. G. MacN. Rushforth, will be found on p. 715. It is followed by an abstract of Professor Elvey Smith's lecture on "The Early Roman Churches," both lectures being delivered at King's College (University of London).

In our Building Trade Section (p. 721) will be found: "Day Works"; "Combination among Builders"; "The Mediæval Sawyer"; "Projected New Buildings in the Provinces"; "Applications under the Building Acts, 1894-1909."

In Legal Column (p. 724) will be found comments on: "Baker v. Ingall" (Trade Union Law); "Gas Mains: Building" or "Tunnel"?; "Building Estate—Implied Grant of Right of Way"; "Waste Land by Highways."

Law Reports (p. 724) include: "L.C.C. v. Clark"; "Action by Contractors on District Surveyor's Certificate."

MEETINGS.

FRIDAY, DECEMBER 15.

The Institution of Mechanical Engineers. (1) Discussion upon "Double-Cutting and High-Speed Planing Machines," by Mr. J. Hartley Wicksteed. (2) Paper to be read and discussed (if time permits) "Oil-Burning Locomotives on the Tehuantepec National Railway, Mexico," by Mr. B. Godfrey Aston. 8 p.m.

MONDAY, DECEMBER 18.

The Royal Institute of British Architects. "The Newer Responsibilities of Architects," under the management of the Practice Standing Committee. Papers by Messrs. A. Shaxon Snell, W. Henry White, Wm. Woodward, and Edward Greenop. 8 p.m.

Victoria and Albert Museum.—Mr. Banister Fletcher on "The Later Renaissance Palaces and Churches of France." 5 p.m.

TUESDAY, DECEMBER 19.

The Illuminating Engineering Society (Royal Society of Arts, John-street, Adelphi, London).—Mr. Haydn T. Harrison on "Some Aspects of Railway Station and Goods Yard Illumination." 8 p.m.

University of London (British Museum).—Mr. Banister Fletcher on "Greek Theatres, Propylæa, Stadia, etc. Eastern Illustrations." 4.30 p.m.
The Institution of Civil Engineers.—Ordinary meeting. Paper on "Experiments on the Strength and Fatigue Properties of Welded Joints in Iron and Steel," by Messrs T. E. Stanton, D.Sc., M.Inst.C.E., and J. R. Fannell.

WEDNESDAY, DECEMBER 20.

The Institution of Civil Engineers.—Students' visit to the testing works and museums of Messrs. D. Kirkaldy & Son, Southwark-street, S.E.

ILLUSTRATIONS.

Manchester Library and Art Gallery.



Our illustrations this week are devoted to some of the designs sent in for the Manchester Library and Art Gallery competition, to which we refer at length on page 707 et seq.

MODEL ABATTOIR SOCIETY.

On Thursday, December 7, Sir James Crichton Browne presided at the Rooms of the Royal Society of Arts over a conference arranged by the Model Abattoir Society, and in the course of a most interesting address said the Society was established in 1886 by the late Sir Benjamin Ward Richardson with the object of enlightening a then somewhat ignorant and indifferent public as to the evils existing in private slaughter-houses. It had distributed literature and arranged conferences, and had given advice as to planning and construction when requested. They felt that the time had now come when they should enter on a more active propaganda, and that a demand should be made for the provision in all populous places of properly constructed slaughter-houses adequate to the requirements of the place, isolated outside the town, connected with a railway system by a branch line, and approached by wide roads, so that if cattle were driven through them there need be no interference with traffic, and so arranged as to facilitate strict skilled and unremitting supervision over all the animals brought for slaughter, and all the meat sent out. A properly conducted municipal slaughter-house run on business lines should prove a profitable municipal investment, and had already done so in several cases. Public slaughter-houses were of ancient date, for in 300 B.C. animals were slaughtered in the open-air in the Forum in Rome, which was the great centre of public business, and was adorned with temples, colonnades, and basilicas. Later, to meet the convenience of butchers, a house on the banks of the Tiber was given to them for the purposes of their trade—a genuine special public slaughter-house. In ancient Greece and Rome the temples were public abattoirs where the slaughter of animals was carried out under strict regulations, of religious origin, but really humane and hygienic in their nature. The slaughtering must sometimes have been on a large scale, as in State sacrifice victims were presented in great numbers, and at the Athenian festival in commemoration of the victory at Marathon, 500 goats were slain at one time. In mediæval times public slaughter-houses existed in many large towns in Germany under the name of *Kuttelhofe*, and these were mostly situated on rivers where copious supplies of water could be obtained, and where drainage was easy. It was not, however, until the middle of the last century that laws were enacted in Prussia and other German States empowering urban authorities to require that all animals killed in towns should be slaughtered in public abattoirs. In France, in the XVth and XVIth centuries, numerous towns possessed public slaughter-houses, but owing to their situation and neglect they became atrocious nuisances, and it was the Code Napoleon that caused the provision of suitable slaughter-houses in all large towns. In Norway and Sweden a law of 1892 required the provision of public slaughter-houses, but it had only been partially carried out. In Denmark there were public slaughter-houses in a few towns, and the one at Copenhagen, although not without defects, was creditable to the country. A recent visitor enlarged on the ample space provided—the broad avenues planted with trees, the absence of high buildings or inhabited dwellings close by, the amplitude of the pens allotted to big cattle, the careful sloping of the floors, the

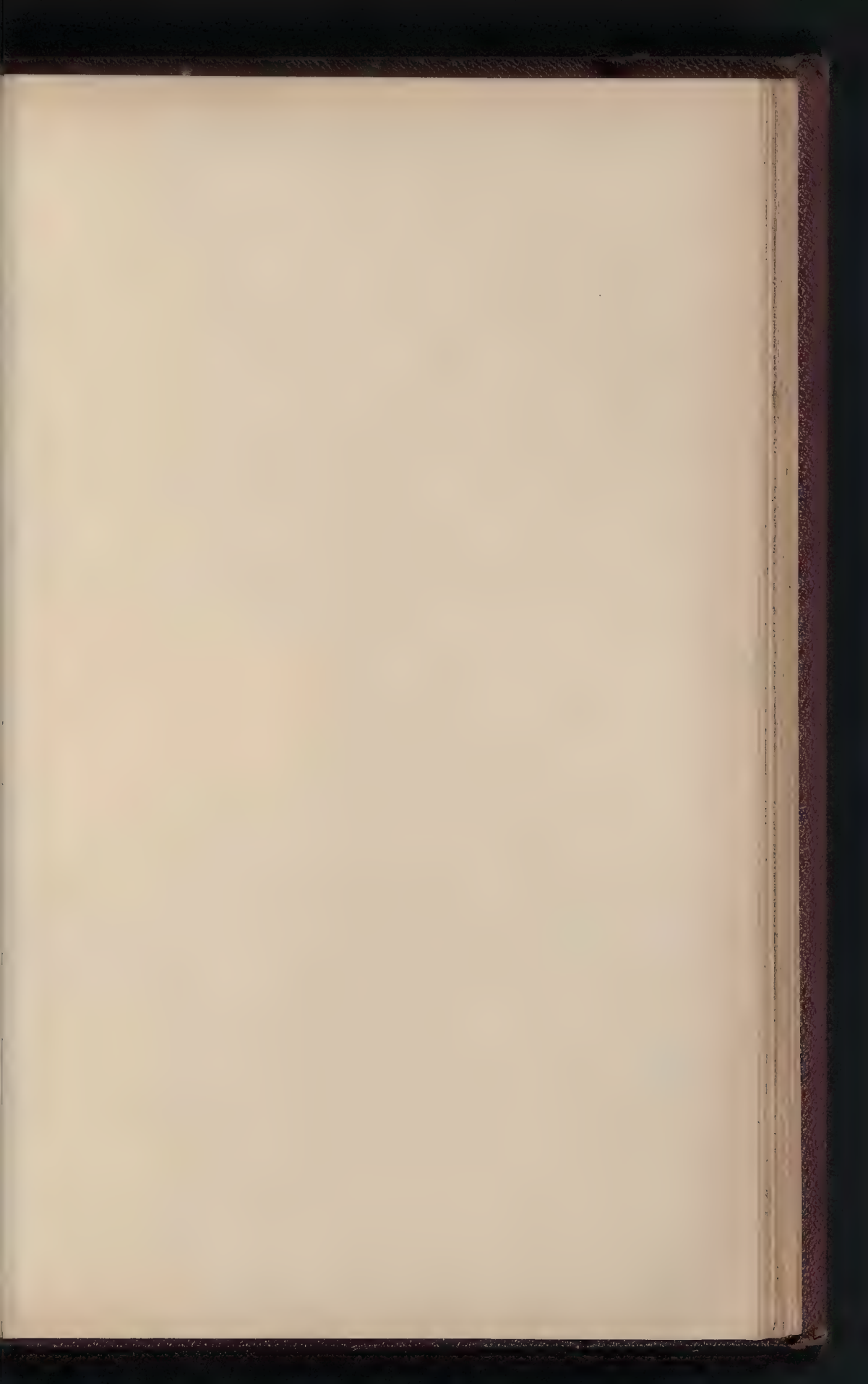
currents of fresh water passing through the separate accommodation for cattle known to be diseased, etc. In England the power to provide public slaughter-houses was given by the Public Health Act of 1848, but the authorities had no power to control the continuance of private slaughter-houses, and therefore they had been unable to ensure that public slaughter-houses when provided would be built by butchers. The policy of their Society was to make obligatory the erection in all urban places of public slaughter-houses and the removal of all private slaughter-houses from the congested neighbourhoods in which they now existed. They wanted to ensure that the public slaughter-houses and the lairs connected with them were properly warmed, ventilated, drained, and furnished with suitable conveniences for washing and cleansing. It was undoubtedly to Germany that they must turn for the best examples of slaughter-house construction and management, but in order that immediate guidance may not be wanting in this country the Society had had prepared by Mr. Ayling a model of a slaughter-house embodying all the most modern improvements to be found in Germany and anywhere else. This model, domiciled in the Royal Sanitary Institute, was exhibited in the room that evening, and was seen to any part of the country where there was an opportunity of showing it to advantage.

Mr. H. S. Ayling said that some years ago Mr. Blashill, the then architect of the London County Council, and the Medical Officer of Health, reported strongly in favour of public abattoirs, but the opposition of the trade was too strong. Recently the matter had been pressed on Parliament, the London County Council, and the Local Government Board, but practically nothing had been done. There were 243 private slaughter-houses in London, many in densely-packed neighbourhoods, and he did not think a single one of them complied with the by-laws of the Local Government Board, which recommended that there should be no slaughter-house within a 100 ft. of a residence. With regard to the construction of slaughter-houses, there were two main types: the separate chamber and the open hall, but the former was becoming obsolete. At Chatham the Admiralty had adopted a system which had the advantages of the open hall without the disadvantages. Mr. Ayling proceeded to describe the model abattoir exhibited, and said the scheme provided for dealing with about 100,000 animals per annum. The principle aimed at was to design the building to deal with the animals on hygienic and humanitarian lines, and arrangements were also made by which the bye-products, which went to waste in small private slaughter-houses, could be profitably dealt with. It was arranged that all the animals should arrive either by railway or road and enter at the back of the abattoir, and the accommodation for the various operators to deal with them was planned in such a way that there was no retracing of steps at any stage. In addition to the lairs, stunning courts, cooling rooms, buildings for the treatment of so-called offal, etc., the scheme also provided for baths and dressing and messing rooms for the staff, a residence for the superintendent, offices, lavatories, etc. Mr. Ayling said that recent writer deprecated the erection of large public abattoirs on the ground that such places were unfit for publication, and suggested that they should be enclosed by high brick walls or hidden away underground. If that idea was adopted they might get some of the advantages which the Society were aiming at. He did not see why such buildings should not have a distinct architectural character. It was true that the passer-by would be reminded of an unpleasant fact in life, but so he was if he passed a children's hospital or a home for incurables.

Considerable discussion ensued, in which Dr. Kenwood, Mr. E. H. Rowbotham, Mr. M. Myers, Mr. Apson, Mr. A. C. Brown, and Mr. C. Cash took part. The discussion ranged almost entirely round the question of the humane slaughtering of animals, and the merits of the Jewish method of slaughtering evoked some differences of opinion.

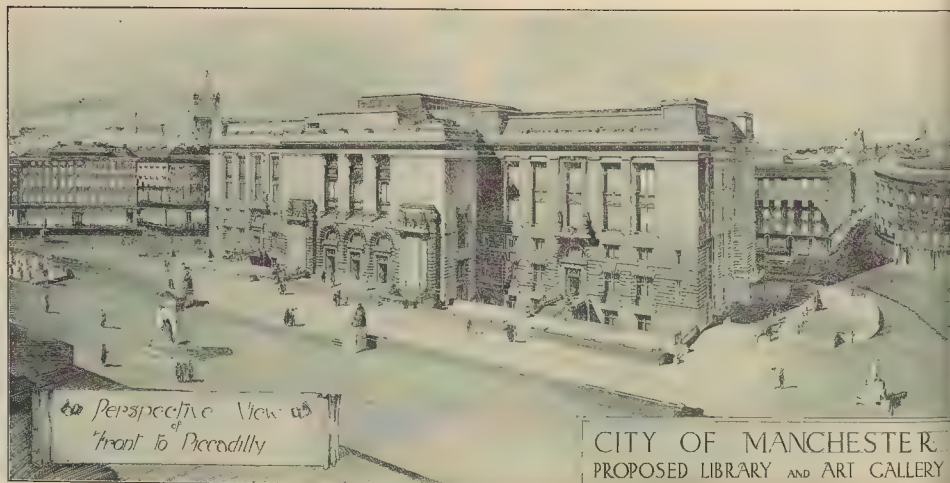
Eventually the Chairman moved: "That in the opinion of this meeting public abattoirs should entirely supersede private slaughter-houses in urban districts, and only the most humane methods of slaughtering should be permitted."

The resolution was carried unanimously.





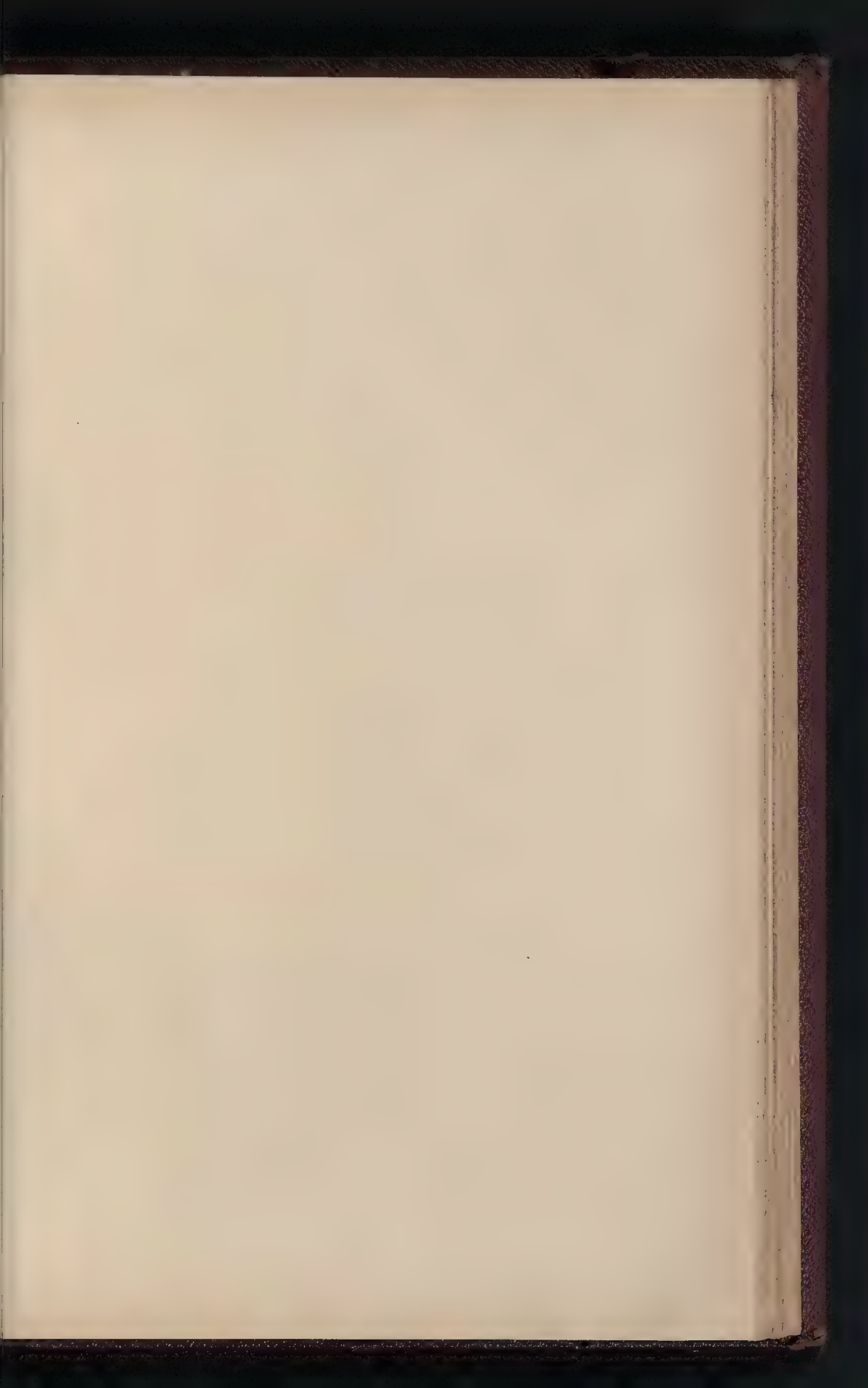
DESIGN BY MESSRS. COOPER & SLATER (BLACKBURN).

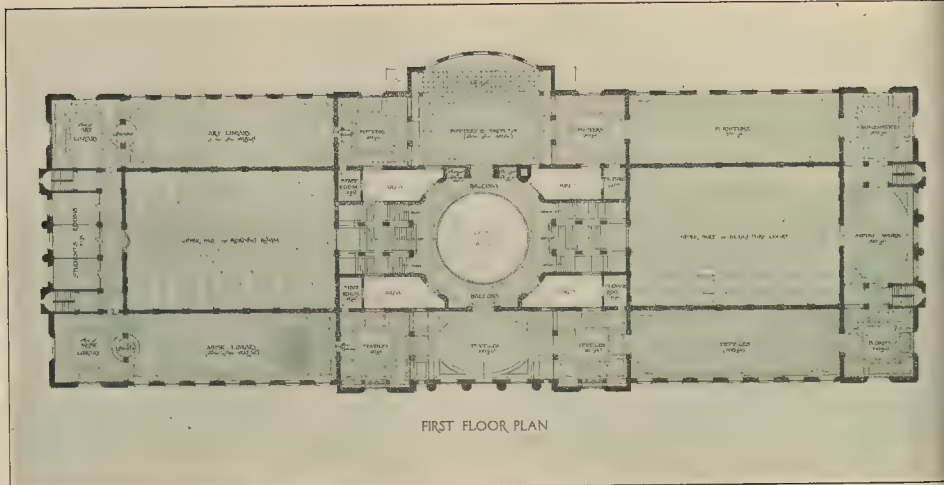
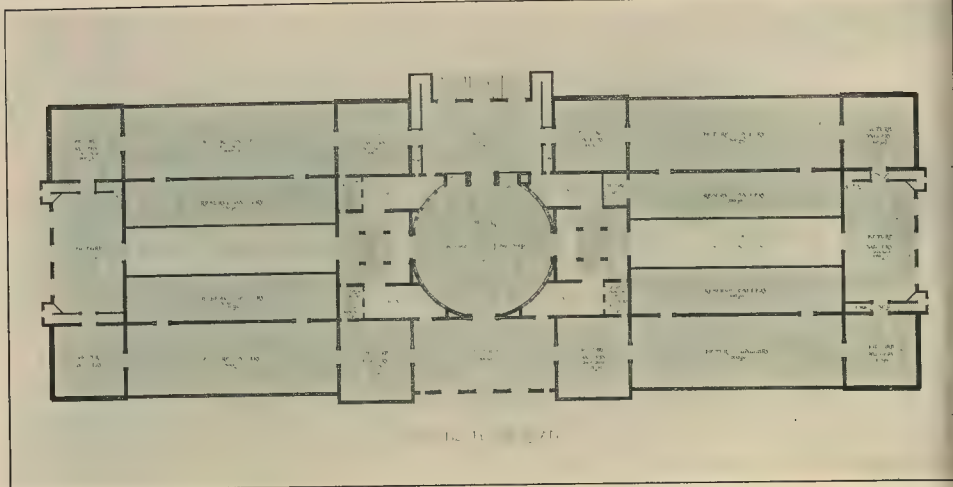


Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

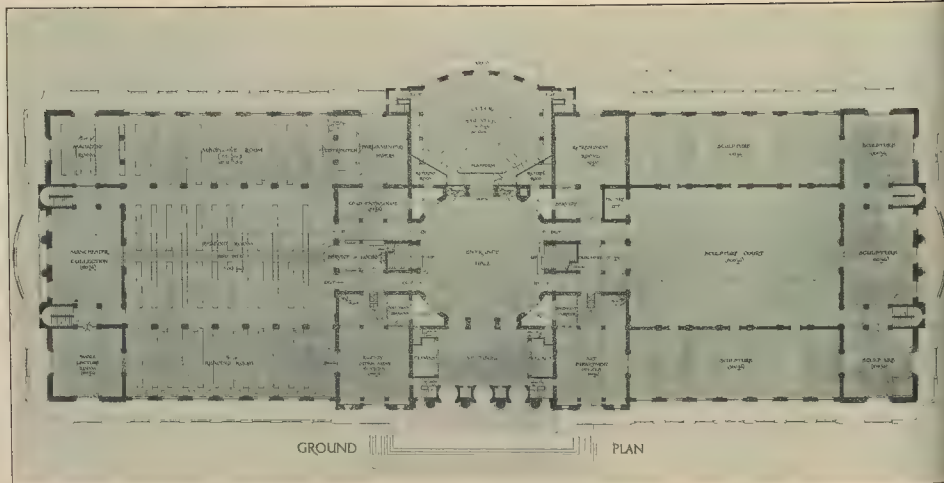
DESIGN BY MR. A. GRAHAM HENDERSON, A.R.I.B.A. (GLASGOW).

MANCHESTER LIBRARY AND ART GALLERY COMPETITION.





FIRST FLOOR PLAN



GROUND PLAN

Sprague & Co., Ltd., Printers, 46 & 48 Hart Harding St., E.C.

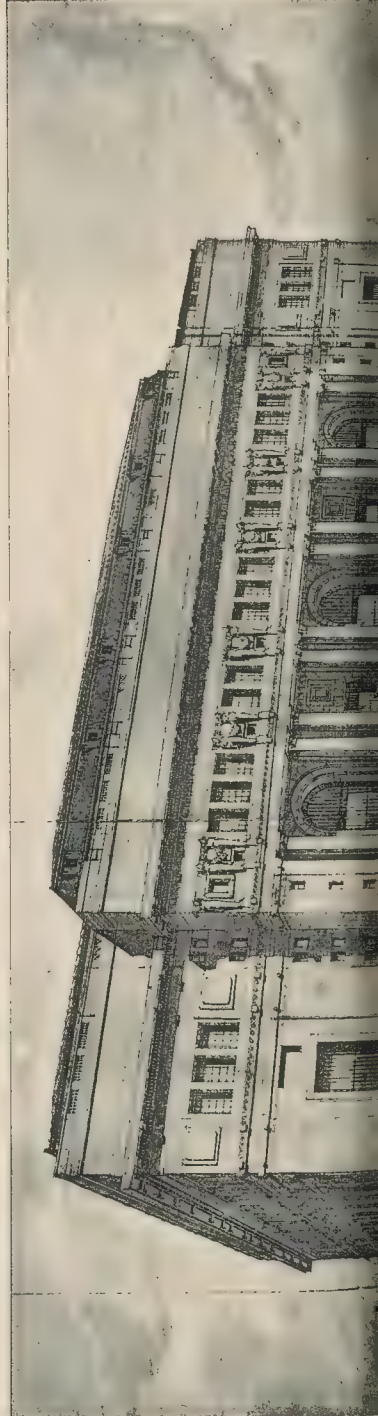
SELECTED DESIGN, BY MESSRS. CROUCH, BUTLER & SAVAGE (BIRMINGHAM).

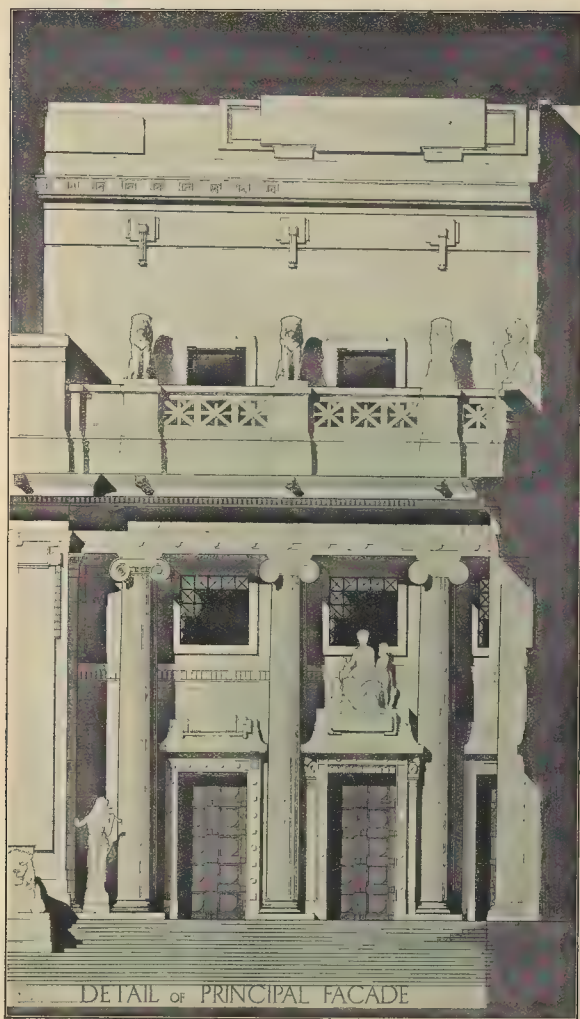
MANCHESTER LIBRARY AND ART GALLERY COMPETITION.

THE BUILDER, DECEMBER 15, 1911.



SELECTED DESIGN, BY MESSRS. CROUCH, BUTLER & SAVAGE (BIRMINGHAM).





Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

SELECTED DESIGN, BY MESSRS. CROUCH, BUTLER & SAVAGE (BIRMINGHAM).
MANCHESTER LIBRARY AND ART GALLERY COMPETITION.

THE BUILDER, DECEMBER 15, 1911.



DESIGN BY MESSRS. BRADSHAW & GASS, F.F.R.I.B.A. (BOLTON).



Sprague & Co., Ltd. Printers, 4 & 5 East Harding St., E.C.

DESIGN BY MR. R. FIELDING FARRAR, A.R.I.B.A. (LEEDS).

MANCHESTER LIBRARY AND ART GALLERY COMPETITION.

THE COMPETITION *for* LIBRARY *and* ART GALLERY, MANCHESTER.



Design by Mr. F. W. Simon (Liverpool).

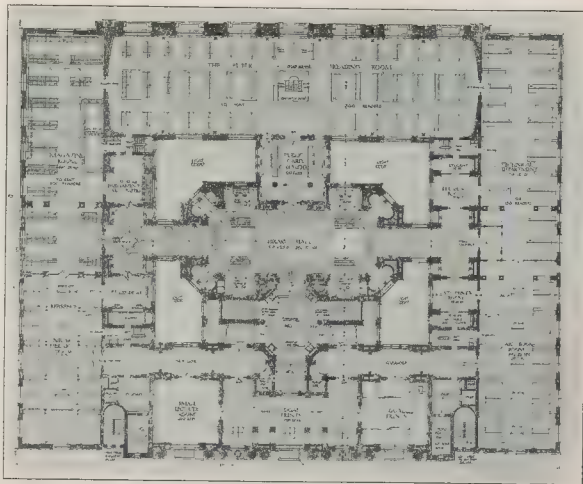
the question had been put to competitors in the above competition, "What condition presents the greatest difficulty?" the reply would have been unanimous that it was the limitation of area. Apart from the question of principal finance, this limitation seemed severe and uncalled for, and, as a result, not all of the designs exhibited, and in all ability not one of those that did not reach the second stage, is as good as it might have been had a little more latitude been allowed.

And yet this handicap, important though it does not appear to us as great, from a purely architectural standpoint, as the duty of combining the buildings necessary for two distinct and practically separate institutions in one design that must, according to all recognised ideals, possess a monarchical homogeneity. It is an oft-repeated axiom that a building should express its use, and, though this axiom has been the stalking-horse for numerous difficulties, it really rests on a sound basis. Therefore, there are two buildings demanding expression of their specific characteristics in this in a single comprehensive design? It is quite obvious that one of the constituent parts will inevitably dominate, in an architectural sense, the other, and in this particular instance the dominant one has been recognised in the art galleries, except in the case of one competitor, who has, by a strong *tour de force*, been able to secure this position for the library. It is useless to dispute, because we all know that when the demands of architecture come up against the limitations of finance it is not the latter which go to the wall, and all our architects can do is to sketch their personal convictions and do what they can under conditions dictated by the higher powers. If the

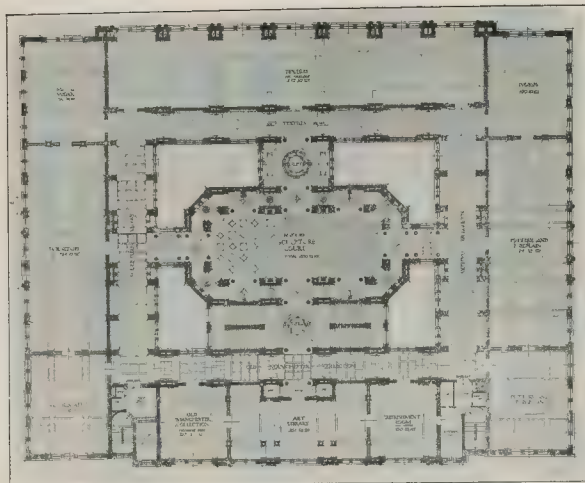
problem is so set them they must try and work two buildings into one on the lines that we once heard aptly described as "budget architecture" in a criticism of the successful design in an important London competition.

From the point of view of the practical economist there was something to be said for

the conjunction, which had the advantage of enabling all the principal rooms of the library to be arranged on one floor without undue extravagance in land. We should have expected that this would have been so generally appreciated that the designs—at all events those which reached the "short list"—would all have exhibited this method, any



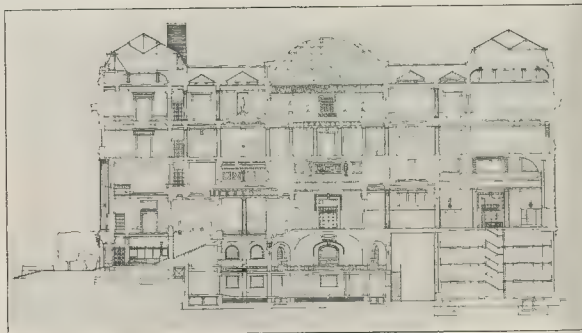
Principal Floor Plan: By Mr. Robert Atkinson (London).



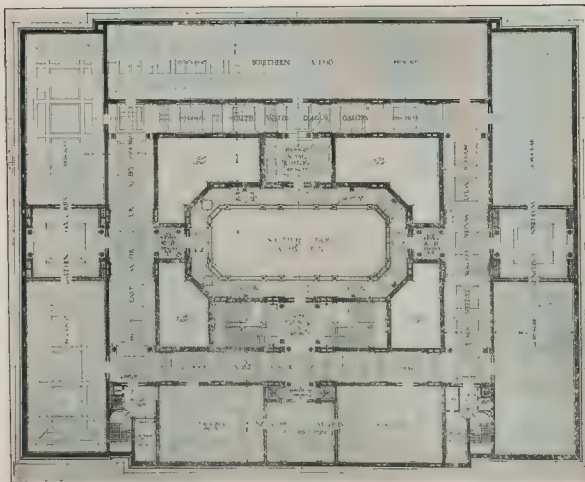
First Floor Plan: By Mr. Robert Atkinson (London).

other involving marked practical disadvantages. In this respect it is curious to note the variety in the treatment adopted in the designs selected for the final competition, and it seems to argue a certain hesitancy and uncertainty in the assessor's mind that he should have selected what were, in his view, the best in each of a number of varied solutions of the problem rather than have determined on what was the right method and selected designs based on it. Whatever the complications and difficulties, it seems to us that when a number of schemes are analysed it will inevitably be found that one type of arrangement is definitely superior to all others, and that any design conforming to this type must take precedence of one, admittedly more brilliant, that is on the wrong tack in handling the logical necessities of the problem.

This can hardly have been Professor Reginald Blomfield's view, as, though six of the ten premiated designs adopt the ground-



Cross-Section: By Mr. Robert Atkinson (London).



Second Floor Plan: By Mr. Robert Atkinson (London).

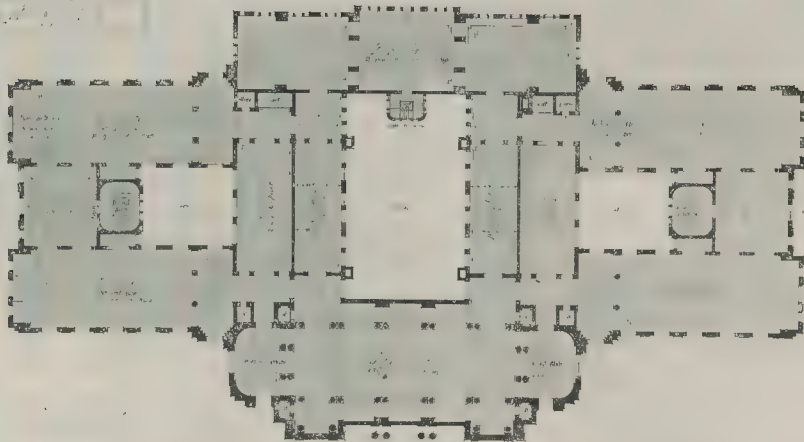
floor library, which appeals to us as the best treatment, the four others have a large proportion of this floor occupied by the sculpture court and galleries, and these exhibit a marked variety in general conception of the exigencies of the case.

There are, of course, distinct advantages in placing the sculpture court on the entrance floor, and the main question with the adjudicator must have been, Did these advantages compensate for the less convenient library? We can understand his deciding either that they did or did not; but he seems, till the making of his final decision, to have been in doubt on this point, and to have placed an almost equal number of the two types.

In making his final award the assessor has adopted the type of design that divides the ground floor between the library and sculpture gallery, not, it would appear, because he believes in this as inherently the right system, but because the design displays a very high degree of skill in the way in which the maximum accommodation is obtained on the area available, and also, as the award makes clear, because he feels in strong sympathy with the architectural treatment. In the winning designs by Messrs. Crouch, Butler, & Savage the library is balanced by the sculpture court, each occupying nearly half the site, the space between them containing the vestibule, central hall, and lecture

theatre. From the central hall the main staircases rise to the right and left, while on each side of these are pairs of entrances to sculpture court and the reference library, the latter flanked by the magazine-room and the technical-room, over which, on a mezzanine, are the art and music libraries. Owing to the arrangement of the stack-room, which is located in the basement (see section), and extends right across the building, this design is at a great advantage in comparison with all the others (except Mr. Robert Atkinson's and Messrs. Worthington's) in regard to the area available for the ground-floor rooms. We would not suggest that this scheme is inadmissible under the conditions but it is certainly very different from the stack-room, independent of artificial light that was described. In fairness to all competitors the condition in question should have been made more clearly as a suggestion only if this form of stack-room is acceptable.

The authors of this design were probably quite aware that they were taking risks both in regard to this feature and to the lighting of the sculpture court, and made these sacrifices deliberately with a view to reducing the height of the building to the minimum possible. As a result they are easily ahead of other competitors in this respect, and the lower proportion gives an advantage in the architectural treatment.



By Messrs. Bradshaw & Gass (Bolton).

has been duly appreciated by the or. e simplicity of the general scheme is ng, and the planning of the upper points of arrangement there appear to ous defects. Apart from the fact that pairs of entrances on either side of the al hall lack the dignity their purpose ds, those to the library have the disadvantage of cutting up the staff imodation, which is not well located. entrances and staircases are also ted at the ends of the building; but with these the intercommunication in orary is not all that could be desired.

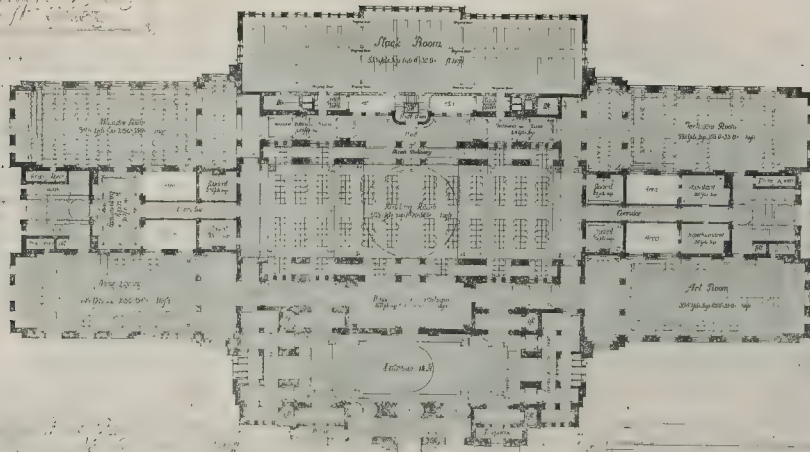
The first-floor rooms are reached by means of a gallery round the central hall, but we cannot say that the approach to them is architecturally adequate to the scale of the rooms. On the second floor the maximum possible area is obtained for the top-lighted galleries, and by this means this design is contrived with one floor less than most of the others submitted.

In regard to its architecture, the winning design received the following encomium from the assessor:—"The architectural character of the design generally is that of severe classic, such as was practised in Manchester and Liverpool in the earlier part of the last century, and is, in my opinion, eminently

suitable for the purpose. Its details have been well considered from a practical point of view, and the result is, in my opinion, a fine, straightforward architectural monument well adapted to the site and worthy of its position as a central feature of Manchester."

Passing on to the designs in which the ground floor is entirely devoted to the library—an arrangement which certainly gives superior possibilities in management and control—we find in this category the designs of Messrs. Robert Atkinson, Bradshaw & Gass, Cooper & Slater, Warwick & Hall, A. G. Henderson, and Messrs. Worthington & Son.

Mr. Robert Atkinson in his design has raised his main library floor sufficiently high

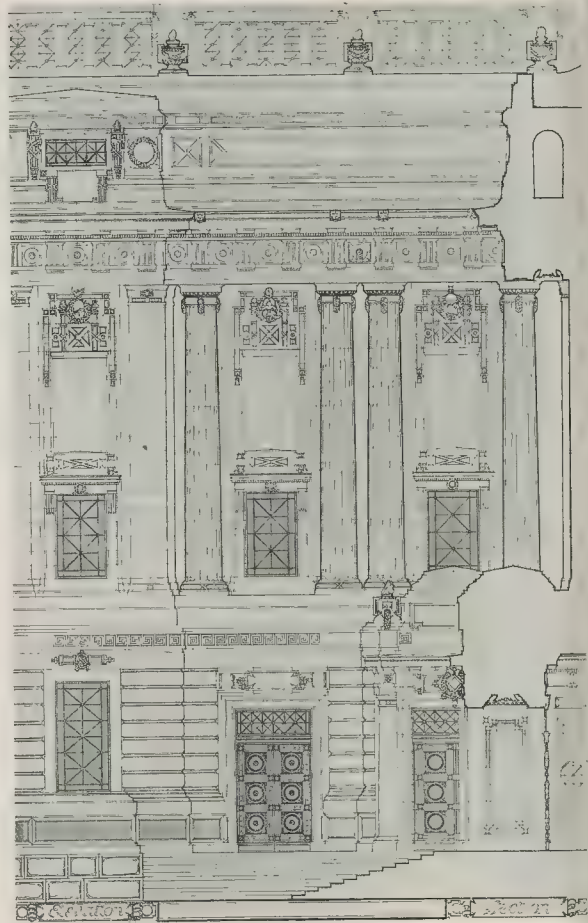


By Messrs. Bradshaw & Gass (Bolton).

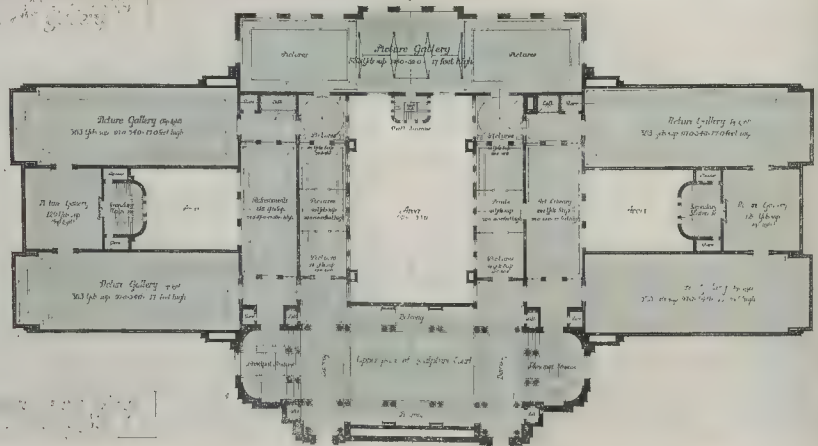
to carry his main entrance through from the front underneath it into a central hall and staircases. His reference library is placed at the back, and the other rooms run round all the frontages of the building. He thus secures good approaches to the various rooms, though, on the other hand, the staff is necessarily somewhat scattered. Above the central hall is placed the sculpture court, with access on all four sides to the museum galleries, thus giving a particularly attractive plan for these floors—the simplest, and at the same time one of the most effective, in its internal effect, of all the designs submitted. Unfortunately the means Mr. Atkinson adopts to secure the continuity of his library suite necessarily results in a mean and inadequate entrance, cramped in height and altogether unworthy of a building of this importance. The external treatment, while broad and dignified, displays defects of proportion very unusual in Mr. Atkinson's designs.

The design by Messrs. Bradshaw & Gass is an excellent example of the central reference library type, with a good entrance hall in front and stack-room at the back—the latter rather too wide, considering that it is lit from one side only. The four rooms for magazines, music, art, and technical books are well arranged in pairs, forming the front and back of the two wings, and the whole plan of this floor is well schemed from the point of view of control. It might be felt that access to the magazine-room should be more direct: but if it were brought to the front the staff would not be grouped in the compact way that forms so notable a feature in this plan. The main entrance hall, which serves both library and art gallery, is carried up through the mezzanine floor, giving it ample height for an impressive effect and materially improving the lighting. A staircase at each end leads up to the well-proportioned sculpture court on the first floor, which forms the entrance hall of the principal museum floor. A series of sculpture galleries runs all round the central area that gives light to the reading-room, and other museum departments occupy the two wings, the circulation being excellently managed throughout.

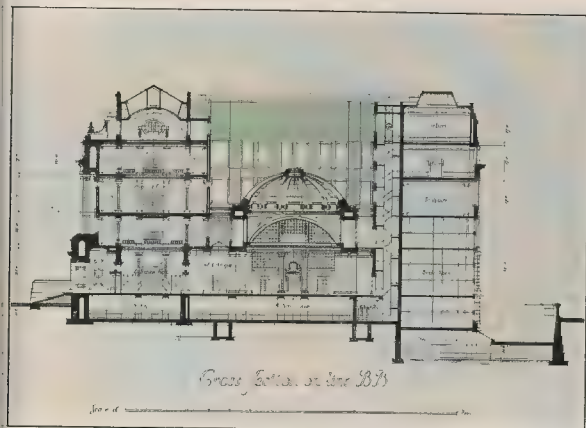
The second floor is mainly devoted to picture galleries, those in the two wings being top lit, while the centre block is carried up another story giving an additional group of top-lit galleries, which are thus conveniently grouped for allocation to loan collections. Besides the main entrance in the front, each end of the building has an entrance and staircase up to the second floor.



Detail, by Messrs. Bradshaw & Gass (Bolton).



By Messrs. Bradshaw & Gass (Bolton).



By Messrs. Bradshaw & Gass (Bolton).

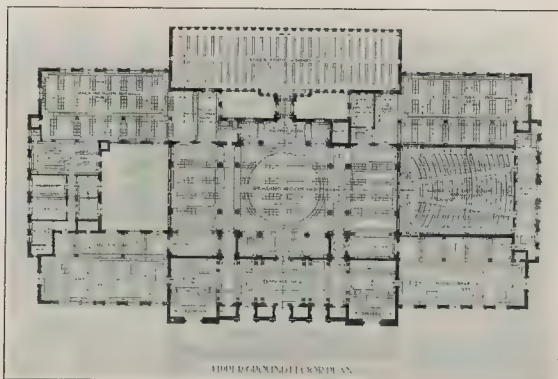
design for the exterior shows a good of mass and proportion, but unfortunately seems to have been conceived without regard to that of the interior; thus the horizontal division does not mark the principal floor, but one of minor importance internally, with the result that two tiers of windows above it look rather empty, and in the section the internal treatment shows itself as absolutely falsified by the external treatment.

The design by Messrs. Cooper & Slater shows several marked similarities to that submitted by Messrs. Bradshaw & Gass. The arrangement of the library on the first floor is almost identical, except that the lecture hall is worked in between two rooms in the west wing. The arrangement through the reference library to the lecture hall at the back is not quite so well worked, but the book stack has rather better lighting. The upper floors are also similar in their general scheme, but the liberties of embodying all the complex elements in one homogeneous block of design have proved rather too much for the authors' powers of design. The central part is absolutely illusory as the expression of architectural purpose, masking, as it does, two floors and bits of two others at the end bottom, while the break in the front line, unhappy in itself, is difficult to justify, as necessitated by essentials of the

Messrs. Warwick & Hall have a compact and businesslike arrangement for their

entrance hall and staircases can hardly be regarded as architecturally impressive, but the limitation of the building area must be considered as partly responsible for this. The proportions of the various rooms are carefully studied, and advantage is taken of the extra height of the large reading-room to obtain light over the technical and magazine rooms at the ends to supplement that from the central dome. Perhaps the position of the main sculpture hall in relation to the principal staircase is hardly an ideal one, and the upper floors generally do not give any opportunity for striking architectural effects; at the same time, the rooms are all well lit and conveniently arranged for the purpose in view.

To Mr. A. G. Henderson we must offer our condolences on the loss of his partner, Mr. J. R. Hacking, in conjunction with whom he won his place in the second stage of this competition. His design also belongs to the group in which the plan is based on a central reference library, which is continued at each end as magazine and technical rooms, also top lit, while beyond these are the art and music libraries. This arrangement makes the library service particularly compact and convenient. The book stack at the back is fairly well lit, and a hall in front opens on the right and left into the staircases up to the art gallery. The main rooms of the library are too low in their proportions

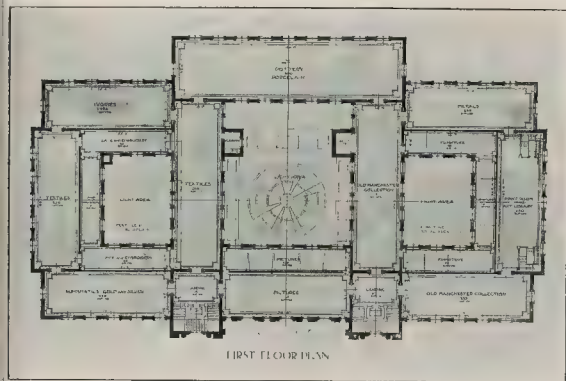


By Messrs. Cooper & Slater (Blackburn).

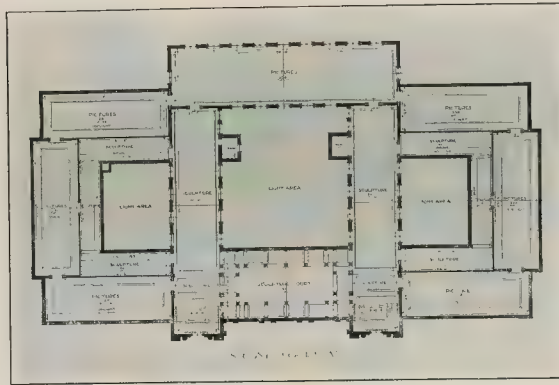
library floor, and are also able to find space at this level for the two lecture-rooms. The

and would be anything but impressive, although good in arrangement. Neither would the art galleries over be very interesting from an architectural point of view, though the central court is spacious and well placed. Externally the design well expresses the internal treatment, though it is a little unfortunate that the main cornice should come halfway up the walls of the picture galleries. The details of this design are characterised by severity and restraint. The too ingenious method of obtaining projections for the circular staircases is crudely worked out, and the worst feature of this design.

One of the ablest designs submitted is that by Messrs. Worthington & Son, which but for a weakness in the staff arrangements for the library would probably have stood a very good chance of success. The rooms are well lit and well proportioned, while a consistent architectural scheme is maintained throughout. Externally this is one of the most pleasing designs submitted, displaying the restraint and dignity that Mr. Blomfield admires in the successful one, and at the same time giving a very good suite of galleries for museum purposes. The position of the stack-room in the basement is a disadvantage shared with the winning and Mr. Atkinson's designs, but on such a limited



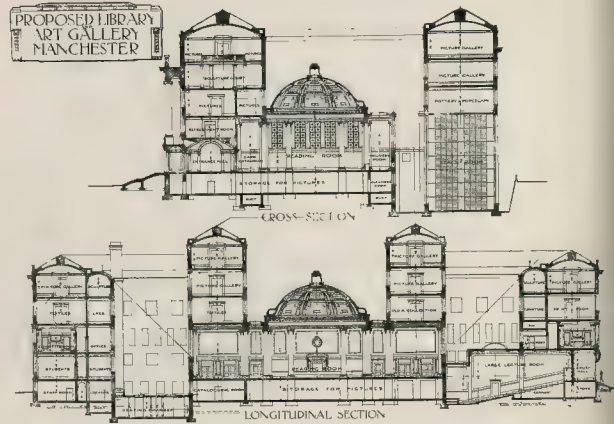
By Messrs. Cooper & Slater (Blackburn).



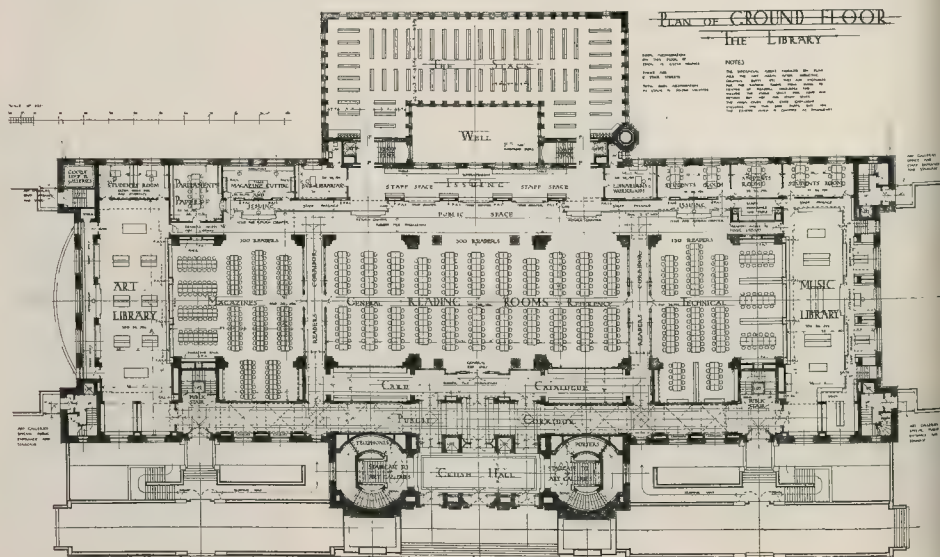
By Messrs. Cooper & Slater (Blackburn).

site it may fairly be contended that this is a lesser sacrifice than the curtailment of the ground-floor area, if that be the alternative.

It must be counted as a merit in Mr. F. W. Simon's design that it architecturally expresses the large reference library—certainly the most important room in the building—and that with this achieved the rest of the accommodation is provided in workable form. That this remainder does not suffer to some extent can hardly be contended; the three main staircases are too equal in importance to be satisfactory as a means of approaching such an important public building as an art gallery, while the value of the sculpture gallery as a central feature, so definitely felt by many of the competitors, is here lost by its virtual detachment. The library, though not impracticable in use, is certainly inferior to those where the main rooms are grouped on a single floor, and the galleries do not give the same facilities for circulation that may be found in most of the other designs. However, Mr. Simon must be congratulated on having produced a very impressive design, though some exception must be taken to the means he adopts

PROPOSED LIBRARY
ART GALLERY
MANCHESTER

By Messrs. Cooper & Slater (Blackburn).

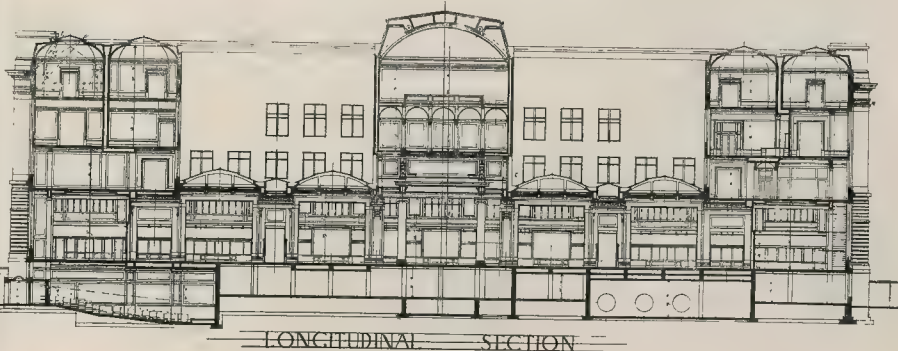
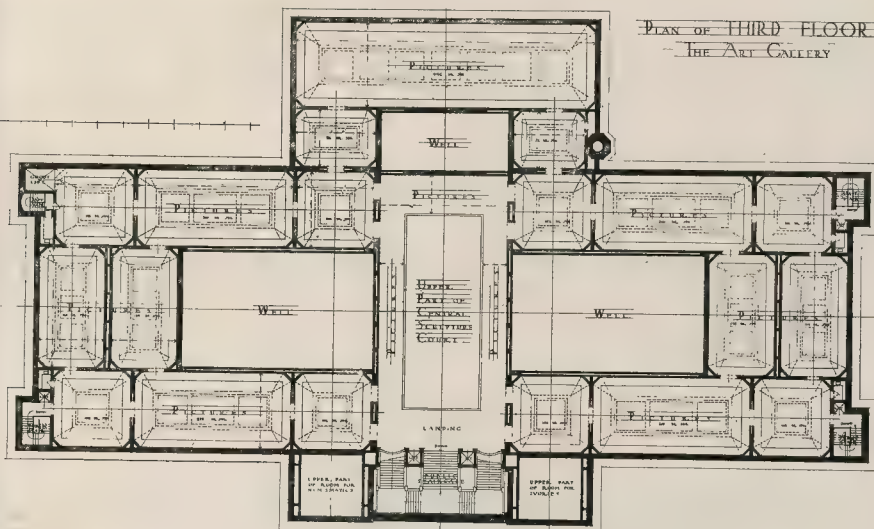
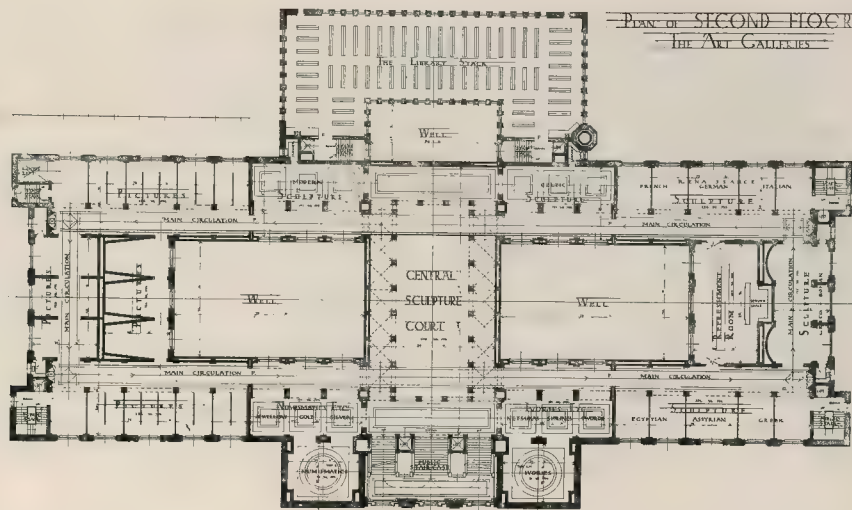


By Mr. A. G. Henderson (Glasgow).

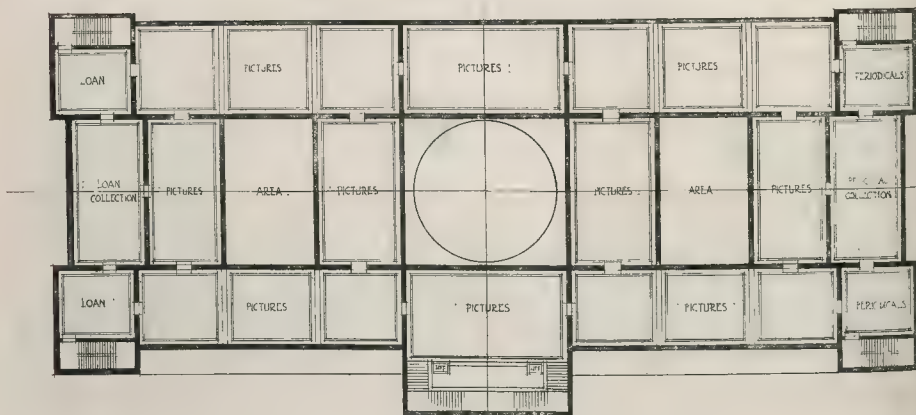
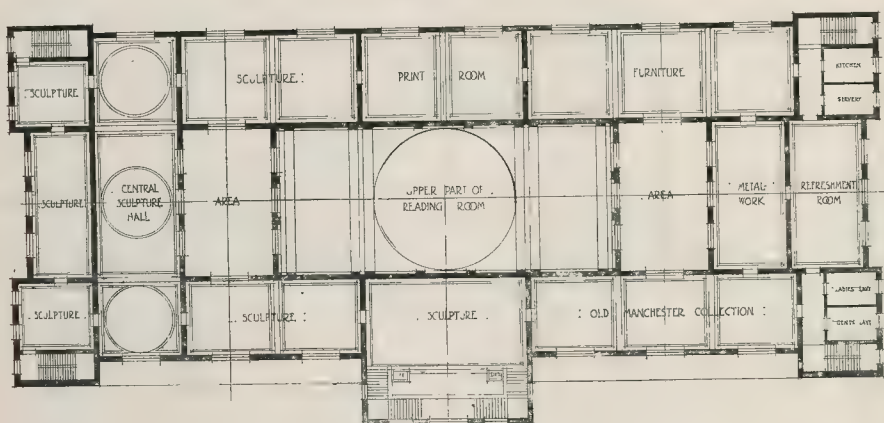
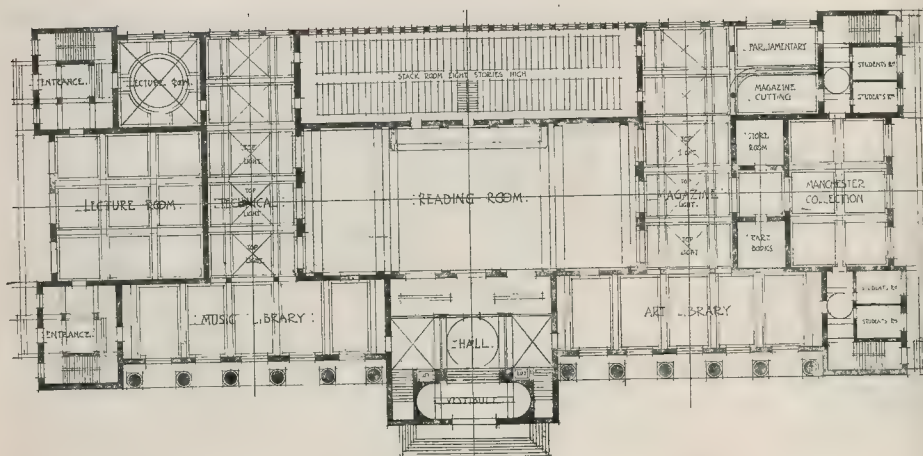
in building up his architectural masses out of a number of unimportant rooms. It is not easy to conceive why Mr. Simon, having felt so strongly the value of expressing externally the importance of the large reading-room, should have been content to have added its terminal pavilions without making them bear any definite relationship to the internal design of his building.

The design by Messrs. H. Percy Adams & Chas. Holden looks at first sight somewhat confused, but on closer study it will be found that the arrangements are practical and generally convenient, though they hardly suggest interesting effects architecturally. Roughly speaking, in this design the building is divided vertically, the front half being given to the museum galleries and the back to the library, which can be entered from the back or through the sculpture court, which forms the entrance hall of the museum.

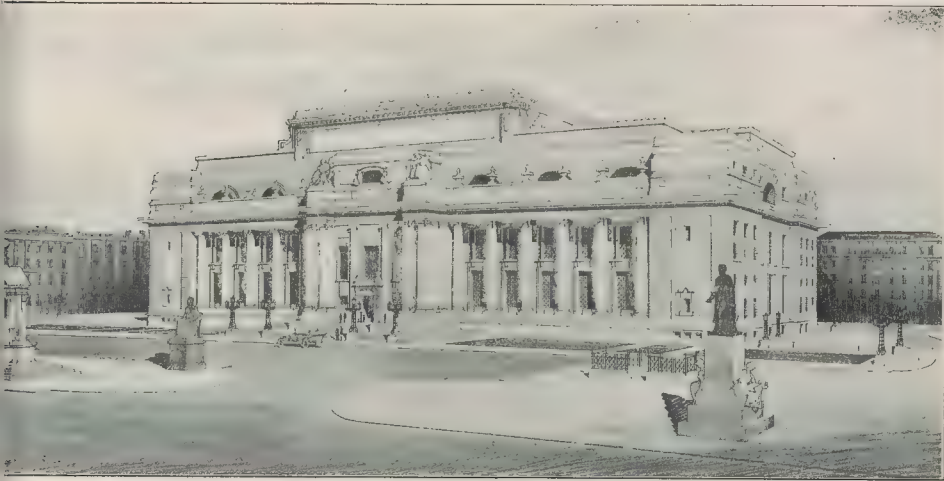
This solution is distinct from that adopted by any other among the ten competitors. It does not appear to us the right one, and presents many difficulties, and must have entailed a vast amount of study to make it



Manchester Library, etc.: Design by Mr. A. G. Henderson (Glasgow).



Manchester Library, etc. : Design by Messrs. Warwick & Hall.



By Messrs. Warwick & Hall (London).

ieble. That Messrs. Adams & Holden succeeded in doing this is a magnificent monial to their ability and perseverance. ne same, we cannot but think that they d have done better if they had worked le lines of horizontal rather than vertical ration between the two distinct institut- t, which it was the problem of this etition to combine in a single building. . R. F. Farrar's design has a central nce library, but varies from those ously described in that one-third of the nd floor is given up to the sculpture and galleries, which form the entrance e art gallery from the east front of the ing, the main front being given up to brary entrance, or rather the entrance e reference library, the route to the ing rooms being architecturally in- ive. The minor libraries occupy two of the block corresponding to the ture court. Apparently these rooms are ed to be entered either by passing l the reference library or from an un- sive door on the west front; whichever ative is adopted the approach to the double staircase provided is quite

inadequate. In this design the library staff would be badly scattered and the library almost unworkable as planned. On the upper floors adequate lighting is provided, but that is about the only merit they can claim.

While the external treatment conveys an impression of mass and dignity, this is secured only by an entire disregard of the logical connexion between it and the building it contains. A glance at the plans show how absolutely the scale of the interior is at variance with that of the façades. It is difficult to see why this design came to deserve inclusion in the selected ten.

As the Manchester Corporation has not finally decided whether to allot the site to the library and art galleries, or whether to devote it to the provision of a new exchange, no immediate steps can be taken in starting the building. It will be regrettable if the work involved in this competition is rendered abortive by a change of public opinion in the city, as, though we cannot express the view that the successful design is entirely satisfactory, the conditions are so much to blame for its defects that no doubt it would be very

greatly improved in execution, and we could confidently look to Messrs. Crouch, Butler, & Savage to give Manchester a fine building, thoroughly well suited to its requirements.

EARLY CHRISTIAN MOSAICS.

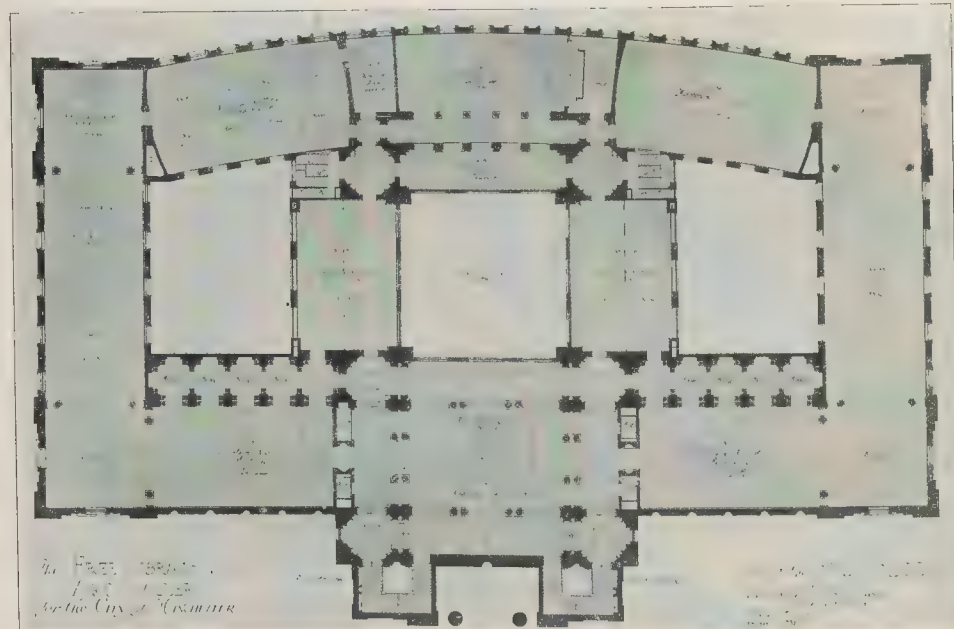
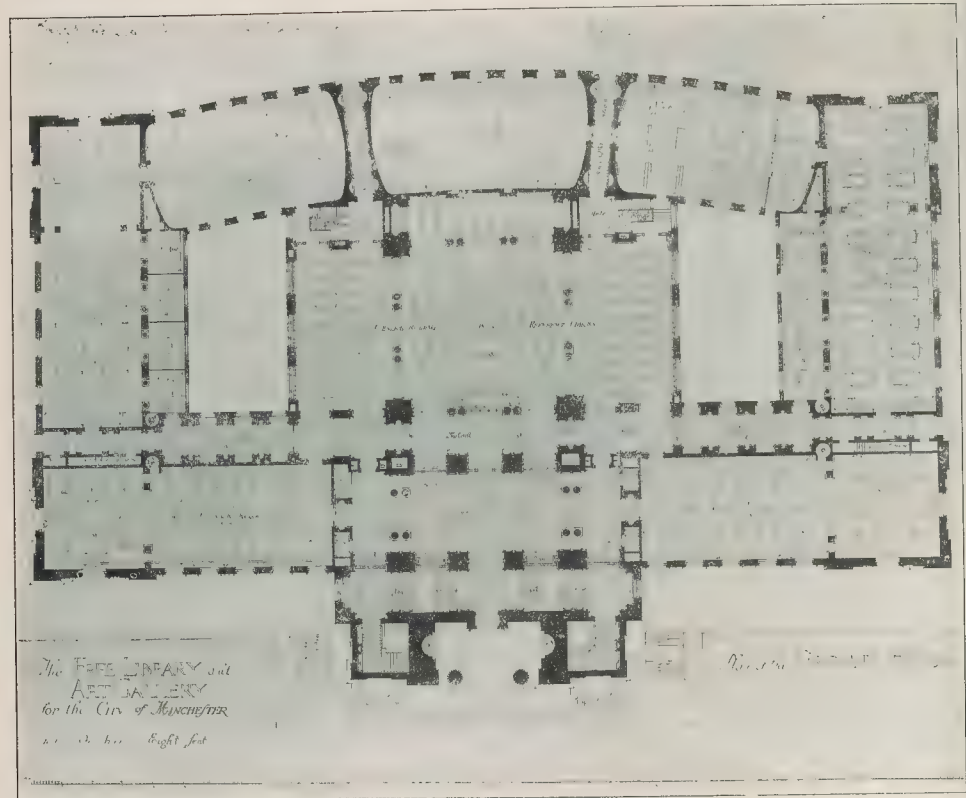
At King's College, on November 29, Mr. G. McN. Rushforth, formerly head of the British School at Rome, lectured on "Christian Mosaics," and in the course of his remarks he said:—

"The two essential features of mosaic as a decoration of walls or vaults are:—(1) Solidity, which makes it peculiarly appropriate to its setting in a monumental building; (2) texture, the network of lines formed by the tesserae being analogous, *e.g.*, to the stitches in tapestry. Any attempt to imitate a painting (as in the modern mosaic copies of the original oil paintings over the altars in St. Peter's at Rome) is an abuse of the art.

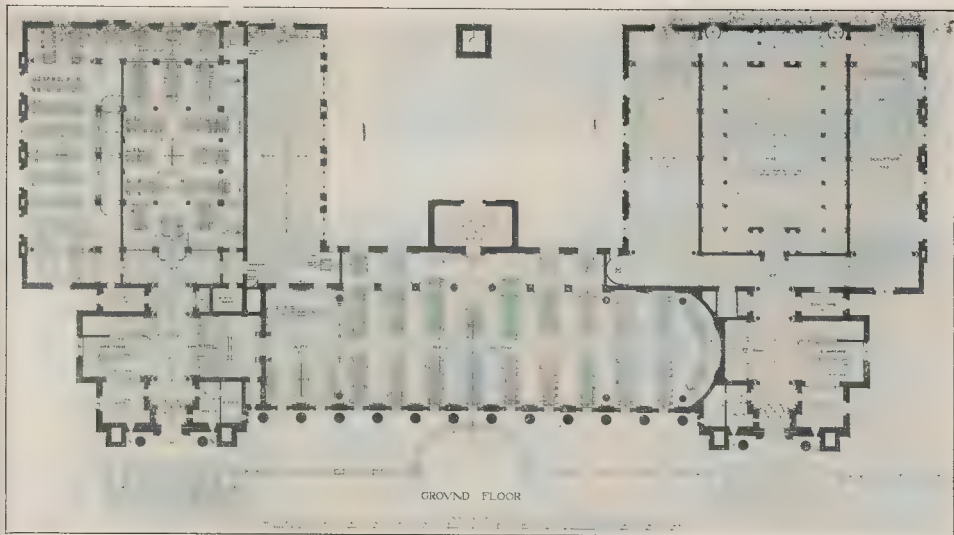
The apparently sudden efflorescence of the art of pictorial Christian mosaic in connexion with Constantine's churches must have been due to a favourable combination of conditions, such as the development which was taking place in Roman architecture in the matter of



By Messrs. Worthington & Son (Manchester).



Manchester Library, etc.: Design by Messrs. Worthington & Son, (Manchester).



Manchester Library, etc.: Design by Mr. F. W. Simon.

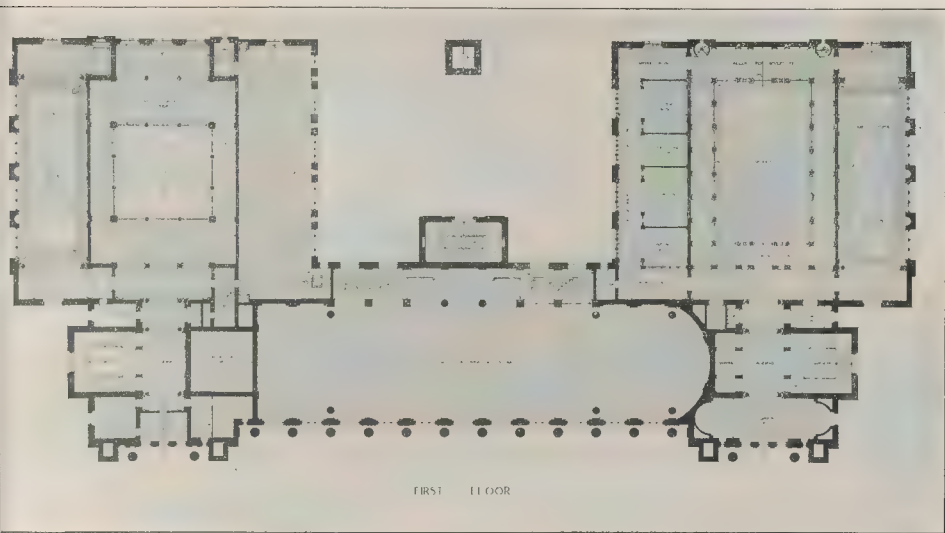
me and vault construction, and the coming into existence of the Christian basilica or church. Each, in spite of its prototypes, was a new form erected for a new purpose, and as such demanding a new kind of decoration. But all plastic forms have origins. Unfortunately, the case of mosaic the evidence is too fragmentary for us to trace its continuous development from its original use as a pavement to the statues on the apse or wall surfaces of a Christian church. The passage from the floor to the wall had already taken place before the end of the 1st century A.D., as was noted by Pliny*†; the Nymphaeum at Monte del Incastro, sketched out by Dr. Ashby,† with its dome, decorated with plain white mosaic, which is almost perfect," shows that by the latter half

of the next century the development had not gone far, especially as the plain white dome is contrasted with the decorative treatment of the niches in the walls of the building. No doubt as time went on regular pictures began to appear on the walls and vaults; but the secular buildings which contained them have disappeared or been stripped of their decorations. Thus the Palace of Diocletian at Spalato has traces of mosaics on its vaults, but, unfortunately, not sufficient to show their character or subjects. In default of actual examples, we may get an idea of what mosaics in palaces or other secular buildings were like from some of the early mosaics in churches in which the Christian element is very small or entirely absent. Such is the mosaic of the apse at the eastern end of the vestibule of the Lateran Baptistery (now the chapel of SS. Rufiana e Seconda), with its splendid design of acanthus

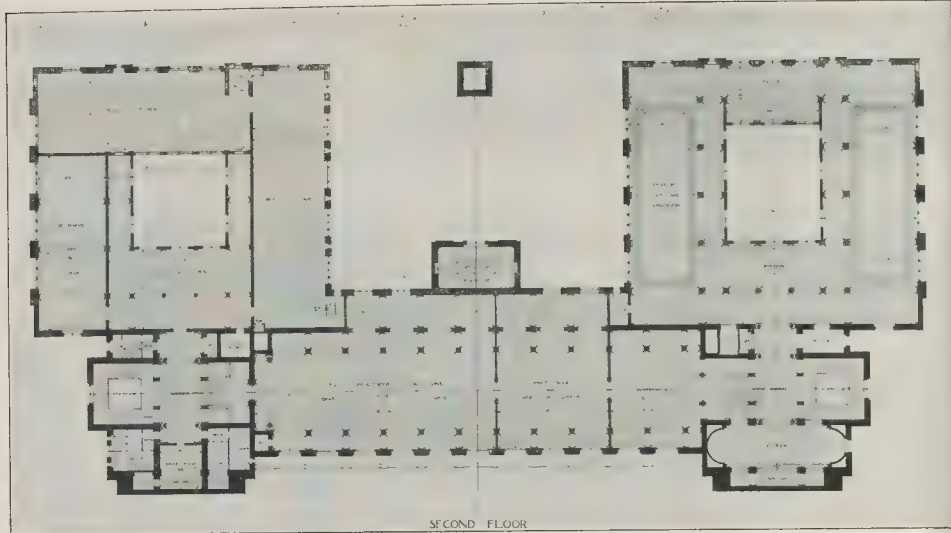
scrolls, so characteristic of Constantinian art. Another Constantinian building, the round church of S. Costanza, has on the vault of its circular aisle decorative designs in mosaic of a purely secular character, which might have appeared on the roof (or, for the matter of that, the floor) of any classical or pagan building.

S. Costanza contained other mosaics of a definitely Christian character. Those of the dome are lost, but those of the two main lateral niches survive, more or less, and are of great importance as showing that the typical design for the apse mosaic in the great Christian basilicas—the figure of Christ accompanied by the Chief Apostles, amid various symbolical adjuncts, sheep, palm-trees, etc.—belongs to the age of Constantine. The original apses of his great basilicas in Rome have all perished, but a record of the mosaic in that of St. Peter's

* Nat. Hist., xxvi., 64.
† Papers of the British School at Rome," iii. (190), 104.



Manchester Library, etc.: Design by Mr. F. W. Simon.



Manchester Library, etc.: Design by Mr. F. W. Simon.

was made before its destruction in the XVIth century,* and it shows all the essentials of the design in one of the lateral niches of S. Costanza. Another mosaic at S. Costanza (in the small dome above the altar, now destroyed) in the same way exhibited the main features of the well-known apse mosaic of S. Pudenziana at Rome, which, though it belongs to the end of the IVth century, may be classed artistically with the works of the Constantinian age. Among those features are the two female figures representing the Church of the Circumcision and the Church of the Gentiles (as in the rather later mosaic of S. Sabina). Still more interesting are the buildings forming the background to Christ and the Apostles, which are now believed to represent the churches erected by Constantine and his mother over the Holy places at Jerusalem, grouped around the hill of Calvary, with

* Ciampini. *De Sacris Aedificiis*, Tab. xlii.

its jewelled cross rising behind the enthroned Christ.

Belonging to the same age, but introducing us to a wider range of subjects, are the mosaics of the nave (Old Testament scenes) and chancel arch (The Nativity of Christ) in S. Maria Maggiore, which cannot be separated artistically, and probably belong to the middle of the IVth century. They are the best examples we have of the "classical" style, and their technique may be studied in the unequalled reproductions in Dr. Richter's book,* which is indispensable for the subject, though its particular theory as to the date cannot be sustained.

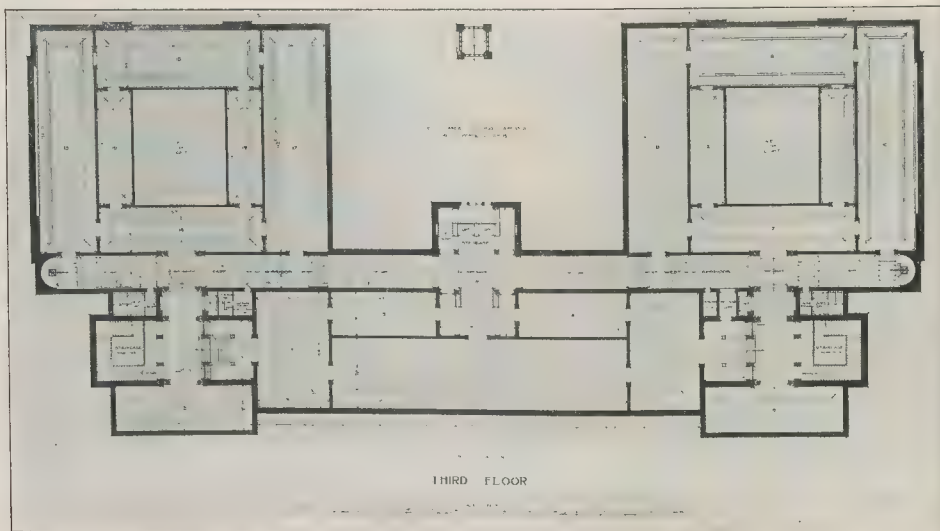
For typical mosaics of the Vth century we must turn to Ravenna, which became the Imperial residence in 402. In the mausoleum of Galla Placidia the decorative scheme is

* "The Golden Age of Classic Christian Art," By J. P. Richter and A. Cameron Taylor. Methuen, 1904.

practically intact, and the general effect is still quite classical. Its design may be compared with that of the less known but extraordinarily brilliant mosaics of the Old Baptistery attached to the Cathedral at Naples, probably belonging to the same period, but rather later. The Orthodox Baptistery at Ravenna also retains most of its original decorations, and here we get the complete treatment of a dome in mosaic. The lower zone of this, with its architectural designs of "classical" origin may be compared with the similar treatment of the dome of St. George at Salonica.†

* G. T. Rivoira. "Lombard Architecture" (Heinemann, 1910), Vol. I, p. 193, Fig. 279, shows the interior; and an article in the *Bollettino d'Arte del Ministero della Pubblica Istruzione*, iii. (1909), p. 217 gives a number of illustrations of the mosaics.

† G. T. Rivoira. "Lombard Architecture," I, p. 1, Fig. 12; O. M. Dalton. "Byzantine Art and Archaeology" (Oxford, 1911), p. 375, Fig. 221.



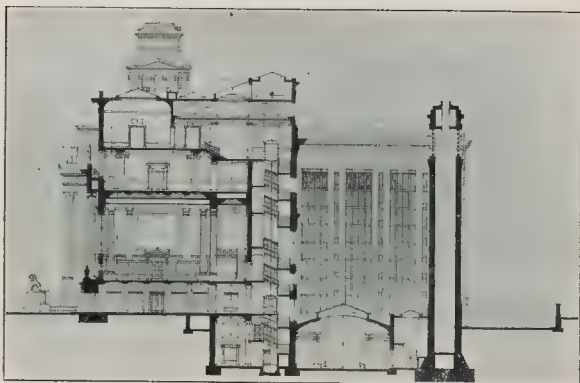
Manchester Library, etc.: Design by Mr. F. W. Simon.

So far the mosaics, while they are clearly an expression of the new Christian ideas, still reserve much of the form and feeling of classical Roman art. But meanwhile, and increasingly as time went on, a great revolution was taking place in the domain of art, which, when completed, meant the great contrast between the art of the ancient Græco-Roman world and that of mediæval Europe. One thing that brought about the change was the great decline in civilisation from the IIIrd century onwards. The standard of art always bears a certain relation to the standard of culture. And one result was that there were no longer artists capable of maintaining the ground won in the course of the long development of Græco-Roman art. There were moments of revival, and it was fortunate for early Christian art that one of these, the Constantinian Renaissance, was able to provide the new Christian conceptions with so much of form and method derived from ancient art, at a time when the tradition was still fresh and the impulse not quite exhausted. But in spite of such revivals, and in spite of the fact that some of the lessons of the past were never wholly forgotten, the general result was that the artist was replaced by the artisan and the individual observation of nature by a system of formal patterns. Figures are no longer naturally grouped in variety of attitude and gesture; they are rigid, isolated, conventional in gesture, always represented looking full-face out of the picture. Their surroundings, too, are conventionalised and schematic, and they no longer appear in the perspective of a realistic scene, but against a gold background.

The transition is well illustrated by the mosaics in S. Apollinare Nuovo (first quarter of the VIth century) at Ravenna. The upper scenes in the nave fairly represent the old tradition, but in the long procession of martyrs now then we seem to enter a new world. Of less striking in this respect are the well-known votive moving pictures of Justinian and Theodora in S. Vitale.

If we return to Rome we see the old designs of traditions being modified under the new influences. The apse mosaic of SS. Cosma e Damiano (525-530) recalls the design of the Constantinian mosaics, and we may say that all the majesty and grandeur of the representation derived from its prototypes of the great age. It may even look on it as the last great work

in the Constantinian tradition. Nevertheless, it is full of signs of the times. In particular there is no unity of action among the figures, who all look straight out of the picture as if they wanted to attract the attention of the spectator and thus detract from the impressiveness and significance of the scene. And this was a work carried out under the conservative régime of Theodoric. The Byzantine conquest of Italy, which really marks the end of the ancient world, introduced a period of increasing barbarism, and its results may be seen in the deterioration of the mosaics of this age in the Roman churches. Typical are those of S. Lorenzo outside the walls for the end of the VIth century, those of S. Venanzio at the Lateran for the VIIth, and those of S. Maria in Domnica and of S. Marco for the IXth. The last shows what the Roman tradition had sunk to, and with it the series of the old mosaics is brought to a close. Art almost ceased to exist till the first dawn of the Renaissance appears in the XIth century."



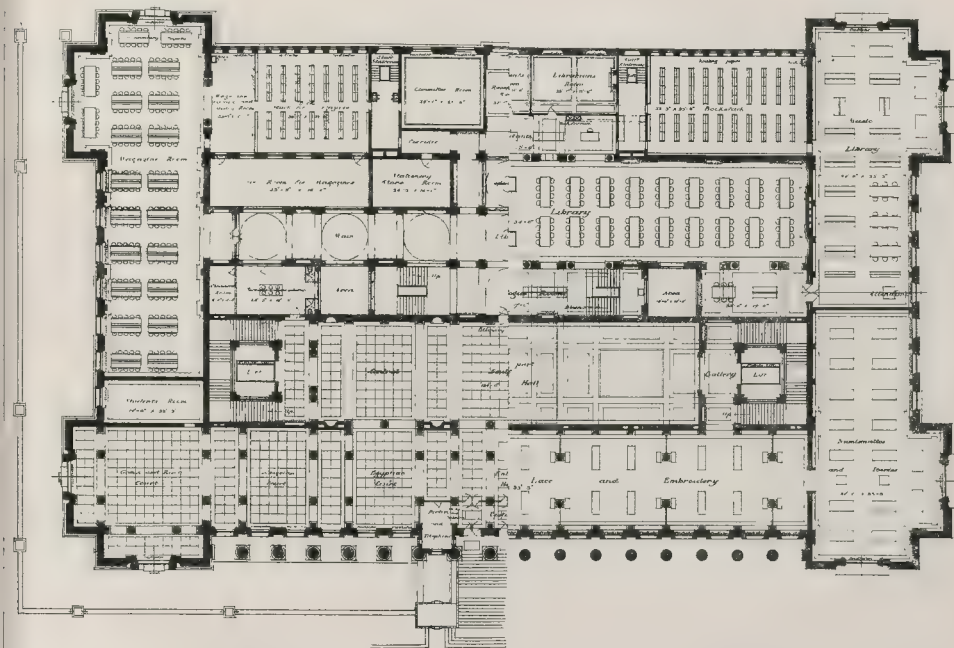
Manchester Library, etc.: Section, by Mr. F. W. Simon (Liverpool).

EARLY ROMAN CHURCHES.

PROFESSOR R. ELSEY SMITH delivered the fourth of the course of lectures on Christian Art, which are being given at King's College during the winter session, the subject being "Early Roman Churches."

He referred to the troubled history of the Christian Church in Rome during the first three centuries of our era and its culmination in the fierce persecution under Diocletian, followed early in the IVth century by the recognition of Christianity by the Emperor. He referred to the privileges granted by the Roman laws to burial clubs and the advantage taken of them by the Christian community, and to the fact that even martyrs publicly executed were not refused the privilege of burial in their own catacombs, with the result that many of these tombs became objects of veneration, and in more settled times had churches raised over them.

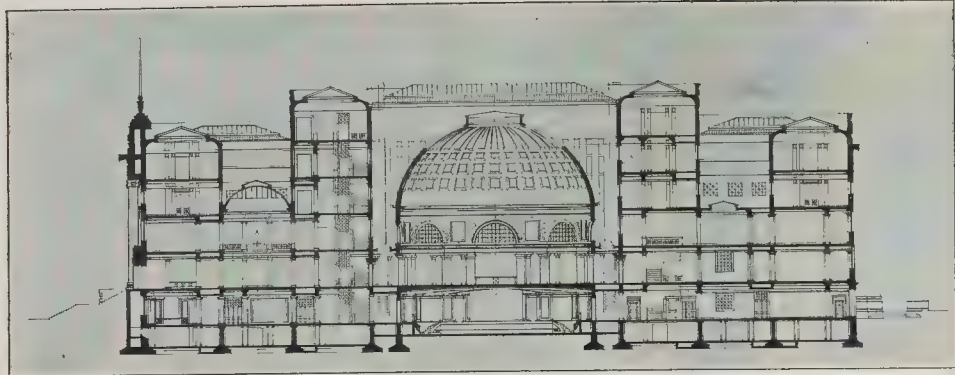
The influential position of some of the



Half Ground Floor.

Half First Floor.

Manchester Library, etc.: Design by Messrs. H. Percy Adams & C. H. Holden.



Manchester Library, etc.: Longitudinal Section, by Mr. R. Fielding Farrar (Leeds).

Roman convents even in the days of persecution was referred to, and the fact that in less troublous times meetings were held in private houses, some of which, in the case of such convents, probably did include a private basilica.

A general description of a typical basilican church followed. The Church of S. Clemente at Rome was utilised as an illustration of the plan of such buildings. The forecourt, the triple division of the building into nave and aisles, the position of the apse, and the enclosed choir, with the arrangement of the arcade, or the alternative treatment of a colonnade, carrying an architrave supporting the arch roofs, were illustrated, while for the external treatment the Church of S. Apollinare at Ravenna was described as presenting now the least altered exterior.

The Constantinian foundations were all

referred to, and two of the great five-aisled examples—St. Peter's and St. Paul's—were described in some detail, and the special features of the planning and internal treatment of the two examples which still survive—S. Agnese and Lorenzo fuori le Mura—were fully illustrated, though it was pointed out that but little, if anything, of the actual structures could be considered with any certainty to belong to the earliest buildings.

Examples of some later foundations were illustrated, including S. Maria Maggiore and S. Prassede; so also were the floors both of early and later type, and the treatment of the screens, nimbus, ciboria, and other fittings.

The persistence of the basilican type of building, in spite of various modifications and variations in detail, was pointed out, and the important influence the establishment of this type of plan and the general treatment of the interior had on the treatment of

ecclesiastical architecture in Western Europe, not only in Romanesque, but also in late periods.

In conclusion, the lecturer referred to the circular and polygonal buildings, pointing out that the tomb of S. Costanza belonged, as regards its system of construction, to that of late Imperial Rome, rather than to that of the basilicas themselves, with which the much larger circular building of S. Stefano Rotondo, however, conformed.

The polygonal type of buildings so extensively used, not only in Rome, but throughout Italy, was described, and attention was directed to the alteration in the character and treatment that had occurred in the earliest example still remaining in Rome, that of the Lateran basilica, which had been altered from a structure of a single story with an encircling aisle to one provided also with a two-storied colonnade and an upper gallery.



Manchester Library, etc.: Ground Floor Plan, by Mr. R. Fielding Farrar (Leeds).

THE BUILDING TRADE.

DAY WORKS.

DAY works are always more or less irritating to the surveyor, but when they are prepared in a soverely spare, day-work sheets are even more irksome to the quantity surveyors when the final accounts of a contract than well kept diaries. Yet, alas, how seldom they meet with! A foreman should find no difficulty in the preparation of his returns if he adopts a good system at the commencement of the job and keeps to it all through. The return should be made daily, up to Friday night for preference, and two copies should be made, one for the clerk of the works and the other for the surveyor; the time, etc., should be booked daily in a book kept for that purpose, and should be agreed to with the clerk of the works, so that the surveyor can have his copy without delay. The latter will find that he will avoid a great deal of trouble if he checks them at the end of the day instead of letting them accumulate until the end of the job. The returns should always be well displayed; numbering the various items will be found most useful; descriptions should be made full and lucid. How often the sheets delivered with the same item differently described week after week! A good space between each item is very useful in cases of disagreement between the clerk of works and foreman. The remarks column must not be neglected; the reason why extra has occurred, when and by whom it was ordered, and any other note that may be useful to settle any disputes at the final settlement should be inserted. There should be a remarks column for the use of the surveyor. It is very useful to note every variation upon the vouchers, whether it is to be adjusted as a day work or by measure. Work which will be concealed, such as foundations, etc., should be measured and noted, and the dimensions given upon the sheets; it is often very useful to give sketches or drawings of such work. Materials too often returned in various ways, very confusing; cement mortar is found weighed one week, being transposed the next week into bushels of sand and cement. Mortar appears in every conceivable form of measure, such as yards, hods, pails, bushels, keels, etc., all of which is very annoying to the surveyor. The charging of foreman's time frequently leads to dispute, and it seems new to be generally accepted that it is included in the rate the surveyor allows. There may, however, be cases where it can be legitimately charged; for instance, when at the end of a contract the foreman has left the job and has come back to attend to alterations, etc.

THE MEDIEVAL SAWYER.

In the Middle Ages where large building works were undertaken the sawyer was an indispensable workman. Much of the timber used in extensive building operations was cut up by the sawyers in pits dug by labourers in the woods where the trees were felled. All accounts of the engagement and payment of sawyers the engagement of a single sawyer is never mentioned. A carpenter could use the smaller saws, but the sawyer was by whom the great tree or log was sawn, and, naturally, for so large a tool two men would be needed. Such a fact explains why, for no great number of sawyers are engaged, two, a sawyer and his mate, are always employed and paid together. The building of the famous palace of Henry VIII. near Ewell hundreds of workmen were employed. It is clear that at one time the progress of this building there was no or no sawing to be done, but the entry reads the engagement of two, not one. (Rec. Off. MS. Exch. Acc. 477-12.) Any particulars of the work carried out by Henry VIII. at Sheriff Hoten Castle in are given in MS. Exch. Acc. 484-3. We find the record of the engagement of

six sawyers at "vid every man by the daye." The names of these six sawyers were: Robert Shire, John Shire, Davie Bell, Robert Hall, Hew Warter, Peter Warter. The details show us that the top and lower sawyer were paid at the same rate - 6d. a day each. Also we gather that it was, and very naturally so, a common circumstance for men of the same family to work together as sawyers; in the above-mentioned account we see that two out of the three couples were apparently brothers or relatives. In MS. 458-26 we have a record of payments to a "Robert Abbott and his sonne, sawyers." In Exch. Acc. 465-20 we see some sort of enumeration of sawyers' work. We read of the "bycking and slytting of diverse kyndes of Tymber as well into bordes as also into Joystis, Rawfters, quavters, poncions" (puncheons). In the twenty-fourth year of the reign of Henry VIII. various repairs were carried out on a property at Hatfield in Hertfordshire. Particulars of the work done and wages paid were entered in a book, which still survives, and is labelled in the Record Office as Exch. Acc. 464-23. In this book we see the not very common custom of paying the workmen partly in money and partly by payment for their board. The following entry shows us this system applied to the engagement of sawyers; it also places unusually clearly before us the fact of the engagement of sawyers in even numbers:—

"Item, to cristofer Sagher & his felow (fellows) for V dayis (days) warke, havyn XVId a day 'tis. viiid; and for theyre bord theis dais ms. iiii.

That is to say, they were paid 4d. each every day in money, 2d. each being paid for their board, making in all the usual earnings of 6d. a day.

On June 15 we meet with an entry of wages paid to "Christofer Sagher and his felow (fellow) for viii dais saghyng." The reference is of interest, for it tells us something of the derivation of surnames, and of the name Sawyer in particular. In our extract we have Christopher Sawyer for sawing, the surname being clearly derived from the man's occupation. In still earlier days, such an entry would have been Christopher, the sawyer, for sawing. The "the" disappears, and the calling becomes a surname, (Christopher Sawyer.

Of all medieval artisans the sawyer was more frequently paid by piecework than any other craftsman. He, like the rest, commonly worked by time, but the recorded instances of payments to him for piecework exceed in number all similar references to other artisans.

An example of payment by piecework to sawyers is to be found in MS. Exch. Acc. 544-12:—

"To the same two sawyers for sawyng of VO of borde at xiid the hundrith . . . vs."

Here we see that the sawyers were paid xiid. for the hundred—that is, for the hundred boards sawn. This amount, coinciding with that commonly paid to two sawyers for a day's work, shows us approximately the amount of sawing done by two sawyers in the medieval day.

An English picture of two sawyers at work is to be found on page 99b of a XIVth-century manuscript in the British Museum (MS. 10, E. iv.). The sawyers are not depicted as working in a saw-pit, but are represented as sawing a beam, which is placed against a tall four-legged rest. The saw is grasped at each end by a sawyer, the handles of the saw not being set transversely, but placed vertically at the ends of the saw. The men are dressed in the ordinary working men's garments of the Middle Ages—namely, each in hose or long stockings covering closely the whole leg, and in a close-fitting tunic-garment, which falls from the waist in slightly gathered-up folds. The sleeves, as would be expected, fit closely to allow free action of the arms. Neither man has a head covering, but we may suppose the kerchief, wrapped round the head with a hanging end, to have been very commonly the fashion.

SUNDERLAND AND DISTRICT BUILDING TRADES' ASSOCIATION.

The annual dinner of the Sunderland and District Building Trades' Association was held at the Grand Hotel, Sunderland, on the 5th inst. Mr. R. J. Hudson, the President, occupied the chair, and amongst others present were the Mayor of Sunderland (Councillor Brown), Mr. J. W. White (Sunderland), President of the National Federation; Councillor T. J. Armstrong (President of the Tyne and Blyth District Federation).

Mr. Morice Wright, in proposing "The National Federation of Building Trades' Employers," referred to the fact that Sunderland had given a good many notable men to the Federation, and this year in particular had provided a President in the person of Mr. White, who had also had the exceptional honour conferred upon him of being elected a member of the National Industrial Council as a representative of the building trades. In recognition of the distinction conferred upon Mr. White, he had pleasure in handing him, on behalf of the local association, an address of congratulation and also a silver salver and two silver vases.

Mr. White, after acknowledging the gifts, referred to recent legislation and its effect on the building trade. It was originally said that the Workmen's Compensation Act would represent something like 4s. or 5s. per cent., but now they found that it represented no less than 40s. per cent. Criticising the Insurance Bill, he said, so far as he could make out, the cost to the building trade employer would work out at about 1½ per cent. That was in relation to sickness benefit. The Bill would come into operation too early, many of them having taken contracts for some time ahead without consideration of that charge of 1½ per cent., which consequently would have to come out of the pockets of the employer.

CONTRACT OR MUNICIPAL LABOUR AT BLACKBURN?

The proposal by the Waterworks Committee of the Blackburn Corporation to let the work of the proposed new water reservoir in the Wiltshire district by contract was challenged at a meeting of the Town Council by Mr. Higham, who contended that it ought to be done by labour employed direct by the Corporation. In contract work of this character, involving a great deal of excavation of land, that might be easy or might prove to be rock, it was "heads I win, tails you lose," for the contractor, who made a great profit if the job proved easy, and, if it proved difficult and unprofitable, "broke," and left the Corporation to finish it themselves. By employing direct labour they would also avoid the possibility of scamped work.

Mr. Hammond seconded. Mr. Nuttall said that Mr. Bryan, their Consulting Engineer, strongly advised the Corporation to let the work to contractors of experience in that class of undertaking, and it was of no use calling in expert advice unless it was acted upon.

Mr. Hartley said that all work done by the Corporation was extremely expensive, and on the grounds of economy they should avail themselves of the ordinary competition by contractors.

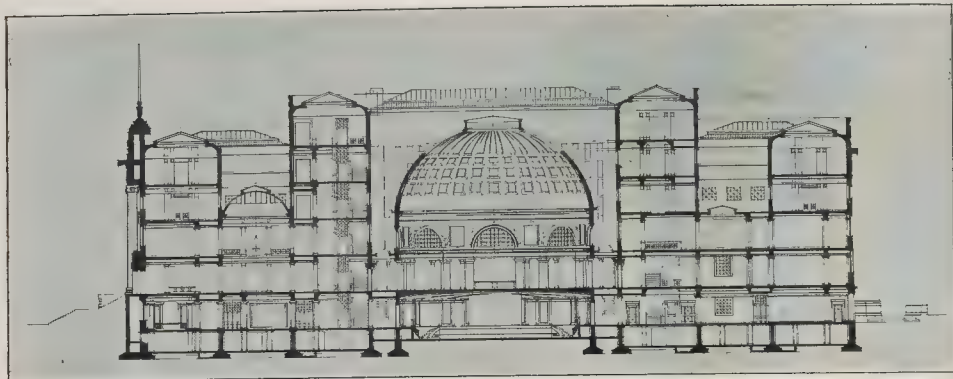
Mr. Gregson and Mr. Slater thought there should be some understanding as to what the rates were to receive, 6d. per hour being mentioned as a minimum.

Mr. Edmondson said he was a member of the Master Builders' Association, and they had agreed to meet the men on this subject, but the men were not prepared to meet the masters without some advocate with them. That was why the labourers did not receive 6d. per hour from the Masters' Association.

The recommendation of the Committee was approved, seven voting against it.

THE LATE MR. H. BROADHURST.

Mr. Henry Broadhurst, of Trent Cottage, Cromer, formerly a journeyman stonemason, and afterwards M.P. and Under-Secretary of State, Home Office, in 1886, has left estate of the gross value of 5,962l. 6s. 2d., with net personality 5,481l. 9s. 5d.



Manchester Library, etc.: Longitudinal Section, by Mr. R. Fielding Farrar (Leeds).

Roman convents even in the days of persecution was referred to, and the fact that in less troublous times meetings were held in private houses, some of which, in the case of such convents, probably did include a private basilica.

A general description of a typical basilican church followed. The Church of S. Clemente at Rome was utilised as an illustration of the plan of such buildings. The forecourt, the triple division of the building into nave and aisles, the position of the apse, and the enclosed choir, with the arrangement of the arcade, or the alternative treatment of a colonnade, carrying an architrave supporting the arch roofs, were illustrated, while for the external treatment the Church of S. Apollinare at Ravenna was described as presenting now the least altered exterior.

The Constantinian foundations were all

referred to, and two of the great five-aisled examples—St. Peter's and St. Paul's—were described in some detail, and the special features of the planning and internal treatment of the two examples which still survive—S. Agnese and Lorenzo fuori le Mura—were fully illustrated, though it was pointed out that but little, if anything, of the actual structures could be considered with any certainty to belong to the earliest buildings.

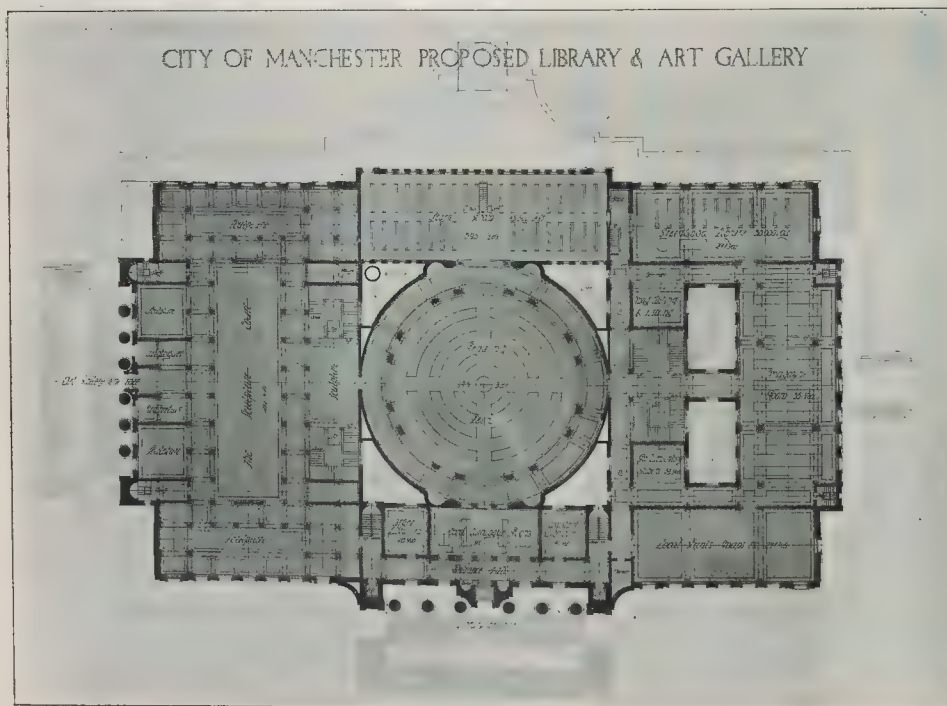
Examples of some later foundations were illustrated, including S. Maria Maggiore and S. Prassede; so also were the floors both of early and later type, and the treatment of the screens, nimbuses, ciboria, and other fittings.

The persistence of the basilican type of building, in spite of various modifications and variations in detail, was pointed out, and the important influence the establishment of this type of plan and the general treatment of the interior had on the treatment of

ecclesiastical architecture in Western Europe, not only in Romanesque, but also in later periods.

In conclusion, the lecturer referred to the circular and polygonal buildings, pointing out that the tomb of S. Costanza belonged, as regards its system of construction, to that of late Imperial Rome, rather than to that of the basilicas themselves, with which the much larger circular building of S. Stefano Rotondo, however, conformed.

The polygonal type of buildings so extensively used, not only in Rome, but throughout Italy, was described, and attention was directed to the alteration in the character and treatment that had occurred in the earliest example still remaining in Rome, that of the Lateran basilica, which had been altered from a structure of a single story with an enclosing aisle to one provided also with a two-storied colonnade and an upper gallery.



Manchester Library, etc.: Ground Floor Plan, by Mr. R. Fielding Farrar (Leeds).

Surveyors' Institution.—A plan was submitted by Mr. Paul Waterhouse on behalf of the Surveyors' Institution for the reconstruction of the sewage of the building, and it was

LEGAL COLUMN.

In reference to the article on "Repairing Covenants in Leases," which appeared in our last issue, page 663, the names in the case were given as *Zurcott v. Wakeley*, whereas it should have read: *Lurcott v. Wakeley*.

Trade Union Law.

The case of *Baker v. Ingall* (noted the *Builder*, March 31 last) has been carried to the Court of Appeal, and it affords one more example of the difficulties which arise in connexion with the law relating to trade unions. The defendant was a member of a friendly society, registered as a trade union, the Friendly Society of Ironfounders of England, Ireland, and Wales, and he was being sued by the plaintiff society for the sum of 100*l.*, which had been paid to him as benefit whilst suffering from an accident. One of the rules of the society was that all members receiving accident benefit must sign an agreement that in the event of their returning to the trade they will refund the amount so received. The defendant was originally a moulder earning 2*l.* a week. About four years after the accident he was able to return to work as a coremaker at 12*l.* 5*s.*, and the County Court Judge held as a fact this was a return to the trade of an ironfounder. To the claim by the union for the return of the sums given to the defendant as benefit the member raised several technical points under the Trade Union Act, contending that this was a claim over which the Courts could exercise no jurisdiction.

The first question which has to be decided in such cases is whether the society is one whose objects are illegal at common law. If the society would have been illegal at common law, because its objects would be a restraint upon trade, then it remains to be seen whether, under the special provisions of the Trade Union Acts, recourse is open to the Courts or not. We explained this fully in our article on the second Osborne case (the *Builder*, February 24 last).

In the case under consideration the County Court Judge had held this society by its rules to be an unlawful association at common law, as being in restraint of trade, and that under sect. 4 of the Trade Union Act, 1871, the agreement could not be enforced, because that section provides that "Nothing in this Act shall enable any Court to entertain any legal proceeding instituted with the object of enforcing . . . any agreement for the payment of any penalty or forfeiture, or for the application of the funds of a trade union," and he held this to be a proceeding to enforce a penalty and relating to the application of trade union funds.

The Divisional Court had not to consider whether this society was or was not an unlawful association, because it held that the Trade Union Act did not apply, since the proceedings in question were not taken to enforce a penalty, and the agreement for the repayment of this money was not an agreement for the application of the funds, but a separate and distinct agreement.

The Court of Appeal have reversed this finding. On the question of the legality of the society, the Court felt itself bound by a decision, *Russell v. Amalgamated Society of Carpenters* (see the *Builder*, January 13, 1910), to hold this society unlawful in its objects at common law, and that under the Trade Union Act this agreement was not distinct and separable, but was an agreement within sect. 4. Lord Justice Kennedy dissented from this latter finding.

It is open to the plaintiffs, the trade union, to appeal to the House of Lords on the point decided by the Court of Appeal in *Russell's* case, as to what renders a trade union illegal in its objects; but that is a question which has involved much litigation.

When the legislature legalised trade unions by the Trade Union Act, 1871, it seems to have been deemed expedient not to allow these hitherto "illegal" societies to have free access to the Courts. The reason for this limitation, if any ever existed, appears to have passed away, and expediency seems now to point entirely in the direction of throwing the Courts open to trade unions and their members. In the present case, for instance, why should the trade union be unable to enforce a reasonable agreement against one of its members? Unfortunately, far from adopting the view that the Courts should be open to all, the legislature by the Trade Disputes Act has made a further move in the opposite direction, even excluding the general public from the Courts where wrongful acts have been committed by trade unions or their members in contemplation or furtherance of trade disputes.

Gas Mains: "Building" or "Tunnel"?

In the recent case of *Schroeder v. Worthing Gas Light and Coke Company* some points of interest were decided. The plaintiff was the owner of land at both sides of a highway, and in September, 1898, he connected his property by constructing a tunnel under the roadway. This tunnel was constructed of bricks strengthened with iron girders. The roof was 18 in. below the surface of the road, and was constructed of transverse and longitudinal girders imbedded in cement 18 in. thick. The defendants were a gas company, with statutory powers contained in a private Act passed in 1897, which incorporated the Gas Works Clauses Act, 1847.

In December, 1910, the defendants laid two gas mains 10 in. below the surface of the road, and in doing so carried away part of the cement concrete and one of the mains rested on the girders. The plaintiff contended that these mains were laid in and through the roof of his tunnel, and on his land not dedicated to the public use. The defendants contended that they had acted within their statutory powers in excavating the roadway and laying the pipes. Sect. 6 of the Gas Works Clauses Act, 1847, empowers the undertakers to open and break-up the soil of streets, and "any sewers, drains, or tunnels" under such streets; but sect. 7 provides that the undertakers shall not "lay down or place any pipe . . . into, through, or against any building, or in any land not dedicated to public use, without the consent of the owners or occupiers."

The Court held, on the authority of the case, *Thompson v. Sunderland Gas Company* (1877), that this structure was a "building." The Judge considered it was not a "tunnel," but that, even if it were, the defendants had acted *ultra vires*, since by sect. 10 they were bound to reinstate it—i.e., to restore it to the condition in which it was before; and this they had neglected to do. The Court left undecided the point as to whether or not the pipes were laid in soil dedicated to the public use, on the above findings the plaintiff was entitled to a mandatory injunction.

Building Estate: Implied Grant of Right-of-Way.

A case, *Rudd v. Bowles*, is reported in the *Weekly Notes*, which is of interest to those accepting building leases.

On March 25, 1902, the defendant, Bowles, granted leases of four plots of land to one Gluck, who had erected houses upon them under a building agreement. Afterwards, by agreement, the dates of the leases were altered to some dates in July, 1894.

There was a plan on each lease which showed twelve plots with houses, but those demised to Gluck alone were coloured. The land and houses fronted on Halons-road, Eltham, at right angles to which ran Enslin-road. The plans showed a strip of land, coloured brown, 4 ft. wide, running at the back of the plots, except the last two near Enslin-road; but there were no words indicating that this was intended as a right-of-way. At the time the dates on the leases were altered the plots, with the approval of the defendant's architect, or without objection raised, had been fenced in at the back with gates or openings giving on to the brown strip. This strip had been included in the building agreement, but with the consent of Gluck excluded from the leases. It had never been fenced in on the other side, but formed part of the defendant's land.

In September, 1910, the defendant commenced building on the brown strip, and the plaintiff, a mortgagee of Gluck, in possession, applied to the Court for a declaration that he was entitled to a right-of-way over the brown strip and for an injunction.

The Court held that the alteration in the dates of the leases did not invalidate them, and that the defendant was estopped from showing that the date inserted by himself was not the date from which the demise operated, so as to prevent anyone claiming under the lease from relying on circumstances then existing; and since at either date, it was fairly obvious to anyone inspecting the houses with the plan that the back gardens were intended to open on to the 4-ft. strip, and access from the back was necessary for the reasonable enjoyment of the houses as constructed, therefore an implied right-of-way was granted by the leases, and a declaration was granted and an injunction.

Waste Land by Highways.

Very difficult questions arise from time to time in connexion with waste lands by the sides of highways. In a recent case, *Beal v. The Berkshire County Council*, the lord of the manor of Horley was suing the County Council for trespass upon a strip of land by the highway some 350 ft. long and varying in width from 32 ft. to 12 ft. In support of his claim he relied upon certain acts of ownership exercised by him. He had taken the road trimmings for his own use or had sold them,

and had been paid a nominal rent for allowing road scrapings to be deposited upon the piece of land. Some telegraph poles had been placed on the land, and the United Telephone Company and the Postmaster-General had made a small payment in respect of them. Lastly, it was alleged some cottages had been built by one Cripps facing the piece of waste, and the plaintiff had exchanged a piece of the waste land for a piece of Cripps' land in order to give them a straight frontage.

The defendant Council, however, asserted that even if the soil was vested in the plaintiff yet for forty years there had been continuous user by the public of the surface, and the Court held that the evidence of dedication had not been rebutted by the plaintiff, and the presumption was assisted by the fact that the cottages only abutted on the piece of waste land, so if it were not part of the highway, the cottages would have had no means of access to the road. Owing to the action of the defendants in making certain admissions, which the Court held had misled the plaintiff, and in refusing to produce certain minute books and other documents, or giving any reason for their non-production, the action was dismissed without costs.

A somewhat similar case, *Coats v. Herefordshire County Council*, will be found noted in the *Builder*, June 5, 1909. In that case the Court held that the land being capable of dedication, and there being persons capable of dedicating it, exercising acts of ownership over other portions of it, who had permitted the use of the portion in question by the public for over forty years, the land must be deemed to have been duly dedicated.

LAW REPORTS.

London Building Acts:

L.C.C. v. Clark.

THE appeal in the Court of Appeal, composed of Lords Justices Vaughan Williams, Buckley, and Kennedy, on Monday, December 11, mention was made of the case in the King's Bench Division (interlocutory list of appeals) of the London County Council v. Clark.

This was the appeal of the respondent Mrs. Clark—in the matter of the London Building Act, 1894, and of the London Building Acts (Amendment) Act, 1905, sects. 7 (4) and 22—as the owner of the Berners Hotel, Berners-street, London, W., from an order of the Divisional Court composed of Justices Hamilton and Bankes upon her appeal against the refusal of the London County Council to issue a certificate pursuant to sect. 7 of the Act of 1905. The matter came before the Divisional Court on a special case stated by the Tribunal of Appeal.

Mr. C. A. Russell, K.C., stated, on the Lordships taking their seats, that he was surprised to see the appeal in the list for that day, and he was afraid the parties were not ready for the hearing. It was a case which the appellant had given notice of appeal in order to protect herself, but communications were now going on between her and the London County Council which both parties thought, if time was given them, might lead to a settlement. If the Lordships would allow the appeal to stand until the next sittings he would be glad. The appeal raised important questions under the Building Act, and there were a great many details to be considered.

Counsel, on behalf of the London County Council, said the London County Council was agreeable to this course, and thereupon the Court gave consent to the application.

COURT OF APPEAL.

(Before Lords Justices VAUGHAN WILLIAMS, BUCKLEY, and KENNEDY.)

Action by Contractors on District Surveyor's Certificate:

Thomas Free & Sons, Ltd. v. Urban District Council of Sutton.

THIS case was heard on December 12, 13, and 14 upon the application of the plaintiffs for judgment or new trial in the action which was tried by Mr. Justice Lawrence and a special jury in the King's Bench Division. There was also a cross appeal by the defendants.

Mr. Ernest Pollock, K.C., and Mr. McCarthy appeared for the appellants, and Mr. Shearman, K.C., and Mr. Morton Smith for the respondents.

Mr. Pollock said that the action was brought by the plaintiffs, a firm of contractors carrying on business at Maidenhead, to recover 270*l.*, the amount of the certificate given by the Surveyor to the defendant Council for work done by the plaintiffs in making-up a

lying out a road called Grennell-road, Sutton. At the trial the learned Judge put two questions to the jury; the first was, whether the 270*l.* was due to the plaintiffs on May 18 under the contract between the plaintiffs and the defendants; and, secondly, did the plaintiffs know that the sum was not due? The jury answered both those questions in the plaintiffs' favour. The learned Judge, however, upon the construction of the contract under which the certificate was given, and the facts, entered judgment for the defendants, in spite of the verdict, and from that judgment the plaintiffs now appealed.

The amount of the contract for making-up the road in question was 967*l.*, odd, and the amount sued for was for an instalment due under the Surveyor's certificate. Several points were raised by the defendants in the defence, but, broadly speaking, the defendants made a charge which really amounted to a charge of fraud and collusion between the plaintiffs, and Mr. Charles Chambers Smith, the Surveyor, and that charge appeared in paragraph 11 and subsequent paragraphs of the statement of defence.

The learned Counsel then referred to the material paragraphs in the statement of defence, from which it appeared that the defendants alleged that the certificate given by the Surveyor was not a certificate given by him under clause 30 of the contract, and that the date of the certificate no sufficient work was done, and, further, that at the time the certificate was given the plaintiffs and the Surveyor well knew that the sum was not due from the defendants to the plaintiffs. The learned Counsel further alleged that the contour of the road was not sufficient, that the gravel was not sufficient, and so on, and therefore there was no justification for the Surveyor granting an interim certificate under the contract. All that was negatived by the verdict of the jury, who found a verdict in the plaintiffs' favour. He (Counsel) contended that the jury had, by their verdict, brushed aside the charge of collusion between the plaintiffs and the Surveyor, and therefore that the plaintiffs were entitled to judgment upon the certificate given, because the certificate was conclusive that the sum was due to the plaintiffs.

The whole question in dispute was whether, under the circumstances, the plaintiffs were entitled to the sum certified by the Surveyor. The Surveyor was entitled by the contract to enter up to 90 per cent. of the contract sum, and when he was satisfied that the work was done the Surveyor was empowered to certify up to 90 per cent., and then there was a maintenance period, during which 10 per cent. was held in hand. What the other side was was that at the time the certificate was given it was undoubtedly a certificate for 90 per cent.

Mr. Shearman: It was for 95*l.* per cent.

Mr. Pollock: No. He said that there was 90 per cent. due to the plaintiffs, and work was done sufficiently to do to justify the certificate for 90 per cent.

Lord Justice Kennedy: Was that question left to the jury?

Mr. Shearman: No.

Mr. Pollock, having read the contract, said that the whole difference between them was whether or not the Surveyor was entitled to go into account the extras which were ordered under the contract. If he could prove that the Surveyor was entitled to take into account the extras then he (Counsel) could prove that the actual sum due to the plaintiffs at the date of the certificate was 259*l.* 15*s.* 10*d.* might be that he could not for a shilling but two justify the giving of the certificate by the Surveyor. By the contract, the certificate the Surveyor was to be a condition precedent to payment by the contractors. The work was dated February 2, 1910, and the work was commenced in February and completed in the following May. The first certificate was given on March 10, which was for 7*l.* due to the plaintiffs on account. Later progress certificates were given, and the sums paid to the plaintiffs by the defendants. At the time the disputed certificate of 270*l.* was given there was due to the plaintiffs 64*l.* 15*s.* for extras, which made the contract price up to 1,032*l.* 11*s.* 5*d.*

Mr. Shearman: What about deductions?

Mr. Pollock replied that at that time there were not any deductions. There was no defence that at that time the deductions had been ascertained. After deducting the 10 per cent., 10*s.*, that left 929*l.* 11*s.* 5*d.*; of that in the defendants had paid the plaintiffs on certificates of the Surveyor a sum of 669*l.* 10*s.* 6*d.* due to the plaintiffs in respect of the contract and extras 269*l.* 11*s.* 5*d.* It was in respect of that that the 270*l.* certificate was given.

Mr. Shearman said that for this matter the Surveyor was called upon to resign, and

he resigned. At the trial he sat next to the plaintiffs, and did not go into the witness box, therefore he gave no explanation of how he arrived at his figures. His (Counsel's) contention was that the defendants were entitled to say that in the circumstances the certificate did not bind them. His case was that the certificate, upon its face, was bad because it was common ground that at the date of the certificate the work was not completed and measured up.

Mr. Pollock said that the contract did not provide that the certificate should be given in any particular form, so that fact did not militate against the plaintiffs' claim, provided they had the certificate of the Surveyor, who was the arbitrator under the contract, the getting of the certificate being a condition precedent to the plaintiffs getting payment at all. Whatever the Surveyor did did not affect the plaintiffs' rights under the contract with the defendants.

On Wednesday, Lord Justice Vaughan Williams said that since the Court rose the previous day he had read the certificates, and he thought, as then advised, that the certificate for 270*l.* was not a final certificate, and that at the time it was given the Surveyor had not approved the work as a whole. If that was so, and there was nothing more, it was plain that the judgment of Mr. Justice Lawrence was right. He did not see that the findings of the jury had anything to do with the case.

Lord Justice Buckley: You have to satisfy me, Mr. Pollock, that at the date of the certificate 90 per cent. of the contract sum was due to the plaintiffs. I think it was only 80 per cent.

Mr. Pollock then read the judgment of Mr. Justice Lawrence, from which it appeared that his Lordship held that the certificate in question was not a final certificate, the Surveyor at the time not having expressed his approval of the quantity and quality of the work. His Lordship, being of opinion that the certificate was a progress certificate, the defendants were entitled to question it, which they would not have been entitled to do under the contract if the certificate had been a final certificate. His Lordship expressed the opinion that the proceedings were entirely misconceived, and entered judgment for the defendants.

Mr. Pollock said he had evidence that the work was completed, that it was properly examined by the Surveyor, and that he properly certified that the sum in question was due to the plaintiffs.

Mr. Shearman, in supporting the judgment of Mr. Justice Lawrence, said he submitted in the Court below that there were no questions proper to be left to the jury. He also said that the defendants had not charged that the plaintiffs and the Surveyor had been guilty of fraud.

Lord Justice Vaughan Williams: I have read a good deal of the evidence, and it struck me that, from what you said and asked, you clearly did raise the question that the sum of 270*l.* was not due.

Mr. Shearman: Yes, under the contract. One of my questions was that it was not only not due, but that they had not done it.

Lord Justice Vaughan Williams: I am still of opinion that you deliberately raised the question that the sum of 270*l.* was not due, and therefore you acquiesced in the questions being put to the jury.

Mr. Shearman: I say I did not charge fraud. I say that they were colluding only in getting money which they knew was not due, but which they knew would become due eventually.

Lord Justice Vaughan Williams: That is an imputation of fraud. It would be shocking if honest men could do anything of the sort. That is fraud.

Mr. Shearman said he was sorry to hear his Lordship say so. He contended that there was no evidence to justify the findings of the jury, and that the certificate in question was not a final certificate, but only a progress certificate. He submitted there was no evidence on which the jury could find that at the time the certificate was issued the contract was completed.

Mr. Shearman, continuing his address, contended that the certificate which the Surveyor had given for 270*l.* could not, in any circumstances, having regard to the terms of the contract, be construed to be a final certificate. Before the Surveyor could issue a final certificate he must have gone and inspected the work and certified in writing that the work was completed.

Lord Justice Kennedy: Had he not done that when he says the amount of work done was so much?

Mr. Shearman: No, I submit not. You cannot arrive at the final amount of work you have measured up. I say he cannot give the

final certificate until he has arrived at and certified the reductions. I say he has got to measure up and value. I asked the plaintiff over and over again had there been any measuring up, and he said there had not, and that it had to be settled afterwards. The plaintiff said that they had arrived at the extras approximately. I say, therefore, that no event has happened on which the plaintiffs were entitled to a 90 per cent. certificate. I submit that this is a perfectly plain common form of contract. It amounted to this, that 90 per cent. could be paid to the contractors during the progress of the work when certified by the Surveyor, and that when the matter was finally settled, then maintenance period commenced when 10 per cent. was to be withheld as a security for what might happen during the period of maintenance. I contend that that period never happened under this contract, and that no 90 per cent. certificate could be given until the period of maintenance began.

[The case was proceeding as we went to press.]

OBITUARY.

Professor Legros.

We regret to announce the death, on December 8, at his residence, Melbury, Watford, of Professor Alphonse Vivant Legros, aged seventy-four years, who was Professor of Fine Arts, University College, in 1876-84. A native of Dijon, Professor Legros began life as an apprentice to a house-decorator; he then entered the *ateliers* of Cambon, the scene-painter, and Lecoq de Boisbaudry, and studied in the Ecole des Beaux-Arts. In 1855 he sent "Le Lutrin" to the Salon, and became a teacher in the South Kensington School of Art, and afterwards in University College, being appointed Slade Professor in 1876. Examples of his work are in many public and private collections—including his "Ex Voto" in Dijon Museum; "Dead Christ" and "Amende Honorable" in the Luxembourg; and "Femmes en Prière," a portrait of Mrs. John Grey, and the memorial portrait in silver-point of Alfred Stevens in the Tate Gallery, drawings and etchings in the British Museum; and his portraits of Huxley, Marshall, Cassel, Burne-Jones, and Browning at South Kensington. He executed the bronze and granite fountains at Welbeck nine years ago. Of his many other works we may mention his "Mort du Vagabond"; portraits of Carlyle, Manning, Delion, and Gambetta, and the Watts, Darwin, Tennyson, and J. S. Mill medals. In our "Note" of November 17 we adverted to his high appreciation of Alfred Stevens and to his efforts for the establishment of the Stevens Room in the Tate Gallery. Professor Legros married, in 1854, Miss F. R. Hodgson, and received letters of naturalisation in 1881. Sir Charles Holroyd, Mr. Strang, Lady Stanley, and Countess Gleichen were his pupils.

Mr. J. R. Carroll.

The late Mr. James Rawson Carroll, of Dublin, was a Fellow of the Royal Institute of the Architects of Ireland, and served during many years as member of the Council. He was elected a Fellow of the Royal Institute of British Architects in 1876. With his partner, Mr. Frederick Batchelor, F.R.I.B.A., practising at No. 133, Great Brunswick-street, Dublin, he was the architect of—in Dublin—the Richmond Surgical Hospital, in North Brunswick-street, for eighty-five beds (and provision for future considerable extension), with central and administration blocks, two wing-pavilions, home for thirty-one nurses, operation-theatre block, etc. (1901); the new buildings for out-patients and 120 in-patients, and with sanitary annexes, to combine under one roof the St. Mark's Ophthalmic Hospital, Lincoln-place; and the Provincial Banking Company's premises, Belfast (1903); Limerick Work-house; and additions, at a cost of more than 10,000*l.*, to the Great Southern Hotel, Killarney, eleven years ago.

M. Fleury.

We have also to announce the death, on December 7, in Paris, of M. Tony Robert Fleury, President d'Honneur de la Société des Artistes Français, aged seventy-three years. He was a pupil of his father, J. N. R. Fleury, and of Cogniet and Paul Delaroche. M. Fleury first exhibited in the Salon in 1850—winning "Warsaw: Massacre of April, 1861." He painted many portraits, "Le Lever de l'Ouvrière" and "Marie Antoinette, le Matin de son Exécution"; his "Le dernier jour de Corinthe," for which he gained a medal of honour, is, with several others by him, in the Luxembourg Gallery.

OBITUARY.—Continued on page 727.

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, is to be sent in.

DECEMBER 30. — Birmingham. EXTENSION. — Erection of an extension to the station in Water-street, Aston. Quantities, on deposit of 2s., from the Quantity Surveyor, Mr. Christopher Silk, 38, Newhall-street, Birmingham. The drawings are at the offices of the architects, Messrs. Arthur Harrison & Cox, Council Chambers, 169, Colmore-row, Birmingham.

JANUARY 2, 1912. — West Hartlepool. TRAMWAY. — For the laying of about 11 miles equivalent light track of tramway. Plans and conditions in, and specification and quantities, on deposit of 11s., from Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer, Municipal Buildings.

JANUARY 3, 1912. — Sheffield. TELEPHONE EXCHANGES. — The Commissioners of H.M. Works and Public Buildings invite tenders for erection of telephone, Sheffield, and alterations to existing exchange. See advertisement in this issue for further particulars.

JANUARY 5, 1912. — Barking. SCHOOL. — The Barking Town Education Committee invite tenders for an elementary school in Ripple-road. See advertisement in this issue for further particulars.

JANUARY 5, 1912. — Breconshire. ALTERATIONS. — For the following works, for the Breconshire Education Committee: — Crickhowell Municipal School, erection of new classrooms and alterations to existing building; Llangantenn Municipal School, addition of new classroom, new classrooms, etc. and alterations to existing building; Talgarth Council School, erection of 20 girls' cloakroom and other works. Mr. C. W. Surveyor, County Hall, Breconshire Education Building, County Hall, Brecon.

JANUARY 5, 1912. — Edenbridge. SPECIAL SUBJECTS BUILDING. — The Kent Education Committee invite tenders for special subjects building. See advertisement in this issue for further particulars.

JANUARY 5, 1912. — Portsmouth. POST-OFFICE EXTENSION. — The Commissioners of H.M. Works and Public Buildings invite tenders for demolition of old premises and extension of Head Post-office. See advertisement in this issue for further particulars.

JANUARY 5, 1912. — Welling. KENT. SCHOOL. — The Kent Education Committee invite tenders for new Council school at (Bexley) Welling. See advertisement in this issue for further particulars.

JANUARY 6, 1912. — Guildford. COTTAGES. — The Guildford B.C. invite tenders for erection of twenty cottages in Cline-road. See advertisement in this issue for further particulars.

JANUARY 6, 1912. — Manchester. SCHOOL. — The Manchester Education Committee invite tenders for a new school of domestic economy. See advertisement in this issue for further particulars.

JANUARY 6, 1912. — Pontardawe. SEWAGE WORKS. — Construction of storm-water, screening chamber, detritus tanks, siphon, circular percolating filters, humus tanks, etc. and levelling and laying out of land at the Hall, etc. Plans seen, and quantities, conditions, and form of tender from the Engineer, Mr. John Morgan, Herbert-chambers, Pontardawe, on deposit of 5s.

JANUARY 8, 1912. — Loose, Kent. SCHOOL. — The Kent Education Committee invite tenders for new Council school. See advertisement in this issue for further particulars.

JANUARY 8, 1912. — Pembroke. SCHOOL. — For the erection of a new Council school at St. Hilda's, Pembroke. Plans and specifications from the architect, Mr. D. E. Thomas, 17, Victoria-place, Haverford.

JANUARY 10, 1912. — Camberwell. EXTENSION WORKHOUSE. — The Camberwell Guardians invite tenders for erection of additional accommodation for nurses at the Workhouse in Constance-street. See advertisement in this issue for further particulars.

JANUARY 11, 1912. — East Elloe. COTTAGES. — The East Elloe R.D.C. invite tenders for the erection of cottages within certain parishes. See advertisement in this issue for further particulars.

JANUARY 11, 1912. — Fakenham. SCHOOL, ETC. — Erection of new school and erection of cloakroom and manual instruction rooms. Mr. H. J. Green, architect, Castle-meadow, Norwich. Quantities on deposit of 11s.

JANUARY 11, 1912. — London. SCHOOL. — Erection of a new County High School for Girls, at Church-hill, Walthamstow, Essex. Plans and specifications from the architect, Mr. C. J. Dawson, F.R.I.B.A., 11, Cranbrook-road, Ilford, Essex. Deposit of 5s.

JANUARY 11, 1912. — Walthamstow. SCHOOL. — The Walthamstow Higher Education Sub-Committee invite tenders for the erection of a new County High School for 300 girls. See advertisement in this issue for further particulars.

JANUARY 15, 1912. — Stratford. ADDITIONS, ETC., TO SCHOOLS. — The West Ham Education Committee invite tenders for alterations and additions to Colegrave-road and Water-lane schools. See advertisement in this issue for further particulars.

JANUARY 15, 1912. — Halifax. WORKS. — Extension of the sludge-pressing works, gauge weirs, lime-mixing plant, etc., at the Sewage Disposal Works, Copley. Plans and specifications seen, and forms of tender from Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax. Deposit of 5s.

NO DATE. — Addlestone. ALTERATIONS. — For alterations at Addlestone. Quantities, form of tender, etc., from Mr. Henry J. Brookes, Secretary, Princess Mary Village Homes, Addlestone.

NO DATE. — Earlsheaton. HOUSES. — Erection of four houses at Bank Top. Plans and quantities from Messrs. John Barton & Son, architects and surveyors, Halifax-road, Dewsbury.

NO DATE. — Keighley. EXTENSIONS. — For extensions to the Technical Institute. Quantities from Messrs. W. W. & A. Sugden, architects, North-street, Keighley.

NO DATE. — Laiterdyke. HOUSES. — Erection of five houses and a stable in Broad-lane, Laiterdyke. Apply Gillam, Hamerton-street, Bradford.

ENGINEERING, IRON, AND STEEL.

DECEMBER 20. — South Shields. PUMPS, ETC. — For erection of suction and delivery piping for one centrifugal pump, steam piping to turbine separator, injection to and discharge from condenser, and alterations on existing piping consequent upon the installation of the foregoing. Specification, conditions, and drawings from Mr. J. H. Cawthra, M.Inst.E.E., A.M.Inst.M.E.E., Borough Electrical Engineer, South Shields. Deposit of 10s. 6d.

DECEMBER 21. — Manchester. HEATING. — For fixing low-pressure heating apparatus at the Gibbon-street Municipal School, Beswick. Plans and quantities at the Education Offices, Deansgate, Manchester, on deposit of 11s.

DECEMBER 25. — Glasgow. BRIDGES. — For the renewal of the superstructures of five under-bridges on the Balerno and Wilsontown branches, for the Caledonian Railway Company. Drawings at the office of the Company's Engineer, Buchanan-street Station, Glasgow. Specification and schedule on deposit of 21s. 2d.

JANUARY 5, 1912. — Cardigan. BRIDGE. — Erection of a culvert bridge and wing walls at Aberporth. Plans and specifications at the Clerk's Office, Quay-street, Cardigan. Mr. David Davies, Clerk to the Council.

FURNITURE, PAINTING, MATERIALS, ETC.

DECEMBER 16. — Settle. PAINTING. — For painting six cottages, Batty Croft, Settle. Specifications at Mr. Richard Searles, architect, Settle.

DECEMBER 18. — Ashton-under-Lyne. PAINTING. — For the painting, distemper, etc., of Christ Church Central, Gatefield, and Holy Trinity Schools. Specifications at the Education Office. Mr. John Neal, Borough Comptroller, Town Hall, Ashton-under-Lyne.

DECEMBER 18. — East Ham. DEMOLITION. — The East Ham Education Committee invite tenders for the demolition of the old vicarage building, and for removal of the old material. See advertisement in this issue for further particulars.

DECEMBER 18. — Plymouth. PAINTING. — For outside painting work at the Hel's Charity Almshouses, Prince Rock. Mr. W. H. Davy, Clerk to the Managers, Greenbank-road, Plymouth.

*** DECEMBER 18. — Dartford.** IRON AND WOOD FENCING. — The Metropolitan Asylums Board invite separate tenders for supply and delivery of iron and wood fencing materials. See advertisement in this issue for further particulars.

DECEMBER 20. — Canterbury. PAINTING. — For distemping, painting, etc., of the city police station. Particulars from Mr. A. O. Turley, A.M.Inst.C.E., City Surveyor, Guildhall-street, Canterbury.

DECEMBER 20. — Harrogate. PAINTING, ETC. — For colouring, painting, whitewashing, etc., at the Royal Bath Hospital and Rawson Convalescent Home, Harrogate. Mr. B. Shaw, Secretary.

JANUARY 6, 1912. — Manchester. RED AND BUTT TERRACE. — The Manchester Education Committee invite tenders for supply of red and buff terra-cotta. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

DECEMBER 16. — Chorley. MAINS. — For laying of cast-iron water-mains, with valves, hydrants, etc. Particulars, on deposit of 11s., from Mr. A. Gilly, Surveyor, 9, High-street, Chorley.

DECEMBER 16. — Hayward's Heath. MATERIAL. — For supply of broken granite and flints. Particulars and forms of tender from Mr. A. MacArthur, C.E., Surveyor, Council Offices, Hayward's Heath.

DECEMBER 16. — Totnes. FOOTPATHS, ETC. — For erecting and forming fences, forming footpaths, and other works in connection with the cemetery extension. Plans and specifications from the Borough Surveyor, Mr. W. F. Toller.

DECEMBER 18. — Blackpool. STREETS. — For sewerage and forming private streets. Plans and specification with Mr. J. S. Brodie, Borough Engineer, Town Hall, Blackpool. Quantities on deposit of 11s.

DECEMBER 18. — Blackrock. ROADWAY. — For widening roadway at Temple Hill and at Rosefield. Plans and specifications at the Town Clerk's Office, Town Hall, Blackrock. Mr. R. F. Heron, Town Clerk.

DECEMBER 18. — Glasgow. STREETS. — For paving Fisher-street and McIntosh-street with tar macadam. Specifications and forms of tender at the Office of Public Works, 64, Cochrane-street, A. W. Myles, Town Clerk.

DECEMBER 18. — Guildford. ROAD. — For the extension of Cline-road. Plans and specification seen, and form of tender from Mr. C. G. Mason, A.M.Inst.C.E., Borough Surveyor, Tinsgate.

DECEMBER 18. — Thurstonland. MAIN. — For laying cast-iron water main from Lydgate to Thurstonland. Plans seen, and quantities from Mr. J. Berry, Architect and Surveyor, 3, Market-place, Huddersfield.

DECEMBER 20. — Barlestone. SEWER. — For providing and laying earthenware socket pipe sewer. Plans and specifications from Mr. W. M. Sykes, Surveyor, Ibsack.

DECEMBER 22. — Reading. SEWER. — For laying pipe sewer in Basingstoke-road. Drawing and specification seen, and forms of tender from Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

DECEMBER 28. — Newmains. DRAINAGE. — For the construction of a sewerage system and sewage purification works. Plans seen, and specification from Mr. W. L. Douglas, M.Inst.C.E., District Engineer, District Offices, Hamilton. Deposit of 11s.

DECEMBER 30. — Derby. STONE. — Supply of broken stone. Form of tender and conditions of contract from Mr. J. W. Horton, A.M.Inst.C.E., County Surveyor, County Offices, St. Mary's-gate, Derby.

JANUARY 1, 1912. — Berkshire. MATERIALS. — Supply of broken road materials, gravel, and sand. Forms of tender from Mr. J. Fred Perkins, County Surveyor, The Forbury, Reading.

JANUARY 15, 1912. — Gloucester. STONE. — Supply of stone for use on main roads. Forms of tender from Mr. E. S. Simeon, M.Inst.C.E., County Surveyor, Shire Hall, Gloucester.

*** JANUARY 16, 1912. — Tottenham.** UNDERGROUND CONVENIENCE. — The Tottenham U.D.C. invite tenders for erection of an underground convenience in Bruce Grove. See advertisement in this issue for further particulars.

Auction Sale.

Nature and Place of Sale.

By whom Offered.

Date of Sale.

REELHOLD BUILDING LAND, FULHAM, S.W. — At the Mart

Edwin Fox, Bousfield, Burnetts, & Baddeley

Jan. 10

BITUARY — Continued from page 725.

M. E. Saglio.

I. Edmond Saglio, member of the Académie des Inscriptions et Belles Lettres, and, until 1903, director of the Cluny Museum, died in Paris, at eighty-three years, on December 8. With M. Dureau, he began, in about 1870, his work, the "Dictionary of Greek and Roman Antiquities." He was director of the pelius factory, and afterwards Conservator of the Department of Medieval Sculpture in Louvre.

Mr. G. Gordon Hoskins.

The *Newcastle Chronicle* records the death, at his residence, Harewood-grove, Darlington, of Mr. George Gordon Hoskins. The deceased gentleman, who had attained the age of seventy-four, retired from practice in 1907, being succeeded by his brother, Mr. Walter H. Hoskins, and later he had been in very indifferent health. Mr. Hoskins' chief work perhaps was the Middlesbrough Municipal Buildings and Town Hall, which were erected in 1883 and 1884, at a cost of

120,000l. At Darlington some of his works are the Queen Elizabeth Grammar School, the Edward Pease Public Library, the hospital and dispensary, and the fever hospital. He also designed the Harlepool Exchange at West Hartlepool. Amongst his other works are cemetery chapels and churches at Darlington and South Stockton. Mr. Hoskins was the eldest son of the late Capt. Francis Hoskins, of the 1st Royals, his mother being Julia, second daughter of Mr. William Hill, of Temple House, near Portsmouth. Educated at private schools in London and Paris,

Mr. Hoskins entered upon the profession of architect by becoming a pupil of Mr. W. D. Haskoll, of Westminster. He went, in 1864, to Darlington, where his abilities found early recognition, and his work is to be found in every part of the district. It consists of numerous mansions and villa residences, and among his other erections may be mentioned banks at Bishop Auckland, Sunderland, Middlesbrough, Barnard Castle, and Thirsk. Mr. Hoskins was appointed a Darlington Borough Magistrate in 1892, and he was elected to the County Bench in 1908. He was for some years Chairman of the Borough Licensing Committee. For a considerable period he was a member of the Darlington Town Council.

PATENTS.

APPLICATIONS PUBLISHED.

26,394 of 1910.—John Hutton: Gully grid.
26,392 of 1910.—Robert Thomson and William Affleck Thomson: Ferro-concrete floors.
27,473 of 1910.—George Hutton: Bar for use in reinforced concrete.
27,374 of 1910.—George Hutton: Reinforced concrete.
27,655 of 1910.—Vittorio Statti: Method of and apparatus for reproducing solids, statuary, and the like.
28,838 of 1910.—Frederick Bath Burley and Ernest Jones: Combination ranges, coppers, and baths.
1,156 of 1911.—R. Waygood & Co. and Henry Cecil Walker: Lifts and hoists.
2,942 of 1911.—William Anderson: Siphon cisterns.
7,185 of 1911.—Francis Henry Crittall: Manufacture of metal casements.
13,365 of 1911.—Ferdinand Barchartz: Hollow building blocks.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 1.—By HARRY BALL.
Bedford.—11 and 13, Denmark-st., f. y. 31l. n. 4200
December 4.—By FOSTER & CRANFIELD.
Hanwell.—Deans-rd., f. g. rents 10l. 10s. reversion in 88 yrs. 230
West Ealing.—Leighton-rd., f. g. rents 15l. 15s. reversion in 88 yrs. 340
Lealand-ter., f. g. rents 15l. reversion in 88 yrs. 345
By LOCKING & WALKER.
Clapton.—1 and 2, Heyworth-rd., f. y. 81l. n. 850
By HUKBERT & PLINT.
Warcop, Westmorland.—Turn Moor Farm, 46a. 2 r. 35 p. f. and c. 682
By FRANK LLOYD & SONS.
Broomhall, Cheshire.—Baddington Estate, 1,908 acres, f. 73,726
December 5.—By S. WALKER & SON.
Fulham New Kings rd., f. g. rents 31l. 8s. reversion in 88 yrs. 1,168
Battersea. Culvert-rd., f. g. rents 22l. reversion in 51 yrs. 496
Culvert-rd., etc., f. g. rents 28l. reversion in 41 to 48 yrs. 710
Bromham-st., f. g. rents 44l. 10s. reversion in 50 to 56 yrs. 907
Bromham-st., f. g. rents 13l. reversion in 48 yrs. 970
Berkley-st., etc., f. g. rents 23l. reversion in 45 to 57 yrs. 837
Totterham. Cranbrook-rd., f. g. 6l. reversion in 68 yrs. 415
December 6.—By BAKER, PAYNE, & LEPPER.
Beckenham, Kent.—122 to 130 (even), Mackenzie-rd., n. 88 yrs. g. r. 30l. w. r. 17l. 16s. 700
Totterham.—136 and 138, Cornwall-rd., f. w. r. 67l. 12s. 840
By EDWIN FOX, ROUSEFIELD, BURNETTS, & BADDLEY.
Limehouse.—12, Locksley-st., n. 48 yrs. g. r. 4l. y. r. 29s. 168
By HEATH, BROWN, & SENEATH.
Norwood.—18, Secondale-rd., n. 44 yrs. g. r. 8l. y. r. 30s. 100
By WILKINS & CO.
Finchley.—Durham-rd., f. g. rents 14l. 14s. reversion in 88 yrs. 525
Bowes Park.—Maudston-rd., f. g. rents 17l. reversion in 80 yrs. 435
Warwick rd., f. g. rents 17l. reversion in 80 yrs. 425
Totterham.—Park-rd., f. g. rents 14l. 17s. reversion in 72 yrs. 295
Wandsworth. Garrett-lane, f. g. 10l. 10s. reversion in 71 yrs. 265
Willesden. Church-rd., f. g. rents 24l. reversion in 36 yrs. 475
Bristol.—Sneyd-park, f. g. rents 92s. reversion in 94 yrs. 2,250
By WOOTTON & SONS.
City-rd.—123 and 125, East-rd. (s.), n. 36 yrs. g. r. 2l. y. r. 14s. 700
By HENRY HENDRICKS & CO.
Bidford-on-Avon, Warwick.—Avonside House and 4 a. 3 r. 10 p. f. 1,300

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

By MADRISON, MILES, & MADRISON.
Belton, Suffolk.—Eight cottages, f. Post Office, f. 270
December 7.—By C. C. & T. MOORE.
Minorities.—No. 52 (s.), f. y. 90l.
Leyton.—120, 122, and 124, Birkbeck-rd., n. 315
68 yrs. g. r. 12s. f. y. 78s.
241, High-rd., n. 68l. yrs. g. r. 8l. 8s. p. 150
102, 104, and 106, Grove Green-rd., n. 80l. yrs. g. r. 23l. 10s. w. r. 117s.
Hoxton. 68 to 71, Buckland-st., n. 23 yrs. 603
77 to 85 (odd), Beidport-pl., n. 11 yrs. g. r. 22l. y. r. 10s. 140
By H. J. BLISS & SONS.
Hoxton.—36, 38, and 40, Minerva-st., n. 18 yrs. g. r. 15l. 15s. w. r. 16l. 10s. 250
By CORAT BROS.
Hackney. 22 and 24, Morning-lane (s.), c. y. r. 45l. 470
By MARK LIEBL & SONS.
Mile End.—30 to 43, Lyall-rd., n. 35 yrs. g. r. 4l. 10s. y. r. 38s. 2,800
14, Selwyn-rd., n. 35 yrs. g. r. 10s. w. r. 39l. 190
Limehouse. 4 and 6, Galt-st., 166, 168, and 170, Rhodeswell-rd., f. w. r. 120l. 785
By STRICKSON & SONS.
Norwood. Beulah Hill, f. g. 25l. reversion in 88 yrs. 520
Waltham.—10, f. g. 10s. reversion in 31 yrs. g. r. 10l. w. r. 98l. 16s. 300
Sydenham. 51 and 53, Aconia-rd., n. 65 yrs. g. r. 11l. 16s. w. r. 37l. 4s. 225
Teddington.—Broad-st., f. g. rents 24l. reversion in 62 yrs. 1,915
Norwood.—Langley-rd., f. g. rents 63l. reversion in 90 yrs. 1,360
Park-rd., f. g. rents 21l. reversion in 63l. 465
Stratford.—Western-st., f. g. rents 20l. reversion in 50 yrs. 400
Totterham. Longola-rd., f. g. rents 34l. 10s. reversion in 8 yrs. 710
December 8.—By FIELD & SONS.
East Ham.—76, Ruskin-av., f. w. r. 24l. 14s. 180
By HAMILTON & CO.
Edmonton. 56 to 79 (odd), St. Mary's-rd., n. 85 yrs. g. r. 40l. w. r. 157l. 8s. 800
By ALFRED SQUIRE & CO.
Regent-st.—41, Leighton-st. (s.), n. 4 yrs. g. r. 45l. y. r. 5l. 100
St. John's Wood.—2 and 4, Nugent-st., n. 55 yrs. g. r. 30l. y. r. 11s. 950
By SARON WALLACE & CO.
Carshalton, Surrey. 4, North-st., f. p. 400
By VENTON, BULL, & COOPER.
Wandsworth.—Jewell-rd., f. g. rents 54l. reversion in 55 yrs. 1,120
Holloway.—Crownwell-rd., f. g. rents 21l. reversion in 54 yrs. 430
Milton-gr., f. g. 7l. reversion in 53 yrs. 150
Rupert-rd., f. g. r. reversion in 55 yrs. 140
Shepherd's Bush.—Melina-rd., f. g. rents 84l. reversion in 42 yrs. 1,730
Enfield.—Nazea Head-rd., f. g. rents 70l. reversion in 87 yrs. 1,280
Cattford. Glenwood-rd., f. g. 6l. 10s. reversion in 55 yrs. 135
Leyton.—Goodall, Millside-rd., etc., f. g. 33l. 10s. reversion in 70 yrs. 6,655
Grove Park-rd., f. g. 8l. reversion in 57 yrs. 115
Pimlico.—Sutherland-st., f. g. rents 2s. reversion in 25 yrs. 205
Sutherland-st., f. g. rents 27l. reversion in 22 yrs. 745
Sutherland-st., f. g. rents 27l. 8s. n. 26 yrs. g. r. 10l. with reversion 1,145
Sussex-st., f. g. rents 24l. 8s. n. 26 yrs. g. r. 3l. with reversion 275
Westmorland-st., f. g. rents 94l. 10s. n. 26 yrs. g. r. 12l. with reversion 1,120

Contractions used in these lists.—F. g. for freehold ground-rent; L. g. for leasehold ground-rent; L. g. r. for improved ground-rent; g. r. for ground-rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; n. for estimated rental; w. r. for weekly rental; q. r. for quarterly rental; y. r. for yearly rental; u. t. for unexpired term; p. a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; glns. for gardens; yd. for yard; gr. for grove; b. h. for beerhouse; p. h. for public-house; o. for offices; s. for shops; ct. for court.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications, and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premised Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

* * * Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices, and these which should be remembered by those who make up this information.

BRICKS, &c.			
Per 1000 Alongside, in River.			
Best Stocks	1 10 0	Best Blue Pressed	4 s. d.
Picked Stocks for Facings	1 13 0	Staffordshire	3 16 0
		Do. Bullnose	4 0 0
Per 1000, Delivered at Railway Depot.			
	4 s. d.		4 s. d.
Flettons	1 10 0	Best Blue Pressed	4 s. d.
Best Fareham	1 10 0	Staffordshire	3 16 0
Best Portland Cement	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed	5 0 0	Best Staffordshire	4 0 0
Bluebon Facing	5 0 0	Fire Bricks	4 0 0
GLAZED BRICKS—			
Best White	1 10 0	Double Headers	13 17 0
Ivory, and Salt	5 6 0	One Side and two	17 17 0
Ends	11 7 6	Ends	17 17 0
Headers	10 17 6	Two Sides and	18 17 0
Quoins, Bullnose,	14 17 6	One End	18 17 0
and 4 in. Flats	14 17 6	Spays & Squints	18 17 0
D'ble Strutchers	16 17 6		
Second Quality £1 10s. per 1000 less than best.			
Thames and Pit Sand	6 9 per yard, delivered		
Thames Ballast	5 6 per ton, "		
Best Portland Cement	30 6 per ton, "		
Best Ground Blue Lias Lime	19 0 " "		

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.
Grey Stone Lime 13s. 6d. per yard delivered
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly dep.

STONE.

Per Ft. Cube.	
BATH STONE—delivered on road wagons, a. d.	
Paddington Depot	1 6 0
Do. do. delivered on road wagons, Nine Elms Depot	1 8 0
PORTLAND STONE (30 ft. average)—	
Brown Whitbed, delivered on road wagons, a. d.	
Paddington Depot, Nine Elms Depot, or Pimlico Wharf	2 3 0
White Baebed, delivered on road wagons, a. d.	
Paddington Depot, Nine Elms Depot, or Pimlico Wharf	2 4 0
Per Ft. Cube, delivered at Railway Depot.	
Ancestor in blocks	1 10 0
Beet in blocks	1 6 0
Greenishall in blocks	1 10 0
Darley Dale in blocks	2 4 0
Bed Cershill in blocks	2 8 0
YORK STONE—Robin Hood Quality.	
Per Ft. Cube, Delivered at Railway Depot.	2 4 0
Scapelled random blocks	2 10 0
Per Ft. Super., Delivered at Railway Depot.	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8 0
6 in. rubbed two sides ditto	2 10 0
3 in. sawn two sides slabs (random sizes)	0 11 0
2 in. to 2 1/2 in. sawn one side slabs (random sizes)	0 11 0
1 1/2 in. to 2 in. ditto, ditto	0 11 0

HARD YORK.

Per Ft. Cube, Delivered at Railway Depot.	
Scapelled random blocks	3 10 0
Per Ft. Super., Delivered at Railway Depot.	
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8 0
6 in. rubbed two sides ditto	2 10 0
3 in. sawn two sides slabs (random sizes)	0 11 0
2 in. self-faced random flags	0 11 0

SLATES.

Per 1000 of 1800 at Railway Depot.			
In. In.	£ s. d.	In. In.	£ s. d.
20x10 best blue	13 2 6	20x10 best blue	13 17 0
Bango	13 7 6	20x12 ditto	18 7 0
20x12 ditto	13 7 6	18x10 ditto	13 5 0
20x10 1st quality	13 0 0	16x8 ditto	10 10 0
ditto	13 0 0	20x10 permanent	11 12 0
16x8 ditto	7 5 0	green	6 12 0
22x10 best blue	13 12 6	18x10 ditto	9 12 0
Formed	12 12 6	16x8 ditto	11 12 0
16x8 ditto	6 12 6		

TILES.

At Railway Depot.	
s. d.	
Best plain red roofing (per 1000)	42 0
Hip and Valley (per doz.)	3 7
Best Broseley (per 1000)	50 0
Do. Ornamental (per 1000)	52 6
Hip and Valley (per doz.)	4 0
Best Bluebon (per 1000)	57 6
Do. Ornamental (per 1000)	60 0
Hip (per doz.)	4 0
Valley (per doz.)	3 0
Best "Hartshill" brand, plain sand-faced (per 1000)	47 0
Do. pressed (per 1000)	47 0
Do. Ornamental (per 1000)	50 0
Hip (per doz.)	4 0
Valley (per doz.)	3 0
Best Stafford (per 1000)	57 6
Do. Ornamental (per 1000)	60 0
Hip (per doz.)	4 0
Valley (per doz.)	3 0

WOOD.

BUILDING WOOD.	
At per standard.	
Deals: best 3 in. by 11 in. and 4 in.	£ s. d.
by 9 in. and 14 in.	15 10
Deals: best 3 by 9	13 10 0

CHISWICK.—For the making up of Sharon-road, Chiswick, for the Chiswick Urban District Council. Mr. Edward Willis, A.M.Inst.C.E., Engineer and Surveyor, Chiswick Town Hall:—

	Granolite.	Patent Victoria.	Croft.	Excelsior.	Atlas.	Brookes' Adamant.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
G. Wimpey, & Co.	388 17 9	389 5 9	371 0 0	371 0 0	371 0 0	371 0 0
Higgs & Randall.	407 18 10	407 18 10	407 18 10	379 5 9	379 5 9	398 0 0
E. Free & Sons	379 10 11	364 16 11	363 4 3	388 2 10	401 8 2	404 13 6
F. G. Brummell, Willesden				364 16 11	358 6 3	356 13 7

[Surveyor's estimate, £377.]

FENDON.—For Park-road and Queen's-road sewerage, etc., for the N.W. Urban District Council. Mr. S. Slater Grimley, M.Inst.C.E., Engineer and Surveyor to the Council:—

	Hoop-lane widening, etc.	For Ordinary Pipes.	Add if Jenning's Joints Used.	Add if Grouted Composite Joints Used.	Church- terrace Improve- ment.	Bitney- hill Kerbing, etc.	Hammer- lane, Kerbing, etc.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Clements, Knowling, & Co.	1,337 0 0	4,877 0 0	39 10 0	191 10 0	137 0 0	897 0 0	737 0 0
J. Mowlem & Co., Westminster	911 15 11	4,451 13 6	62 15 0	184 7 6	107 3 11	721 6 7	595 15 10
T. W. Pedrette, Enfield	1,124 14 0	4,343 3 2	90 0 0	165 0 0	110 4 2	709 2 8	574 5 0*
F. G. Brummell	1,016 13 2	4,235 4 4	31 10 0	157 0 0	109 1 3	728 19 4	594 18 0
G. Wimpey & Co.	1,079 11 6	4,215 13 6	42 15 0	162 13 4	130 12 2	744 12 1	603 1 6
J. Dickson	1,128 4 4	4,630 6 6	33 0 0	207 0 0	118 11 6	1,027 8 6	828 16 0
R. Ballard, Child's Hill	1,380 1 0*	3,929 7 6	20 0 0	150 0 0	114 14 4	717 10 10	591 1 6
H. Farrow	1,035 4 9	3,854 8 7	27 12 6	192 15 0	107 14 4	809 8 2	649 15 0
Wilson, Border, & Co., Romford	1,025 10 6	3,454 8 11	90 13 4	170 12 3	123 13 8	812 1 2	644 9 8
Wetternan Bros.		3,433 2 9					
W. Griffiths & Co.	1,176 15 2				121 16 6	787 4 0	652 8 8
Engineer's Estimate†	982 0 0	4,632 11 11			171 6 4	622 5 4	597 6 6

† Including all castings and paving supplied by Council.

PENGAM. For erecting house at Pengam, for Miss Davies, City Ebbw Vale, Pengam. Mr. H. Gabe Jones, architect, Hengoed:—

E. James, Hengoed*..... £240 19

SCUNTHORPE.—For construction of brick sewer, granite concrete sewer, etc., Contract No 1. Mr. H. Walker, M.Inst.C.E., engineer, Nottingham:—

C. Chamberlain	£3,352 7 0	Middleton & Hopper	£5,264 2 11
J. E. Nadin	6,046 15 0	Edwards & Co.	5,110 19 0
T. Harper	5,960 0 0	T. W. Pedrette	5,050 0 0
Wellerman Bros.	5,563 16 2	H. E. Buckley	4,999 0 0
Lane Bros.	5,700 0 0	Bradford*	4,470 10 0
M.W.S. France, Ltd.	5,603 0 0		
G. F. Tomlinson	5,435 0 0		
A. H. Price & Co.	5,418 17 1		
G. Bell & Son, Ltd.	5,281 0 0		

[Engineer's estimate, £4,905.]

SUTTON-ON-SEA.—For the construction of sewers, providing engines, constructing outfall works, laying mains, etc., for the Spilsby Rural District Council. Mr. Herbert Walker, M.Inst.C.E., engineer, King-street, Nottingham:—

C. Hansman & Son	£8,388 0 0	Lane Bros.	£6,781 5 0
G. P. Trentham	7,711 18 0	T. W. Pedrette	6,750 0 0
F. Perks & Son, Ltd.	7,650 0 0	Exors. of J. Arundel	6,736 14 6
W. W. Balenman	7,498 15 2	A. J. Price & Co.	6,700 0 0
G. E. Holmes	7,405 0 0	G. F. Tomlinson	6,687 0 0
S. Porter	7,400 0 0	H. E. Buckley	6,537 18 0
J. E. Nadin	7,339 12 0	T. H. Harper	6,435 1 6
C. Chamberlain	7,190 14 0	Carlton	6,228 0 0
G. Bell & Son, Ltd.	6,853 0 0	M.W.S. France	6,073 6 3
Middleton & Hopper	6,925 0 0		

[Engineer's estimate, £6,275.]

OXFORD.—For Eskin College, Oxford (first section). Messrs. Joseph & Smith, architects and surveyors, 83, Queen-street, Chesham:—

J. Parnell & Son	£19,615 W. Davies	£2,720
Foster & Dickson	10,333	£2,720
W. Moss & Sons, Ltd.	9,965	£2,720
E. Organ	9,886	£2,720
Woodridge & Simpson	9,785	£2,720
	9,785	£2,720

† Withdrawn.

J. J. ETRIDGE, JR.

SLATE MERCHANTS. LTD.

EXPERTS IN

**SLATING,
TILING.**

BEST WORK ONLY.

Telephone 2685 Wall, or write—

BETHNAL GREEN SLATE WORKS,

BETHNAL GREEN, LONDON, E.

TREDEGAR.—For erection of twelve houses, etc., and new road on the Beaufort Estate, for the Glamorgan Building Club. Messrs. T. Williams & Sons, architects and surveyors, Tredegar:—

R. Williams	£2,534 10	L. Johns	£2,230 0
Davies & Price	2,450 0	W. Edwards	£210 0
D. C. Jenkins	2,340 0	W. Cosslett	2,042
W. Miles	2,274 0	Ystradymnach*	2,042
T. Dickinson	2,222 0		

ROADS.
T. Dickinson..... £331 0
W. Edwards..... 233 15
W. Miles..... 222 16
W. Cosslett, Ystradymnach*..... £184 16

WOLSTANTON.—For erection of new infants' school and cookery centre. Mr. W. F. Slater, architect, Burslem:—

G. M. Sambrook	£6,750	J. Cooke	£6,150
J. H. Broadhurst & Sons	6,390	H. Wardle	6,050
W. Rogers	6,350	H. Johnson	5,930
C. Smith	6,200	S. Heath, Basford	5,328

**Ham Hill Stone.
Doulting Stone.
Portland Stone.**

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trank & Son, The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalts.—The Seyssel and Metallic Lava Asphalt Company (Mr. H. Glenn), Office, 42, Poultry, E.C.4.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalt Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

LITHOGRAPHERS.

Employ a large and efficient staff especially for Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

JOINERY,

Of every description and in any kind of Wood.

CHAS. E. ORFEUR, LTD.

ESTIMATES
ON APPLICATION.

COLNE BANK WORKS,
COLCHESTER

Telephone: 695. Telegrams: "Orfeur, Colchester."

PILKINGTON & CO.

(ESTABLISHED 1838),

DEPTFORD WHARF,

190 & 192, CHEEK ROAD, DEPTFORD, S.E.

Telephone No.: New Cross 1102 (two lines).

Registered Trade Mark.

Polonceau Asphalte.

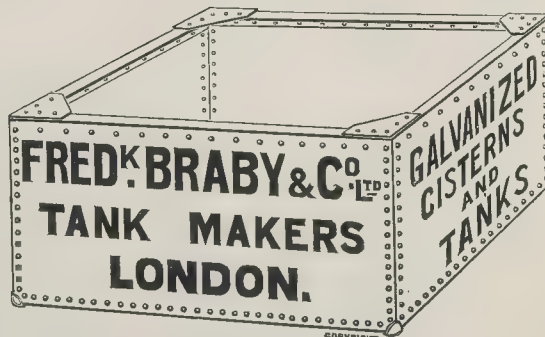
PATENT ASPHALTE AND FELT ROOFING.

ACID-RESISTING ASPHALTE.

WHITE SILICA PAVING.

SEYSSSEL ASPHALTE (Direct from the Mines).

ALSO AT DEPTFORD,
LIVERPOOL, BRISTOL,



Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W.

GLASGOW, FALKIRK,
BELFAST, & DUBLIN.

VOL. CL—No. 3594

DECEMBER 22, 1911.

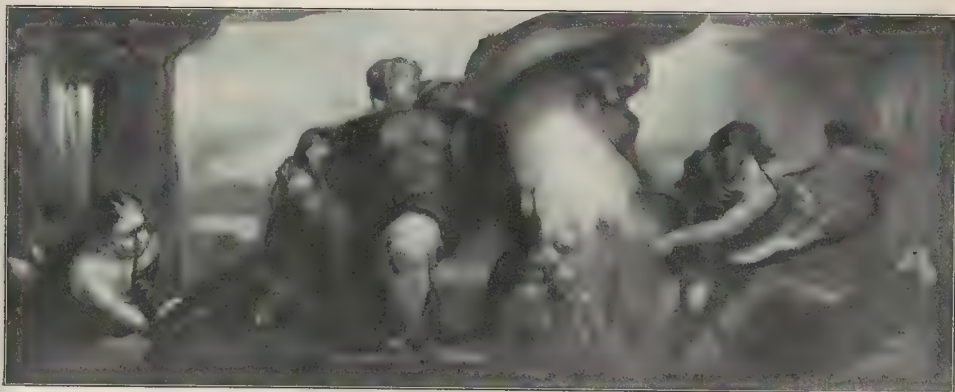
PAGE

[illegible]

MONTHLY HISTORICAL REVIEW :—	PAGE
SOME WORCESTERSHIRE CHURCHES.—II. (WITH ILLUSTRATIONS)	747
WICK CROSS, WORCESTERSHIRE (WITH ILLUSTRATIONS)	748
JACOBIN ARCHITECTURE AND HISTORICAL FACTS	749
NOTES	753
THE BUILDING TRADE :—	
THE LONDON CHAMBER OF COMMERCE AND LABOUR UNREST	754
BUILDING ACT REFORM	754
THE PLUMBERS' COMPANY (ANNUAL DINNER)	754
GOVERNMENT CONTRACTS	755
SUGGESTED STANDARDISATION OF COPPER TUBES	755
LONDON MASTER BUILDERS' ASSOCIATION	755
GENERAL BUILDING NEWS	755
APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 TO 1899	756
PROJECTED NEW BUILDINGS IN THE PROVINCES	756

	PAGE
MAGAZINES AND REVIEWS	757
METROPOLITAN ASYLUMS BOARD.....	757
METROPOLITAN WATER BOARD.....	758
LAW REPORTS	758
OBITUARY	759
LONDON COUNCILS.....	759
PATENTS	759
SOME RECENT SALES.....	759
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ..	760
PRICES CURRENT.....	762
TENDERS	763

ROYAL ACADEMY STUDENTS' DESIGNS, 1911: "THE
HALL OF A CITY COMPANY":—
PRIZE DESIGN, BY MR. ALAN BINNING.
DESIGN BY MR. L. H. BUCKNELL.



Royal Academy Schools, 1911: "Winter," by Mr. Archibald G. Barnes.

This "Design for the Decoration of a Portion of a Public Building" was submitted in competition for the Prize (30*l.*) and Silver Medal, which was won by Miss Williams.

LET us say frankly and at once that we expected better of Chelsea. Chelsea has become a name that counts in up-to-date art matters. We have become inclined to regard the coterie of artists who congregate there as consisting of men of a talent equal to any group of the sort in, let us say, Europe. Alert, impressionable, energetic, enterprising, they have already exercised a considerable influence on English art, tending without being antagonistic to the dominating influence of the Royal Academy. They are quite a different type of man from the old Chelsea coterie, we may, for the sake of locality, comparison, and argument, speak of the artists who composed the Pre-Raphaelite coterie in that sense. The comparison need carries us farther; for it would be difficult to believe that Ford Madox Brown, Burne-Jones, Rossetti, and the others of that group would not have been more adequately to a great decorative occasion than the Chelsea men would

appear to have done on the present occasion.

For the occasion was unquestionably great. And it was one, too, which equally concerns architects, painters, and municipal authorities, and other owners of buildings, private or public, who would wish to see their large wall spaces occupied by decorative schemes which are beyond the capacity of the talented craftsman or decorative tradesman. For the benefit of the large majority of our readers we may as well briefly explain what the occasion was. Chelsea having recently erected for itself a new Town Hall, an ex-Mayor, Mr. Christopher Head, suggested that the large hall should be decorated. The suggestion was favourably received by the Council, and it was decided that the work should be started by the decoration of four panels occupying the spaces between the four side doors, Lord Cadogan, Mr. Head, and other gentlemen having offered to defray the cost. Further, the Council invited the

collaboration of the Chelsea Arts Club in the realisation of their scheme, because it was felt "that the heterogeneous results achieved in most of the decorations in London was partly due to the absence of a controlling scheme, and that the choice of the artists and subjects should not be left to individual patronage only." By a vote of the Club Mr. Sargent, Mr. Steer, and Mr. Richards were chosen as judges. So it would seem on the face of it that no scheme of the sort could possibly have started under more favourable auspices for arriving at a satisfactory result.

Many of the most prominent artists in Chelsea have taken part in the competition, and the assessors have made their awards. We shall not question the justness of the awards. The result is disappointing for other reasons. It shows that English artists are still trammelled by the merely easel aspect of painting; it shows that the production of the subject picture, whether it be of the

superficial anecdotal kind or of the eclectic type which carries greater conviction because perhaps we may trace in it something of the method of a past-master—it shows, we say, that the production of either class of picture does not assist the artist in the realisation of what the Chelsea Arts Club designate a "comprehensive decorative scheme." Under the conditions of the competition the four panels were to be devoted to Chelsea celebrities—the first to the great artists; the second to the famous writers; the third to the leaders of religion, the genius of science, and the art of music; the last to kings and queens, soldiers and statesmen. The problem, therefore, which the Chelsea artists had to solve under these conditions was a difficult one. It evokes at once a series of counterfeit presentments which would be difficult to work into the design of a mural painting of a decorative character. The majority of the competitors have adhered strictly to the conditions; the counterfeit presentments are there, but no artist at the present exhibition has in our view resolved this gathering of great spirits into a symposium that can be considered ornamental. Neither in the grouping of the famous men and women, portrayed with extreme fidelity, nor in the symbolic figures which we find here and there, is there, except perhaps in two instances, any sufficient suggestion of the imaginative quality which pictorial mural work in its higher phases demands. We believe, however, that many of the artists might be safely entrusted with the decoration of a large building were they less handicapped by preliminary restrictions; and we do not wish to infer that the final accomplishment can in every case be altogether rightly estimated from the sketches. But, judging by the sketches, there is a remarkable absence of the power of co-ordinating the actual with the symbolic which would be necessary in any pictorial solution of the problem. We have refrained from dealing with the separate works. Mr. Sargent and his brother judges cannot, we imagine, have arrived at their awards without some hesitation, for the level of merit, so far as it goes, is remarkably well sustained.

THE EAST KENT COALFIELD.



PAMPHLET just issued by the Kent Coal Concessions, Ltd., contains a serious indictment of the position taken up by the Ecclesiastical Commissioners as to the development of their properties in East Kent. One item of the indictment is based on the fact that the Commissioners have curtly rejected all offers for areas in the neighbourhood of the existing companies' borings.

While this course may be sound policy in view of a possible appreciation of values in the near future, it seems somewhat unfair to those who have borne the brunt of the cost of proving and developing that neighbouring owners who have not expended a penny should reap the full benefit of the results of these experiments. The French system quoted in this pamphlet seems much better calculated to promote development and the interests of the community as a whole.

There, where all minerals are owned by the State, private enterprise is encouraged by assuring all adventurers, as a just and equitable reward for their risk and outlay, preferential grants of leases or concessions to work all minerals discovered and proved by such outlay at a fixed royalty of 5 per cent., and it is made impossible to ignore the successful prospector by refusing his legitimate application for a grant of such proved minerals, or to utilise the results of the outlay he has risked for the purpose of enriching others who have expended nothing in exploration.

The Kent Coal Concessions feel that having proved the existence of an exceptionally rich coalfield they have a moral claim to the first offer of options or leases, especially for those areas owned by a State Department. The richness of the field has now been conclusively established, the quality of the steam coal seams being slightly superior to that in South Wales, and the seams, ninety-six in number, having an aggregate thickness of 319 ft. 11 in. The average depth, 1,000 ft., while it to some extent discounts the value, is by no means prohibitive with good organisation and suitable apparatus. The proximity of the mines to Dover ensures an excellent market for navigation steam coal.

These brief particulars indicate how important to the country is the development of our newest coalfield, and these considerations bring us to another count in the indictment of the Ecclesiastical Commissioners to the effect that while refusing to negotiate in respect of their property in the neighbourhood of Dover and Sandwich, where the Kent Coal Concessions have their collieries, they have privately leased a large estate north of Canterbury to a syndicate in which German financiers have a large if not a predominant interest. Their object is fairly obvious—while holding those estates that are bound to appreciate in value owing to the operations of the Kent Coal Concessions they are not unwilling to make a profitable deal in other places, even when the offer comes from our chief commercial competitor.

Without saying exactly what, something in the transaction seems to go against the grain. Mainly, we think, this feeling is due to the lack of correlation between the various branches of the State; each, it is presumed, conducts its affairs solely with regard to its own interests, no matter how these may clash with those of the other functions of the Government as a whole.

Anyone—asked to what department the control of our coalfields should belong—would probably reply the Board of Trade, a department much better qualified to deal with a broad question such as this; but here we have a department presumably representing a certain section of the national interests dealing with these in the same way that a private owner would deal with his property, quite regardless of how other equally important national interests may be adversely affected, and subsequently endeavouring to justify its proceedings by replies to questions in the House of Commons that are, to say the least, incomplete and evasive.

The whole question is one of the

greatest gravity in view of the influence the development of these coalfields will exercise on the building and other interests in the district, and we have felt it incumbent on us to draw the attention of our readers to a matter of such vital public importance.

NOTES.

The Institute on the responsibilities of architects, by members of the Practice

Standing Committee, raise a question which the profession will have to consider most seriously. There is no doubt that the present tendency is to overwhelm the architect with so many ever accumulating responsibilities of a more or less professional nature that it is becoming impossible for him to perform properly the essential functions of his work as a skilled designer, which, after all, is the *raison d'être* of his existence. In the past responsibilities have been too lightly assumed as tending to increase the importance of the architect as a professional man, and the Institute has not been altogether guiltless of encouraging and fostering this attitude. The result is that responsibilities once eagerly accepted have now become intolerable. Nemesis has overtaken the profession, and it is coming to be generally recognised that the present position is no longer tenable. In this matter we think that architects are worse off than other professional men, and that the public has forgotten—and perhaps the profession has encouraged them to forget—that when all is said they engage a professional man at their own risk, not his. Considering the increasing intricacy of modern life and the innumerable matters which have some bearing on the real work of the architect, it is essential to think out the whole question and to determine which of these responsibilities are really necessary and which could be more properly left to other professional men, such as surveyors or lawyers. Of the ever-increasing activities of the architect's life architecture nowadays is apt to be the least. Less time is perhaps devoted to designing a building than to the multitudinous affairs incidental to its erection and to the troubles which may arise through no fault of his own after it has been erected. The result is that both architecture and the architect suffer to the ultimate detriment of the interests of the public.

St. Paul's
Bridge and
Party Politics.

At a recent meeting of the London County Council a vote of censure was moved by the opposition setting forth that the party in power had been guilty of mismanagement of the negotiations with the City Corporation in connexion with the construction of tramways over the proposed St. Paul's Bridge. This means, we fear, that the tram route has now become a party question, and that the different parties in the London County Council will be tempted to think more of scoring off their opponents than of providing the best means of linking up the north and

about trams. We have repeatedly expressed our opinion that the St. Paul's Bridge route, as proposed, is not the best one. Holding this view we naturally consider that the negotiations in question resulted in a tentative arrangement which is not in the best interests of the public, and that these interests will be best served if the arrangement is never confirmed. It is a most important question which should be discussed in the Council entirely on its merits and with no reference to any other consideration whatever. It will be most deplorable if either side deliberately make it a party question and advocate the ratification of the proposed arrangement with the City Corporation for purely party reasons and with no reference to its intrinsic merits.

The Aldwych Site. We learn that the Australian Commonwealth has decided to make the eastern end of the Strand-Aldwych site its stronghold in London, building thereon its offices and agencies as a basis perhaps of a reflex movement of deportation, or it may be, as in the case of Canada, for a standpoint whence the Mother Country's resources may be more easily reached. The site is to be bought freehold from the London County Council at a cost of 364,000*l.*, which works out at 15*l.* per square foot, and also is more than one-third greater than the sum proposed for the actual building. The wisdom of this action depends on the purposes to which these buildings are to be put. If Australia proposes to figure as a terrific shop—and the temptation of countries to regard themselves just as more or less successful stores appears to be becoming too strong to be withstood—then, of course, it is right to set up its booth in a crowded highway and recoup by quick returns and profits as large as may be. Let it make itself known to Londoners as one great aggregation of farms if it will.

The Actuality. If, however, it would show the quality of its people and embody the aspiration of democracy, or, as it would be, flaunt its achievements, under the regis of the Southern Cross, something more is needed—something in which the soul of the shopkeeper becomes ashamed, something more like a palace, statelier and calm. But this, one must suppose, is contrary to the "exigencies of the case" and the "spirit of the age," and historical truth will be exposed to those who can read it in the infallible chronicle of bricks and stones. There is to be a hall which will "occupy nearly the whole of the ground floor" (leaving a loophole for ascent), and it "will be used for the purpose of displaying the natural products of the various Australian States"—so runs the *Times* report. A show case, observe, is to be the apparent foundation of the whole.

The Dream. After all, one may not quarrel with a thing for being what it is; one can but turn to the medium of a work which so unerringly betrays its quality—a philosopher's consolation. The architect's solace is to frame a scheme, on

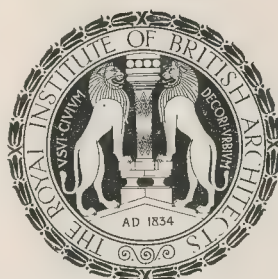
paper only, perhaps, but it may be to shape imaginings, if once the spirit be roused. In a forthcoming issue of the *Builder*, which is to be published on January 5, proposals for the development of the Surrey side of the Thames will be made in which there is provision for Colonial Embassies. A great Australian Consulate rising sheer from the river, and in the borough from which so many of the original "colonists" were drawn, would be poetic justice and fine irony.

The Infirmary Site, Manchester. In our review of the Manchester Competition last week we emphasised the unsatisfactory nature

of the problem of combining two buildings in a single architectural conception. Evidently these views are not universally held, as a Manchester firm of architects, going a step further, now suggests that not only could the Library and Art Gallery be included, but also the suggested Exchange, and publishes a much becomelined design for an extensive block planned to accommodate all three. It is true that a slight extension of the site is demanded, but this is a trifle compared with the advantages of housing Commerce, Literature, and the Arts under one roof. We believe Manchester is talking of a new cathedral; why not add that to the list and finish the job?

M. Honoré Daumet. The death of M. Daumet, the Royal Gold Medallist in 1908, deprives French

architecture of one of its most cultivated and scholarly exponents. M. Daumet's *forte* lay more in the skilful restoration of old buildings than in the design of new ones, and the appointments he held under the French Government gave him full scope for the exercise of his talents in this direction; his wide range of interests and personal charm of manner attracted all with whom he came in contact, and those who met him during his visits to this country must keenly regret the loss of one possessing such exceptional gifts of sympathetic intelligence.



THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday at No. 2, Conduit-street, under the chairmanship of Mr. Leonard Stokes.

Deceased Members.

Mr. Guy Dawber, in the absence of the Hon. Secretary, said he had to announce with regret the decease of Mr. Jas. R. Carroll, of Dublin, who was elected for two years a Fellow of the Institute and resigned the Fellowship in 1908, and Mr. Geo. Gordon Hoskins, elected an Associate in 1867 and Fellow in 1870. Mr. Hoskins would always be remembered by the very fine town hall he

built at Middlelestrough. He had also to announce the death of their distinguished corresponding member, M. Honoré Daumet, at the great age of eighty-six, who was a distinguished member of the French Institute, and the doyen of French architects. He studied his art in Greece and Rome, and won the Prix de Rome in 1855. He was appointed architect of the Palais de Justice in Paris in 1879. Mr. Dawber referred to other works on which the deceased was engaged (which has already been given in the *Builder*), and added that he was President of the Committee of the International Congress of Architects, and presided over a recent meeting at Rome. In 1906 M. Daumet attended the International Congress held in London, and many of them would remember his great personal charm and the deep interest he took in the proceedings. In 1908 he was awarded the highest honour that Institute could confer upon him—the gift of the gold medal. He moved that an expression of their regret be entered on the minutes, and that a message of condolence be sent to his widow and relatives, as well as to the relatives of the other two deceased members.

The motion was carried.

THE NEWER RESPONSIBILITIES OF ARCHITECTS.

The President explained that it was originally proposed to have had four papers, but it was felt that this was rather a large number. Mr. Saxon Snell had consented to read his paper on a future occasion, and Mr. Woodward's paper would also be postponed, as these were matters dealt with in it which were going to be the subject of litigation. The two papers to be read were by Mr. W. Henry White and Mr. E. Greenop.

Mr. White, in the course of his paper, said:—

"It has been stated by a lawyer, and it may be generally held by gentlemen of the legal profession as an article of faith, that 'a lawyer's first duty is to his client,' and architects would doubtless agree with this as a general principle; but if such an attitude prevents 'equity' from obtaining, it is a hard and bitter statement, and goes far to explain why the older position of confidence in one's fellow-beings has been driven away in favour of 'contracts' drawn with much and elaborate detail in the endeavour to prevent either party getting the 'better' of the other.

The object of these notes is not to attempt to teach architects how to get the 'best' of anybody, but to draw attention to the fact that they should be so educated as to be forearmed against the difficulties which beset them in their practice, and be taught to bring logically trained minds to bear upon all their work, so that their decisions may be received with confidence by clients, builders, and others. This question of training opens up another view of the situation, namely, that there is no definite professional course on the 'business' side that young men can take up.

Another important consideration which has arisen of late years is the change in the methods of contractors in carrying on their business. There is an increasing number of contractors who sub-let their work and, instead of having a practical and useful knowledge of building work as a craft, and being able to assist the architect in carrying out difficult matters, now run their business from a counting-house.

Again, modern buildings are so much more complex in the various parts and appointments, and so much 'specialist's work' has to be accommodated and provided for, which all tends to increase the architect's work and responsibilities. Facts, however, must be faced, and architects must realise their responsibilities and train themselves to meet them in a businesslike manner.

Difficulties are caused by the client changing his mind as the work proceeds consequent upon not understanding the drawings, and such changes often result in increased cost. This should be carefully explained to the client, and, in fact, he should be informed from time to time during the progress of the works as to the approximate amount of variations. The omission of this precaution, followed by the presentation of a big bill of extras at the completion of the work, is a frequent source of trouble, and probably results in the loss of a client who, had he been treated in a businesslike manner as the work

proceeded, would have been perfectly satisfied. Changes from the drawings and specification take place in almost every contract, and herein lies the danger of the "lump sum" contract, and the advisability of making the quantities a part of the contract; indeed, it would seem to be the only fair and reasonable method, and would obviate some of the difficulties which arise under the head of variations. The average specification that is brought before the Law Courts wants much revision to bring it up to the standard of modern requirements and limitations. Could not the Royal Institute of British Architects in the interests of its members suggest clauses as to the proper specifying of timber, a standard for concrete for floors, asphalt, paint, etc. clauses which could be accepted by the profession, and which would prevent so much conflicting evidence as is now given in the average building "case"?

It does not seem to have been generally realised amongst members of the profession that the architect's position in relation to his client is a most invidious one as regards liability. The builder, after the usual twelve months' maintenance clause has expired, is freed from all further responsibility towards the client, but the architect remains liable up to the period allowed by the Statute of Limitations—i.e., six years. This is a ridiculous position! The builder receives payment for doing his work properly, and, so far as can be reasonably expected, the architect has supervised and certified it as satisfactory. But some piece of scamping develops its faults, two, three, or five years afterwards; the builder has been freed—but the architect is still liable!

No architect can "live upon his job," and it is a sheer impossibility for him to know every detail of work that has been put into a building. He is compelled to accept the lowest tender, often from builders of the client's selection, and, however conscientious and careful he may be, it is obvious he cannot, without staying upon the work during the whole time it is being carried on, be sure that every part has been done properly. With large works and competent clerks of works and good contractors he may accept his liability with equanimity, but with work carried out without a clerk of works he should have a clear and definite understanding with his client on the subject of supervision, and the builder should remain responsible for any defective work, the faults of which only develop after the ordinary period of maintenance has elapsed.

Assume the case of an unreasonable or dissatisfied client or builder, who determines to try for his "rights," as he regards them, in the Law Courts! Cases will be quoted by Mr. Greenop showing that such actions may be brought on some of the following grounds, or others which the ingenuity of the lawyer's mind can suggest, viz.:—

Variations from the contract and additions or extras ordered without the consent of the client.

The materials not of the particular kind specified.

The work upon being opened-up found to be defective.

Water-pipes furred up in an undue space of time.

The contract not completed in time.

Goods ordered under provisional sums by the architect and not paid for by the contractor, although included in a certificate met by the client, who has had to pay twice over owing to the failure of the contractor.

The client declining to pay the architect's fees and the value and interpretation of the Royal Institute of British Architects' schedule of charges.

Payment disputed for work designed and not carried out.

The client claiming the drawings from which his building was erected.

The architect's liability for "negligence" in such matters as "dry rot," insufficiency of work and materials, specifying one material and allowing another kind to be used without the client's consent.

Quantities forming part of the contract, or lump-sum contract.

The arbitration clause.

Withholding or granting certificates from the client's and the builder's points of view.

The question of sub-contractors and the employment of specialists.

The client's responsibility for injury to workmen if the contractor is unable to pay and not covered by insurance."

Mr. Edward Greenop followed, and in the course of his paper, said:—

"The reader of the paper to which you have just listened, having brought to your notice generally the position in which we now find ourselves, there has devolved upon me the task of emphasising his deductions by describing in detail the circumstances under which that position has been brought about. Even thus the ground we can cover in the time at our disposal in a subject of such importance is necessarily very limited. I trust, however, that the matter I am about to bring to your notice may justify the time I shall occupy."

Before proceeding to do this I wish to offer an advance apology for any apparent unwarranted intrusion into the domains of a learned profession other than my own.

However, I may perhaps be excused for venturing the opinion that the architect has a pardonable claim to be permitted to view his responsibilities from a different standpoint to that of the lawyer, giving a necessarily broader aspect than, if I may say so without disrespect, the training of the legal mind allows. Indeed, I will go so far as to suggest that he may fairly be credited with holding, as it were, an intermediate position between the lawyer and what is understood in the common use of the term "layman." The nature of our profession necessarily keeps us, in its ordinary practice, in close touch with that of the law, and, moreover, we stand, by reason of the complex and ever-changing detail of our vocation, in a position of extreme vulnerability to the law's assaults. The thought invites the suggestion that a good architect must be half a lawyer, and I venture to add that if lawyers could at the same time be half architects our task this evening would have been but light.

Time will not permit of reference to other than leading cases of quite recent date, and to these, therefore, I purpose confining myself, except where any special point calling for notice may be involved.

Speaking generally, allegations of negligence may be considered as the most promising card to play when it is desired, from any cause, to avoid payment of an architect's fees; in fact, they may be looked upon as approximating in value to the ace of trumps. Strictly speaking, therefore, nearly all the cases I shall offer for your consideration should come under this heading. As a matter of convenience, however, the cases have been grouped under the several heads mentioned by Mr. White."

The following are the more important among those quoted by Mr. Greenop:—

Findlay v. Roques & Carvell.

"This was an action tried in 1907 before the Lord Chief Justice and a Special Jury for the recovery of architect's fees. The amount of the account was not disputed, but the client, a lady, set up a counterclaim for damages for negligence on the ground that she was wrongly advised as to the financial possibilities and risks attending her venture. It was alleged by the client that she was advised by the architects that there was a demand in the locality for small houses; that she could build the houses for a certain sum and sell them to considerable advantage. In the result, the cost of erection considerably exceeded the alleged estimate, and the sale price was much below expectations.

The jury found in favour of the client for a considerable sum. The case points to the danger of the architect associating himself with the investment aspect in such matters, unless specially instructed to do so.

Keyser v. Trask & Sons & Webb.

This action, fought in 1907, was for negligence against both architect and builder as co-defendants, and came before Mr. Justice Darling and a Special Jury. The building was a chapel, the walls of which were decorated by a mural artist. Four and a half years after the paintings were finished the paint began to peel off owing to damp. Another architect was thereupon called in, and on examining the walls reported the interior to be in places packed with rubbish of the character which usually accumulates

during a building job. It was contended by counsel for the architect that to have prevented the isolated instances of irregularities discovered, practically continuous supervision of the architect would have been necessary, and the evidence suggests strong doubt as to whether the packing of rubbish was the real cause of the damp from which the decorations had suffered. The jury, however, found against both architect and builder.

Lenning v. Davey & Salter.

This was an action against architects for negligence, the first stage of which was before Mr. Justice Darling and a Special Jury in the King's Bench in 1906.

The client, a solicitor, after having paid upon several interim certificates issued by the architects, revoked their authority to further certify; the architects, however, continued to issue certificates. The client refused to honour them, and the builder sued upon them. The client alleged as his defence to the builder's action, that there was bad work. The builder answered that upon this point the architect's certificate was final. Upon the case coming into Court, the client's defence proved to be valueless, and he was compelled to settle the action in Court. He thereupon brought an action against the architects for the recovery of a sum of 600*l.* damages and costs. Notwithstanding a strong direction by the Judge, pointing in the architect's favour, the jury found against them to the extent of 750*l.*

The architects appealed, and the appeal was heard by the Master of the Rolls with Lords Justices Cozens Hardy and Fletcher Moulton. Mr. Justice Darling reported to the Appeal Court that in his opinion the verdict of the jury was wrong.

The Court of Appeal were strongly in favour of the architects upon the merits of the case, but did not think it could withdraw the case from a jury, and that consequently there must be a new trial. The case was thereupon retried before Mr. Justice Lawrence and a Special Jury, with the result that a verdict was given for the architects upon the question of negligence, and also upon their counterclaim for fees, a miserable 87*l.* odd.

Leicester Board of Guardians v. Trollope.

Tried before Mr. Justice Channell, January 23, 1911. An infirmity was completed in 1906, and a final certificate given by the architect. In 1908, two years after, it was discovered that the floors were affected with rot, and 2,000*l.* to 3,000*l.* had to be expended in taking them up and relaying. The contract provided for 6 in. of concrete, then 2 in. of fine concrete, and wooden joists on top. It was found that wooden pegs had been driven into the ground upon which the wooden joists were laid, the space beneath being then filled in with concrete, leaving the pegs in. These pegs, it was found, had sucked up moisture from the earth, and so caused the joists and flooring to rot. A clerk of works had been employed, but it was contended by the clients that his duties were defined, in writing, as merely those of an inspector and assistant to the architect. The architect admitted that he had not seen the floor during construction, but that he had trusted to the clerk of works.

Mr. Justice Channell gave judgment against the architect, who, he thought, was not greatly in fault, but at the same time he expressed the opinion that the laying of the floor was not a detail which could justifiably be left to the clerk of works.

It is interesting to note that the Judge expressed the opinion that the clients were in error in supposing that, as two years had elapsed since the date of the final certificate, they were debarred from proceeding against the builder.

The builder finally met the architect fairly in contributing towards the damages and costs. It is, therefore, pleasant to record that the attitude of both architect and builder in meeting the case was such as reflects credit upon them."

The important case of Robins v. Goddard was then dealt with.

Agent or Principal?—Crittall Manufacturing Company v. L.C.C.

"This was an action by a sub-contractor to recover against the clients failing payment by the builder. Iron sashes were supplied to a

school. A clause in the contract entitled the clients to retain the cost of the goods from the builder until he had paid the sub-contractor, but this right was not exercised, the amount being included in a certificate to the builder. The builder gave bills in payment to the sub-contractors, but owing to the builder's failure they were not met. The sub-contractor thereupon brought an action to recover the amount from the clients, and succeeded, Mr. Justice Channell deciding in their favour on these grounds:

- (1) The clients were the real principals, as the contract was to procure something for their benefit which
 - (2) Was to become their property, and
 - (3) As regards the terms of the contract, they were the persons interested, not the builder. The Judge expressed the opinion that when the clients' architect instructed the builders to place the order with the sub-contractors on the terms of their quotation, the quotation having been invited by the architect who was the clients' agent, the architect thereby directed the builders to make the contract for the clients.
- This decision has been received by all sub-contracting firms with natural jubilation. The responsibility it imposes upon the client through the architect is obvious. It appears imperative in future that architects should obtain a written undertaking from the sub-contractor that he will not look to the client or payment.

The Ownership of Drawings.

The law appears to be established by two cases:—*Ebby v. Gowan and Gibbon v. Pease*. The former is an old case in which the building was not carried out, the architect being paid the 2½ per cent. and claiming to retain the drawings. The Court decided against him. In the second case, *Gibbon v. Pease*, the previous case was followed, both in the Divisional Court and the Court of Appeal. The Court of Appeal supported the Judge below. It stands, the retention of the drawings by the architect by special agreement with the client seems the only resource available to us. An interesting paper on the subject was read before the last International Congress of Architects in this country by Mr. H. H. Statham.

The last subject upon which I shall speak is that of "Fees," and I will be brief upon it, dealing with two cases only, which show the view taken by the Courts.

The first case is that of *Tree v. Mitchell*, tried before Mr. Justice Walton in 1909.

The amount awarded to the architect seemed to vary with the opinions expressed by the Judge in awarding it, and I think we shall all agree with his Lordship in one observation made, namely, that it was "a very unfortunate and extremely unsatisfactory case."

The second case, and the last with which I propose troubling you, was that of *Brown v. Meckel & Co.*, tried before Mr. Muir Mackenzie in 1909, who elected to make some observations upon the Institute scale. He said that it had been repeatedly pointed out by the Judges that there was no implied obligation on a client to pay upon the Institute scale, but that an express agreement must be obtained, and that the scale, therefore, could not be considered, except so far as the fact that it was a scale, and had a certain amount of sanction attached to it by the weight of the repute of the persons who prescribed it."

Mr. A. M. Brice

said the relationship of the architect in a contract was twofold. First and foremost, he was the agent of the building owner, mainly on the exercise of ministerial acts, amongst others of which was the giving of interim certificates, and many of the difficulties alluded to by the author arose from the fact that there had been some confusion between the interim and the conclusive certificate. In giving interim certificates the architect was only exercising his ministerial office, and it was not until he gave the conclusive certificate that he acted as an arbitrator or quasi arbitrator in a judicial capacity. Directly he made the final assessment of what was due to the builder, and the final assessment as to the quality of the materials, he exercised the judicial functions which were bestowed upon him not only by the building owner, but by

the builder, who were the consenting parties to the contract. The architect, as an employee, was liable to dismissal by the building owner, and, even if wrongfully dismissed, he could not continue to act in his capacity of architect for the excellent reason that an employee, as he only rendered personal service, could not in law demand specific performance. He could not ask for an injunction against the employment of another architect, and his only claim was for damages for wrongful dismissal. But when they came to the second, and, of course, the more important position which the architect held as quasi arbitrator between the two parties, his position as an agent disappeared. His agency, which could at any moment be revoked by the employer, ceased to be revocable, because the consenting parties to the contract had, in fact, made a submission in the sense of the Arbitration Act, and that was irrevocable. The architect was appointed the arbitrator or judge between them, and neither one party or the other could revoke. Of course, both of them could, for that was the reason why *Robins v. Goddard* had not entirely been put out of court by *Roberts v. Hickman*. He agreed that lawyers might deserve some hard knocks, but would point out that the parties to the quarrel came into Court with the express object of obtaining from specially-trained minds, stored with an enormous number of precedents, what they meant when they said "So and so." He differed entirely from Mr. White in what he said about the liability of the builder ceasing after the usual period of maintenance. If there had been fraud or defective work, the Statute of Limitations did not run from the date of the original work, but from the date on which that fraud might reasonably have been discovered. If a builder, in the temporary absence of the architect, put in bad work and covered it up, that clearly was fraud, and when the defects made themselves patent, then the fraud was discovered for the first time "reasonably," and the Statute of Limitations only then began to run. As to the case of *Findlay v. Roques and Carvell*, it must be remembered that the architect was a professional man, and was always subject to the law's control in so far as he held himself out as being able and willing to carry out certain work. He ventured to submit that advice as to the probable demand in a locality for a certain class of property was not properly an architect's work, and he certainly did not think any client could recover damages against him, *qua* architect, for tendering information as to the financial possibilities of the future. In *Robins v. Goddard* the point was that the certificates given were interim certificates, whereas in the other case mentioned by Mr. Greenop the certificates were conclusive, and therefore the second case could not override *Robins v. Goddard*. As to sub-contractors, if the architect told the sub-contractor he must look to the builder for payment, it was all right, but in the case which had been quoted this was not the case. The sub-contractor simply had a general order given by the architect in his capacity as agent for the building owner, and he was quite entitled to bring an action against the building owner in consequence. At the same time, if a builder chose to carry out instructions for an architect, which he knew perfectly well were beyond the authority of the architect, then he could not bring an action against the building owner.

Mr. G. R. Blanco White said complaint had been made that a building contract was interpreted in the Courts of Justice in the same way and with the same care that other contracts were interpreted, but that complaint was not well founded, because, in addition to the architect and the builder, the building owner, who was a layman, was also concerned. In every one of the cases which had been quoted they had to bear in mind that the Court was asked to say not what the law had decided in previous cases with regard to building, but what was the intention of the parties as laid down in the particular contract which was before it. The question of whether the architect was an arbitrator or an agent must depend on the contract, and in the Institute contract in some clauses the architect was made the agent and in other clauses the arbitrator between

the parties. In Clause 30, regarding the issue of certificates, the architect had to act as an arbitrator, and was to express an opinion independently of anything said to him by the builder. In other clauses, also, the architect acted as arbitrator; as, for instance, in Clause 13, and also in Clause 32, if his name was filled in. In other clauses, however, the architect was acting clearly as the agent for the employer, as in Clause 12, which dealt with variations and extras. He agreed with Mr. Brice that the case of *Roberts v. Hickman* did not reverse *Robins v. Goddard*. The first case dealt with the question of certificates where the architect had to act impartially, and use his judgment and act as arbitrator, whereas the question in *Robins v. Goddard* was whether the intention of the contract was that the only remedy of the building owner should be under Clause 17 for any defects. That was to say whether the only liability of the builder, so far as defects were concerned, should be the putting of the building right in accordance with the maintenance clause, or whether, in addition, the builder was liable for a common law action for doing defective work. *Robins v. Goddard* settled the question that the building owner had his action for defective work in addition to the rights he had under the machinery of Clause 17. But, after all, what the Court had to decide in that case was the meaning of the particular contract, and whether the Court guessed right as to what was meant was a difficult question. What one felt was that, even if the Court guessed wrong, it was not right to put the whole blame on them, and that those members of the Institute who drew up the contract should take some blame. There was no doubt at present ambiguities in the form of contract, and in Clause 12 it was said that extras and improvements did not cover alterations. He should have thought that it was the intention that the architect should be permitted not only to add or cut a room away, but also to alter a room. There were other ambiguities in the clause which he supposed would be settled when some building owner brought an action at great expense to himself. There was no doubt that the present contract needed revision.

The President

said he thought it would be convenient to adjourn the discussion at that stage, and to resume it at the meeting when Mr. Saxon Snell's and Mr. Woodward's papers were read.

This was agreed to by the meeting.

The President announced that the next meeting, to be held in January, was a business meeting, and would be immediately followed by a special general meeting to discuss proposals of the utmost importance respecting the Society of Architects, of which full particulars were about to be sent to all members.

ARCHITECTURAL SOCIETIES.

Architectural Society of Liverpool University.

The annual dinner of the Architectural Society of Liverpool University was held in the Students' Union Club, Bedford-street, last week, when Mr. A. R. Sykes presided. Amongst others present were Sir W. H. Lever, Bart., Mr. Arnold Thornley, Mr. E. Kirkby, Professors Adshead and C. H. Reilly, and Messrs. C. W. Townsend, J. W. Mawson, and L. P. Abercrombie.

The loyal toasts having been honoured, Professor Reilly proposed "Our Guests," and remarked that it was only right at that annual dinner to have with them their benefactor, Sir William Lever. They always felt that Sir William had the qualities that a great architect ought to have—he was a practical man and he was an idealist.

Mr. Arnold Thornley, in replying, congratulated the Society upon the beautiful premises in which they were housed. He saw the School of Architecture and the School of Civic Design not only conferring upon the profession a great benefit, but serving the purpose of educating the public to appreciate architecture to a fuller extent than had hitherto been the case. He hoped that in the years to come they should not have such things occurring as they had lately seen in what he might call the desecration of St. George's Hall

There was no doubt if the public had been better informed as to the rudiments of classical architecture they would not have seen this happening. He thought it was most deplorable, and he hoped that the scheme would now be improved so as to make the best of a bad job. Talking about public improvements, one matter required urgent attention, and that had reference to the pierhead. They would have noticed that there it was proposed to erect a memorial to the late Sir Alfred Jones, and it was rather interesting to note that the design and model had been approved before they knew where they were going to put it. This must have been done thoughtlessly, as, in his opinion, it was quite impossible to successfully provide a suitable monument until they had fixed on a site. Their Society had taken the opportunity of considering the laying-out of the pierhead with a view of the proper placing of monuments, and he hoped that their efforts would result in a successful solution of the problem. What they wanted was a representative body with some knowledge of architecture and some sense of the beautiful to control these matters, and he should like to see Sir William Lever as the chairman of such an authority.

Sir William Lever gave "The School and the Society," and said he took a great interest in both the School and their Society, and he felt they would do grand work in Liverpool, where there was such a wide field for them to cover. In regard to the Sir Alfred Jones statue, and as one of the committee, he took full responsibility for anything that was done. Sites were limited. They thought it right that, having regard to the part Sir Alfred Jones played in shipping and commerce, the monument should be placed near the water's edge, and they had hit upon perhaps the only available site. The problem in Liverpool was to find suitable positions for statues. In the establishment of schools of architecture they were taking a step towards improving England. They wanted cities in which they could walk without having their sense of beauty offended, without feeling that on one side they had wretchedness and poverty, and on the other municipal buildings, banks, and insurance premises. The work lay to their hands as architects.

Messrs. C. W. Townsend and J. W. Mawson responded.

On the initiative of Mr. W. H. Thompson the toast of "The Staff" was honoured, and Professor S. D. Adshead and Mr. L. P. Abercrombie having suitably replied, the function was brought to a close.

The Leeds and Yorkshire Architectural Society: Early Roman Churches.

A general meeting of this Society was held on December 14 at the Leeds Institute, the President, Mr. Sydney D. Kitson, M.A., F.R.I.B.A., in the chair. Mr. A. E. Dixon, F.R.I.B.A., of Birmingham, read an interesting paper on the "Early Roman Churches" to a number of members and Associates. The lecture dealt with the Early Christian churches of between the IIIrd and IXth centuries, also mentioning the chapels, tombs, and catacombs. In dealing with the various features of these buildings the mosaics commanded special attention, being illustrated by a number of excellent slides showing the decorations to the apses of many churches. A remarkable feature in the subjects of these mosaics is their peaceful seriousness; humour and scenes of judgment or retribution are entirely absent. In contrast to this the lecture concluded by a few slides showing grotesque capitals from the neighbourhood of Poitiers, where in all cases grim humour was the predominating subject.

A discussion followed, and Mr. H. S. Chorley, M.A., F.R.I.B.A., proposed a hearty vote of thanks, which was seconded by Mr. A. E. L. Kirk, A.R.I.B.A., and supported by Mr. C. B. Howdill, A.R.I.B.A.

INTERNATIONAL EXHIBITION, ROME, 1911.

Mr. H. Hughes-Stanton has received the official confirmation from the Minister of Public Instruction of Italy that the Italian Government has purchased his large work, "St. Jean, Avignon (exhibited in the Royal Academy, 1909) from the British Section of the International Exhibition at Rome. It will be placed in the Royal Gallery of Modern Art, Florence. Works have been purchased from each of the foreign countries exhibiting.

THE SOCIETY OF ARCHITECTS.

THE second ordinary meeting of the Society of Architects for the session 1911-1912 was held at 28, Bedford-square, W.C., on the 14th inst., the President, Mr. Geo. E. Bond, J.P., in the chair.

The following candidates were declared to be duly elected:—

As Members—

F. W. C. Barker, London	W. H. Johnson, Wigan
W. R. Benwell, London	W. H. Jones, Swansea
A. C. Blackmore, Hull	W. L. Keay, London
A. Bromly, Croydon	H. Leece, Huntingdon
F. R. Catling, London	J. M. Lester, Harrow
E. A. Chilton, Eastbourne	K. Peters, Galway
F. G. Cooke, Eastbourne	J. B. Pickering, Canterbury
G. H. Crickmay, Leigh-on-Sea	C. J. Pictou, Chard
W. G. Davies, Birkenhead	T. Rayson, Oxford
H. O. Ellis, London	W. C. Shall, Llandaff
Annie Hall, London	J. D. Swanston, Kirkcaldy
S. C. Hanson, Southall	V. S. Whitaker, Barnley
R. E. Haymes, Shrewsbury	F. B. Whiting, London
	E. B. Williamson, Ashford

As Students—

J. Gomm, Ealing	A. C. Souby, London
E. E. Keefe, Norwich	B. H. Thomas, Llangadock
B. J. Ryan, London	

Mr. G. A. T. Middleton then read a paper on "Alexandria: Its Place in Architectural History," an abstract of which appeared in our last issue (p. 701).

In the discussion which followed,

Mr. R. G. Lovell, in proposing a vote of thanks to the lecturer, said that the lecturer's deductions with regard to the home of the Corinthian Order seemed to be exceedingly well founded. The evidence of Egyptian occupation was to be traced a good deal further up the Nile than Alexandria, as he remembered making a sketch of an Ionic capital at Luxor.

Mr. H. Freyberg, F.S.I., in seconding the vote of thanks, said he had never had the opportunity of visiting any part of Egypt, but there was one question which arose in his mind as Mr. Middleton proceeded, and that was the question as to what had become of the remainder of the buildings of which vestiges had been found, and which, if existing at the present time, would be remarkable throughout the whole world. The answer to the question, he thought, might be found in the history of places like Venice, where at the conclusion of a successful war the conquerors made their opponents throw in, in addition to the war indemnity, certain shafts of previous marbles, which were carried to the home of the victors.

Mr. H. Slicer and Mr. Robert W. Carden, having spoken,

The President,

in putting the vote of thanks to the meeting, said Mr. Middleton had made a point of the fact that Alexandria, from an architectural point of view, had been neglected, and he entirely agreed with him, but he thought the reason was that Alexandria had other claims to distinction which were overwhelmingly obvious and to a great extent overshadowed any claim it might have to be an architectural centre. Alexandria during the Ptolemaic period developed the exact sciences, and did so much for the establishment and development of what they might call modern civilisation that they were now feeling its effects and were enjoying its results.

A hearty vote of thanks was then accorded to Mr. Middleton, who replied to the discussion, and the proceedings terminated.

THE TOWN PLANNING ACT WHITE PAPER.

THE Memorandum issued by the Local Government Board, dated November 9, 1911, gives information as to the operation of the Housing and Town Planning Act since it was passed on December 3, 1909. The amendments made by Part I. of this Act to the previous Housing Acts have simplified the procedure for dealing with insanitary houses and areas. A striking increase of local activity is the result, representations with respect to 23,792 houses being made during the year 1910-11, as against 6,312 during the year 1908-9.

Information is given below as to a number of local authorities who have taken definite action with a view to the preparation of schemes under the Act, and there is reason to believe that in some cases better methods of developing estates are being adopted by landowners and others without the formalities of town-planning schemes, and that the existence of the powers of the Act has already had a very beneficial influence quite apart from the actual preparation of schemes under it.

In the following eight cases the Board have given authority for the preparation of schemes, viz. :—

Birmingham Corporation.—An area of about 2,320 acres in Quinton, Harborne, and Edgbaston in the city, and in the part of Northfield in the urban district of King's Norton and Northfield added to the city as from November 9, 1911.

Birmingham Corporation.—An area of about 1,442 acres in the Parish of Aston, in the eastern part of the city.

Ruislip-Northwood Urban District Council.—An area of about 5,906 acres in the urban district and in the parish of Rickmansworth (rural) in the rural district of Watford.

North Bromsgrove Urban District Council.—An area of about 554 acres in the urban district.

Rochdale Corporation.—A small area of about 43 acres in the borough.

Chesterfield Corporation.—A small area of about 64 acres in the borough.

Oldbury Urban District Council.—An area of about 1,763 acres in the Warley portion of the urban district.

Bournemouth Corporation.—An area of about 202 acres in the Boscombe East and Southbourne wards of the borough.

In one case, that of an application from the Corporation of Rochester relating to a very small area, the Board were unable to give the authority asked for as the land was for the most part held by the Secretary of State for War, and, being Crown lands, could not be included in a town-planning scheme.

The Board have before them at the present time two applications for authority to prepare schemes, viz. :—

Hanwell Urban District Council.—An area of about 198 acres in the urban district.

Liverpool Corporation.—An area of about 88 acres near the eastern boundary of the city.

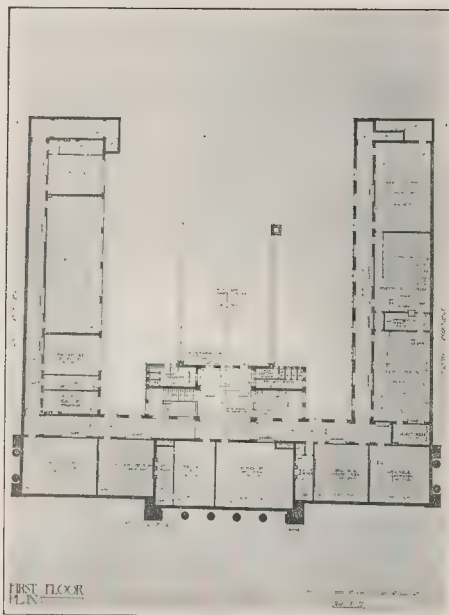
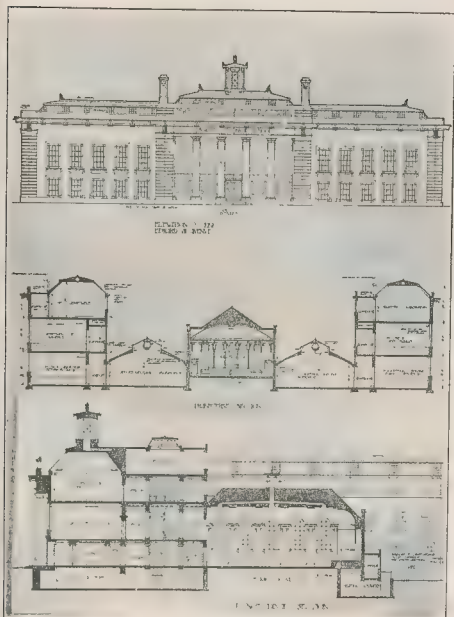
The Board have information showing that the preliminary notices have been given under the regulations by the following eleven local authorities with a view to application being made to the Board for authority to prepare or adopt schemes, viz. :—Barrow-in-Furness, Ellesmere Port and Whitby, Finchley, Huddersfield, Middleton, Nelson, Newcastle-upon-Tyne, Sheffield, Sutton Coldfield, Twickenham, and Willesden.

In twenty-two other cases the information available would seem to show that the consideration of the matter by the local authority has reached a stage practically equivalent to a decision to proceed with a scheme, viz. :—Acton, Barnes, Beckenham, Blackburn, Cleckheaton, Croydon, Greenford, Grimsby, Halifax, Hayes, Kingston-upon-Hull, Malden (The) and Coombe, Merton, Middlesbrough, Portsmouth, Sedgley, Southall-Norwood, Southampton, Stockport, Surbiton, Walthamstow, and Warrington.

In numerous other cases the Board are aware either from correspondence or interviews with their officers that the question of preparing a scheme is under consideration, and the following twenty-eight local authorities may be mentioned in this connexion:—Birkenhead, Bushey, Carshalton, Coventry, Croydon, Enfield, Epom, Esher and the Dittons, Hale, Hendon, Horne Bay, Hessele, Irlam, Leek, Little Crosby, Newport (Mon.), Northwich, Richmond (Surrey), Rotherham, Southgate, Stoke-on-Trent, Stratford, Sutton (Surrey), Tynemouth, Wakefield, Wallend, Wembley, and York.

There can be little doubt that many other authorities are contemplating town-planning schemes, but have not yet found it necessary to communicate with the Board on the subject.

We should have thought that in the case of Rochester it should not have been necessary to go as far as to complete the formal procedure necessary to make a definite application to the Board just to find out that Crown land cannot be included in a scheme. Surely this fact could have been ascertained at an earlier stage in the proceedings, and much useless trouble



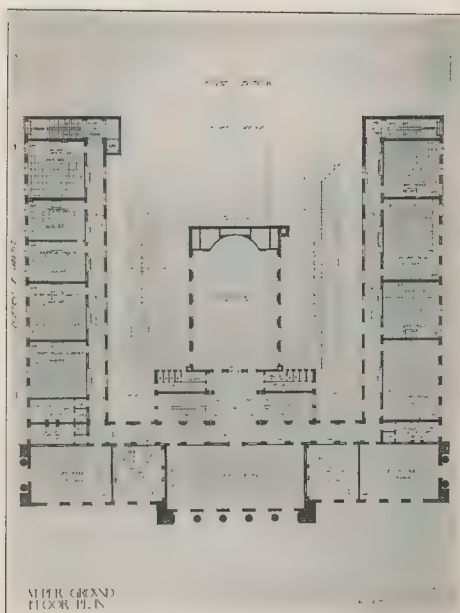
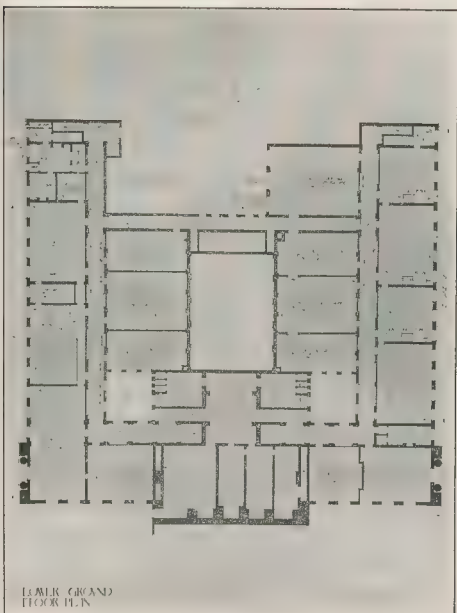
Selected Design : By Messrs. Ivor Jones, A.R.I.B.A., & Percy Thomas (Cardiff).

[nd expense] been avoided. Why the notice served on the owners, presumably the War Office, or at any rate the preliminary Conference, did not disclose this fact is not evident. Possibly a simplification of the procedure might meet such cases, and also stimulate activity in the same way as it was stimulated by the simplification of the procedure of the previous housing Acts.

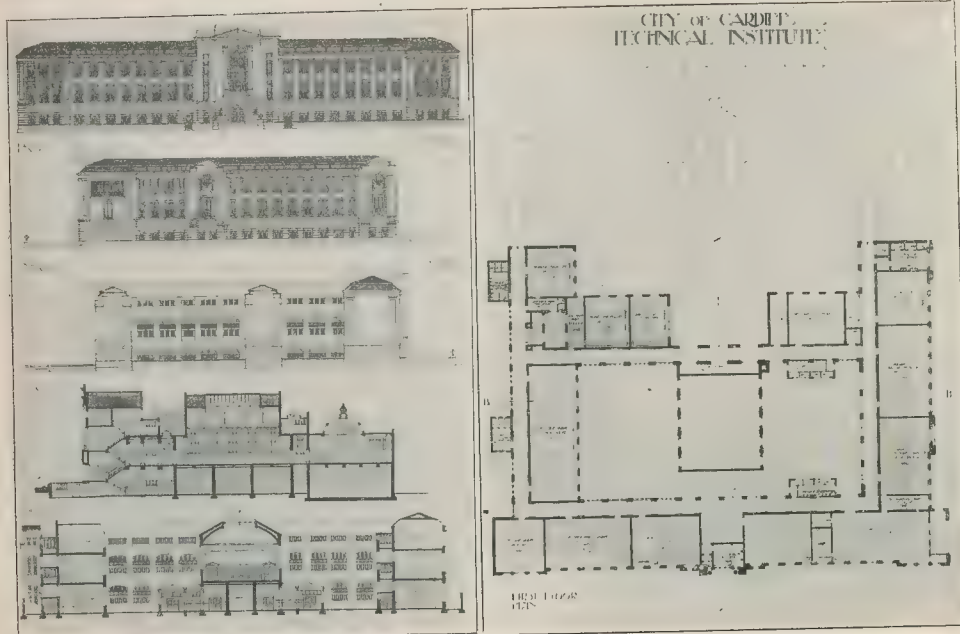
CARDIFF TECHNICAL INSTITUTE COMPETITION.

THE result of this competition was briefly announced in our issue of last week. Mr. James S. Gibson, F.R.I.B.A., was the Assessor, and awarded the first place to Messrs. Ivor Jones, A.R.I.B.A., and Percy Thomas, of Cardiff; Messrs. Cooper & Slater, of Blackburn,

Mr. J. Myrtle Smith, of Chelsea, and Messrs. Spalding & Myers (with Mr. E. G. Theakston), of London, coming second, third, and fourth respectively. It should be a source of some gratification to Cardiff architects that this competition has been secured by a local firm with a design well worthy to rank with the monumental buildings already erected on the Cathays Park. The site was an open one,



Cardiff Technical Institute Competition : Selected Design, by Messrs. Ivor Jones, A.R.I.B.A., & Percy Thomas (Cardiff).



Fourth Premiated Design : By Messrs. Spalding & Myers and Mr. E. G. Theakston (London).

below. The women's technical department is placed above the staircase hall on a second floor.

We might comment that the lavatory accommodation is quite inadequate and requires to be amplified.

The elevations generally are on simple and dignified lines, the projection on the main front formed by the large lecture-room being treated as a colonnade between heavy rusticated piers, with simply treated flanking blocks, of which the side elevations are a repetition. The Mansard roofs with glass in the lower slope and Roman tiles covering the intervening spaces, are effective, but the view of these would be

quite cut off by the bold projecting cornice, except from a considerable distance.

Messrs. Cooper & Slater's design shows an entrance vestibule at the road level, with an inner lobby and staircases up and down, somewhat dissociating the principal floors from one another. The disposal of the departments is very similar to the first premiated scheme, but by no means so carefully worked out. The lighting of the architectural and one of the engineering drawing offices is unsatisfactory, and when the future extension is added the former will be still worse off. The workshops fill the whole of the central areas on the lower floor, and necessitate the lighting of corridors

and lavatories by small clearstory windows, this scheme also rendering the central space under the examination hall useless. On the upper ground floor this hall is centrally placed, with the large lecture-room immediately behind it. The platform of the central hall seems to divide the corridor, which would otherwise complete the circulation of the whole floor in an unfortunate way.

The principal elevation to the main avenue is handled on a more elaborate scale than the first premiated design, and, whilst it has dignity, our impression is that it would be too costly. It can hardly be considered suggestive of the purpose of the building. The return elevation



Cardiff Technical Institute Competition : Fourth Premiated Design, by Messrs. Spalding & Myers and Mr. E. G. Theakston (London).

towards College-road is designed to form a symmetrical façade when the future extension is added.

The design submitted by Mr. J. Myrtle Smith, of Chelsea, receives third place. It is somewhat a matter for surprise that a design showing the workshops under the examination hall and lecture-room (which occupy the same respective positions as in the last scheme) should have received commendation, as the conditions distinctly asked for top-lighted workshops, and common sense would have suggested that the noise of mechanical engineering would hardly conduce to the proper conduct of examinations and lectures. There seems a disproportionate length of corridor. The elevations are not striking, and the treatment of the projecting features on the principal fronts does not grow out of the plan, but is obviously a case of "masking."

The fourth premiated design by Messrs. Spalding & Myers, of London, adopts a treatment somewhat in favour of several of the competitors, by placing the workshops partly under the hall and top-lighting the remainder. This economises space and gets over the difficult question of lighting any rooms or corridors under such a large area, but it is hardly successful in every way. The lecture-room in his design is semicircular, which would probably prove a convenient shape. The authors of this design have, like those of the first one, adopted the idea of putting the corridor of the south block against the outer wall, but the placing of lavatories on this side, although treated in a satisfactory manner externally, is hardly permissible, as this front would be very prominent. The principal elevation is a bold piece of work, but somewhat crowded and lacking in breadth.

Among the schemes which did not receive notice is a striking set (No. 8) which, in the unfortunate absence of names on the drawings, we attribute to the winner of the recent Marylebone Town Hall Competition, with very finely-drawn elevations, which, while ornamental in character, would certainly prove prohibitive in view of the cost limit defined. The plan is somewhat wasteful.

No. 41 has one of the best elevations sent in, attached to an impossible plan. The general standard of planning is not high, and does not show the acquaintance with the requirements of technical institute buildings that might have been looked for.

THE BRITISH MEMORIAL TO THE CENTENARY OF THE ARGENTINE.

The photograph illustrates the new memorial clock-tower presented by the British community of Argentina as their memorial to the commemoration of the Centenary of the Declaration of Independence of the Republic. The foundation-stone was laid on November 26 of last year, and the work is now practically completed. The site selected was that portion of the foreshore of the River Plate between the Paseo de Julio and the docks. In close proximity to this site the Central Argentine Railway will erect a station of fine design in place of their existing sheds. The clock-tower is 240 ft. 8 in. high to the top of the ship, which serves in lieu of a weathercock. It is thus some 20 ft. higher than the western towers of St. Paul's Cathedral, while the centre of the clock itself, whose four faces are each 18 ft. in diameter, is 157 ft. above the ground. This clock is undoubtedly the largest in South America, and is one of the great clocks of the world. Standing as it does in an isolated position, it will be visible for a considerable distance along the Paseo de Julio and over the docks. The British clock-tower is, in fact, the first object to greet the eye of the traveller approaching Buenos Aires by water and the last of the city he sees when leaving.

The style chosen for the monument is founded on the phase of Renaissance architecture existing in England about the year 1580, which is the period of the second—and permanent—foundation under Juan de Garay of the city of Santa Maria de Buenos Aires. The architect, Mr. Ambrose Poynter, F.R.S.B.A. (who won the first prize in a competition open to architects and draughtsmen of British nationality in the Argentine Republic), in selecting this style has sought in his design to refine as far as possible upon the profiles and proportions of the Orders and the detail and ornamentation of general without sacrificing the peculiarities and treatment, which give distinctiveness and

originality to the Elizabethan variety of Renaissance architecture. The materials selected are, naturally, those usually employed for buildings of that period in England—red brick and freestone. The use of real brick and real stone is a novelty in Buenos Aires, as none of the brick produced locally is sufficiently good for external use, and suitable stone is practically non-existent in the vicinity. The buildings in the town are almost without exception faced with stucco work, imitating fine stone and executed with marvellous skill, and the little brickwork to be seen generally turns out upon near examination to be a sham of coloured cement.

It was stipulated, however, by the Committee that in this case British materials should be preferably employed. The tower itself is square in form, and supports an octagonal drum and upola, the latter covered with copper and surmounted by a wrought vane carrying a gilded ship, a reproduction of a three-masted man-of-war of the year 1580. This ship has a double significance, not only as typifying Britain's sea-borne commerce, but also as forming part of the coat-of-arms of the city of Buenos Aires.

The open octagonal turret surmounting the tower is of stone with eight granite columns, and contains the hour bell—6 ft. in diameter—and the four bells for the quarters, which will strike the Westminster chimes. In the chamber below is a carillon chime, and beneath this is the clock itself, driven by electricity.

Below the clock level is the great cornice of the tower, with its wrought-iron railing, forming a gallery, which will serve as a point from which, at a height of 137 ft. above the ground, visitors may obtain a good view of the docks and town.

This gallery is reached by an electric lift starting from a waiting hall at the entrance level. This hall, forming the base of the tower, is raised above the level of the surrounding plaza, and is approached from a balustraded terrace with a flight of steps (lighted by monumental candelabra).

These are placed in the middle of each face, and there is a fountain at each corner. This ground story and the one above, to a total height of 46 ft., are faced with stone. Over this rises the brick shaft for a further 80 ft. to the underside of the main cornice. The recess facing the Paseo de Julio serves as an entrance, and has a great door of English oak, with a carved stone panel in the arch head over it,

with the inscription:—"Los Residentes Británicos al gran pueblo Argentino salud. 25 de Mayo, 1910." (The British residents to the great Argentine people, greeting, 25th of May, 1910.)

The cost of the tower is estimated at some 25,000*l.*, the larger part of which has been contributed by the banks, railway companies, and financial and business houses connected with the River Plate. The British Centenary Committee is under the Chairmanship of H.M. Minister, Mr. Walter Townley; he and the Hon. Treasurer, Mr. H. H. Long, and the Hon. Secretary, Mr. G. Lloyd Davies, are largely responsible for the success of the movement.

THE WESTMINSTER TOTHILL.

By MONTAGU SHARPE, D.L., CHAIRMAN OF MIDDLESEX QUARTER SESSIONS.

Nor long ago I was asked, "Where did the Tothill formerly stand in Westminster?" and, after much consideration, I gave the following reply, which may perhaps interest the readers of the *Builder*:

A tothill is described as "an elevation from which a look-out could be kept over the surrounding country." It is therefore evident that, in ancient times, before the land at Westminster was covered with buildings, a view could be obtained from the top of even a slight elevation raised upon the flat and marshy delta formed by the Thames and the two arms of the Tybourne, one of which flowed past the Abbey Church and the other by Vauxhall Bridge-road; also that Tothill-street, Tothill Church, and Tothill-fields, situated within this delta, must have been so named from an adjacent "tothill."

Tothill-street leads from the west door of the Abbey into Broad-street, and, after crossing it, the line of route is now continued by York-street, formerly known as Petty France. Near by stood Tothill Church, and from Norden's map dated 1596 "the way to Tothill-fields" lay to the south, down what is now called Broad-street. These fields, says Besant, "were to Westminster much as Smithfield and Moorfields were to the City of London."

Now it appears that the Westminster Tothill was an artificial mound of earth about the size of a haystack, and that it stood near the site of Caxton Hall, where the District Railway now runs. For this statement the following reasons are given:—

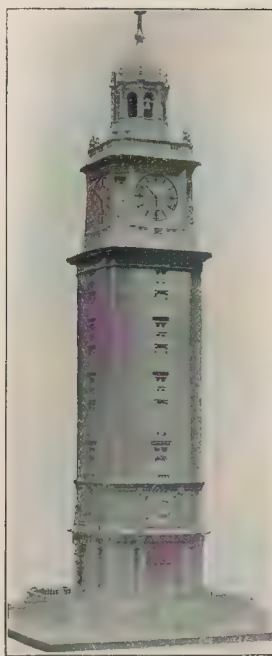
Here, in medieval times, was standing a mound known as St. Hermit's Hill, for, in Stowe's "Survey of London and Westminster," 1735, V. 636, it is stated that:—

"From the entry into Tothill-fields the street is called Petty France, in which, and upon St. Hermit's Hill on the south side thereof, Cornelius Van Dun (a Frabranter born, Yeoman of the Guard to King Henry VIII., Edward VI., Mary and Elizabeth) built twenty houses for poor women to dwell rent free, and near hereto was a Chapel of Mary Magdalen, now wholly ruined."

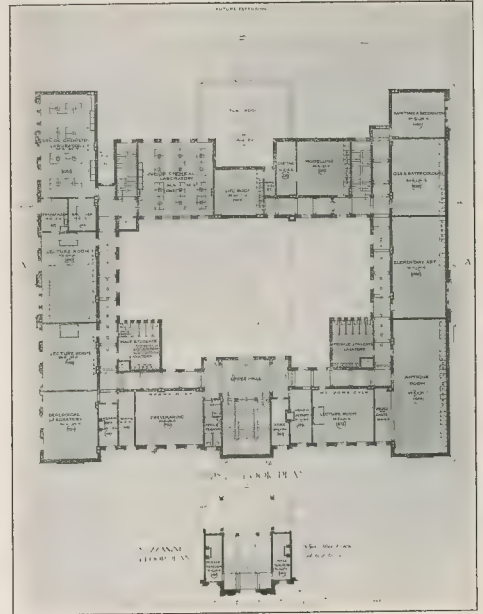
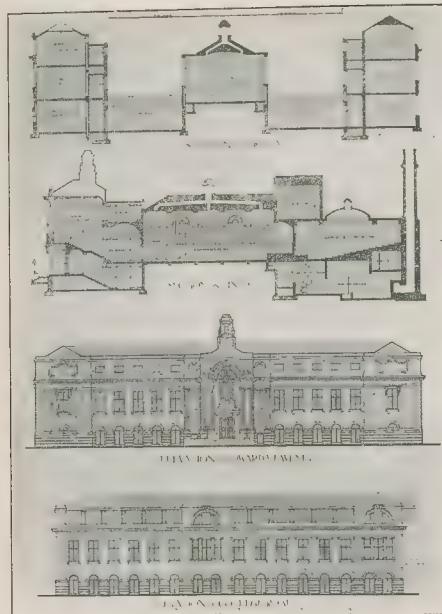
At the present time a variation from the name of this hill is to be found close by in a *cul de sac*, called St. Ermin's-hill, which leads from the western side of the Broadway to the east wall of St. Ermin's Hotel, though it formerly continued into Caxton-street.

Small artificial mounds of earth dating from ancient times and bearing curious names are to be found in many of the districts of Britain settled by the Romans, and some even remain in the ever-changing neighbourhood of London. One—erroneously called "Boadicea's Tumulus"—is standing near Hampstead Heath; another, planted with cedars, is in Syon Park, and can be seen from the Thames; and a third mound is to be found at Slough, known as "Salt Hill," and, by Eton boys, also as "Ad Montem." At Teddington in 1800 a similar mound was standing not far from the gate to the avenue of Bushey Park, marked on Ptolemy's 2-in. survey as "Barrow Hill," and described by Lysons as a tumulus of considerable size. He states that the earliest form of the name of Teddington was "Totyngton," and which doubtless originated from that tumulus or tothill.

Those readers of the *Builder* who have made a practical study of the geometrical system used in Britain by the Roman Agrimensores when surveying a district or pagus for settlement, are aware that these mounds were called "botontini," and, with stones, roads, oak posts, etc., were used respectively to mark the outer boundary line and the inner divisions of lands selected for agricultural development by rural



Clock-Tower, Buenos Aires.

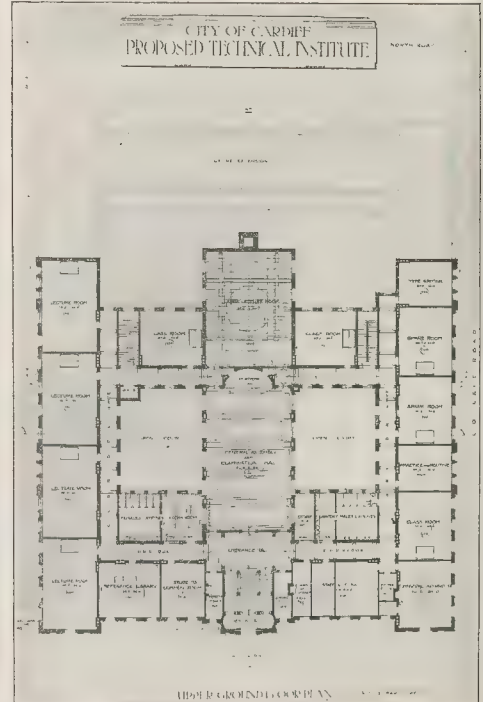
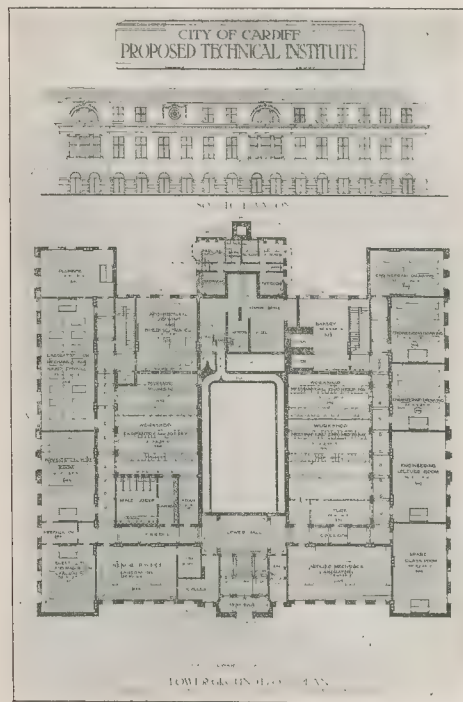


Second Premiated Design : By Messrs. Cooper & Slater (Blackburn).

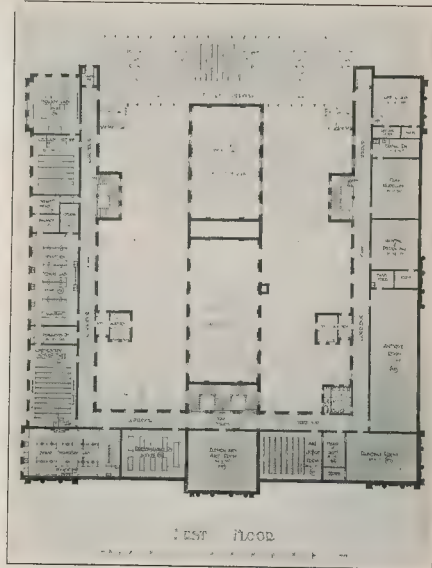
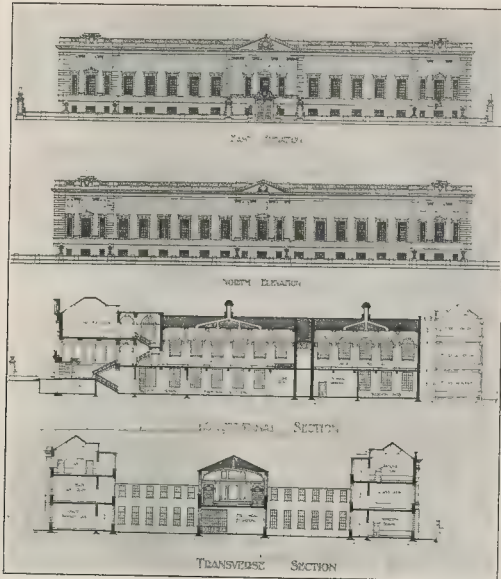
having road frontages on three sides, a proviso, however, being that future extension on the west side should be considered. The sixty-one designs have been publicly exhibited at the City Hall, Cardiff, and are on view until Friday evening, the 22nd inst.

If it be not a radical error of plan to place the examination hall and offices on a floor by themselves, thereby isolating them from the working parts of the building, there is no question that Mr. Gibson has given the first position to a scheme which can have afforded

him little trouble in selection. The drawings are admirable examples of what competition designs should be, and show clearly and concisely the details of arrangement. The keynote of Messrs. Jones & Thomas's scheme, and doubtless the point upon which it scored heavily



Cardiff Technical Institute Competition : Second Premiated Design, by Messrs. Cooper & Slater (Blackburn).



Third Premiated Design By Mr. J. Myrtle Smith (London).

over nearly all other competitors, was the placing of the entrance vestibule and the examination hall on a mezzanine floor practically at the roadway level, with internal staircases leading to the upper and lower ground floors respectively. On one side of the entrance is placed the principal's and committee room, and on the other the staff offices and porter's room. There is the objection to this general arrangement that the principal's room should be in direct communication with the main floor as stipulated, and not in such an isolated position. Also the examination hall has rather the appearance of a concert hall with retiring-rooms at the far end, and there is no secondary means of access except across the

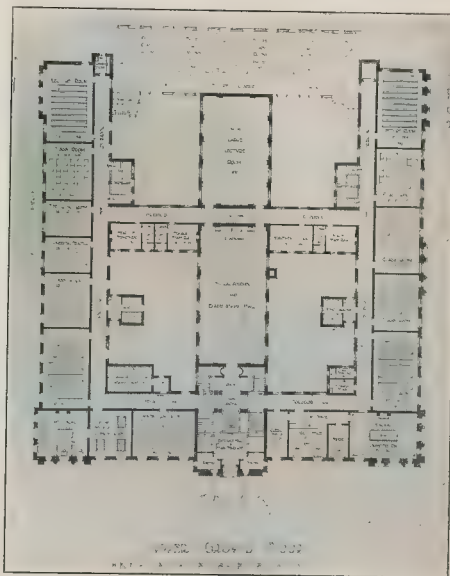
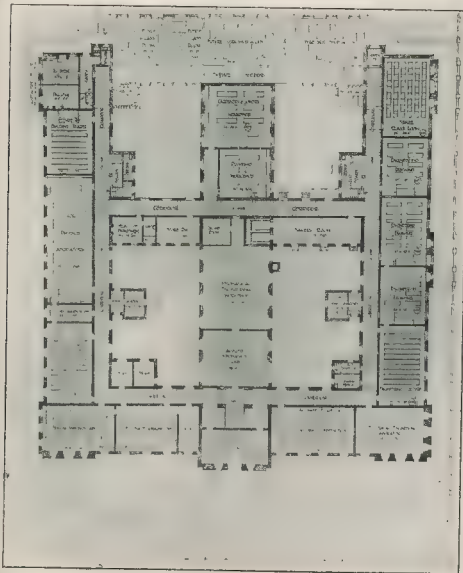
central area. These criticisms, however, by no means detract from the ingenuity shown in overcoming the difficulty of access to two floors of practically equal importance, one below and one much above the road level.

The lower floor divides into two sections, the physics department on the left and the engineering and artisans' rooms to the right. The stipulated sizes of the various rooms have been somewhat freely interpreted with the commendable object of getting the division walls of the upper floor over the lower ones. It might be mentioned that communication between the two sides of the building on this lower floor is rendered awkward by the necessity

for mounting and descending the stairs to cross the entrance hall.

On the upper ground floor a spacious landing is shown, with the large lecture hall centrally situated and forming a dominating feature both on plan and in elevation. The placing of this room is perhaps the most admirable feature of this scheme. The class and lecture rooms on this floor are well distributed, and the subsidiary staircases come happily for both present and future service.

To obviate elevational difficulties and overcome the disadvantage of having placed the art rooms on the south side of the top floor, the corridor serving the art section is put against the outer wall instead of over the corridor



Cardiff Technical Institute Competition: Third Premiated Design, by Mr. J. Myrtle Smith (London).

communities. The countryside was divided first into large square areas equal to 810 acres by parallel lines distant 9 furlongs apart, and then, in suitable places, it was parcelled out into small farms and holdings, which also enjoyed common rights in adjacent heaths and woods.

In London two of these marks remain—viz. the said bototinus near Hampstead Heath, and London Stone, by Cannon-street Station, while the positions of others are known, e.g., Stone Cross, near Somerset House, and Oswulf's Stone, by the Marble Arch, etc., though the last-named appears to have belonged to another surveyed district.

The Hampstead bototinus is thus described by Mr. C. H. Read, F.S.A., in *Middlesex, Herts, N. & Q. I. 4*. "The barrow is a circular mound of about 8 ft. in diameter and 11 ft. high. On the north and south is a level stretch for about 20 ft. on either side bounded by a ditch." Like a true bototinus it contained charcoal, for, on a trench being driven through the centre "considerable traces of charcoal were met with at all depths, and finally, about the centre a hole full of charcoal was found." It had been erected by Roman surveyors upon the border of a district to indicate its boundary line, which ran just outside the mound. "*Monticellus plantivimus de terra, quos bototinus appellavimus et intra ipsos carbonis et cinis et testa tusa cooperavimus*," *Gromatici Veteres*, 308. Again, St. Augustine, in *De Civitate*, xxi., 4, writes: "*Quid in carbonibus—at eos sustinere soleant qua limites figunt ad convincendum litigatorem*."

Now, taking this bototinus and London Stone as the apexes of opposite rectangles of a parallelogram, the two major lines will be found to be twice 9 furlongs apart, and the line from the bototinus running S.E. will, if produced to the Thames, pass to the west of Caxton Hall, crossing Victoria-street by the Army and Navy Stores. If to the east of this boundary line another parallel to it be drawn 9 furlongs distant, the southern end of this latter line will pass by Stone cross, and the third, as above stated, is identified by London Stone. The fifth parallel appears to have been indicated by a mark, of which the only name survives in "Markfield," on the south of Tottenham, while the sixth and eastern boundary line touched the bank of the River Lea by the Roman crossing at Old Ford, though the surveyors most probably placed their first line here and worked westwards.

It is not necessary to refer to the decumanal, or cross lines which completed the division of the land into square areas, but if the true positions of the following mark stones were known, viz., Hergotestane (Haggerston); Hocestone (Hoxton); and Lillstone (Lisson Grove), all of which gave names to Domesday Manors, also those of Dalston, Whittington's Stone, and the stone which stood in Goswell-road, they would show, judging by results from other districts, their connexion with the internal divisions of the old Roman pegasus surrounding the City of London.

It may be therefore said that the ancient "Tothill," or "Hermit's Hill," at Westminster, was a Roman boundary mark erected by the State Surveyors probably in the early part of the IInd century A.D., on a site close to the north-west corner of Caxton Hall, and that it remained in existence until the middle of the XVth century.

Similar and further evidence of this ancient geometrical survey is to be obtained further afield in Middlesex, as well as in other Romanised parts of Britain, where the surface of the land has undergone but little change. There the rural parish churches also afford assistance, for many stand upon the sites of former Roman Compita, or chapels, erected to the Lares Compitales near the village crossways, the routes of which followed the lines of the State survey. I have dealt with this further evidence of the survey in a paper on "Parish Churches on the Sites of Romano-British Chapels."

GENERAL NEWS.

Victoria and Albert Museum.

Important examples of old English furniture have been acquired recently by the Victoria and Albert Museum. To the collection of English Gothic woodwork has been added a portion of a rood-screen of oak, still bearing traces of its original colour. It dates from the late XIVth or early XVth century, and the western front of the screen, of which this portion formed the eastern, is still *in situ* in Tibbrook Church, Bedfordshire.

Among other objects acquired are four finely-carved bedposts of the time of Henry VIII.; a writing desk elaborately inlaid with architectural designs of the type commonly known as "Nonesuch," from their resemblance to the façade of the palace of that name built by Henry VIII.; a Cromwellian armchair; several Charles II. chairs; and a chest of drawers, with cabinet above, dated 1688.

Coronation Honours, Indian Empire.

The following appointments and promotions have been made upon the occasion of the Durbar at Delhi:—Order of the Star of India: C.S.I.—C. E. V. Goumont, Public Works Department, Chief Engineer and Secretary, Agra and Oudh, for Buildings, Roads, etc.; G. G. White, Chief Engineer and Secretary, P.W.D. Burma; F. B. Bryant, Inspector-General of Forests; Colonel T. F. B. Renny-Tailyour, R.E., Superintendent of Surveys, Southern Circle; and Major A. C. de L. J. de Lotbinière, C.I.E., R.E., P.W.D., State Engineer, Kashmir. Order of the Indian Empire: C.I.E.—H. Murray, Imperial Forest Service (retired), lately Senior Conservator of Forests, Bombay; M. Visvesvaraya, P.W.D. (retired), Chief Engineer, Mysore; and C. A. Smith, Chief Engineer and Secretary, Madras, P.W.D., M.V.O. (Fourth Class)—T. R. J. Ward, C.I.E., A.M.Inst.C.E., P.W.D., Superintending Engineer, Western Jumna Canal Circle, Punjab; Major S. D. Crookshank, R.E., P.W.D., Agra and Oudh, Superintendent of Works, Delhi Coronation Durbar; and R. B. J. Ram, C.I.E., P.W.D. Punjab (retired). Kaiser-I-Hind Medal for Public Service in India (First Class)—E. G. Barton, B.A., B.E., M.Inst.C.E., District Engineer, Darbhanga, Bengal; and J. F. Brunton, M.Inst.C.E., M.Inst.M.E., Chief Officer and Chief Engineer, Karachi Municipality.

Westminster Cathedral.

An account of the recent works carried out upon the fabric will be found in the *Catholic Directory* for 1912. The completion is announced of the marble decoration in the lower portion of the Sanctuary, together with the baldacchino and the arcades of the organ galleries, and in the Chapels of the Blessed Sacrament, Our Lady, the Holy Souls, SS. Gregory and Augustine, the Sacred Heart, and St. Thomas (Cardinal Vaughan's Chantry). The expenditure, inclusively of payments for the Hall and Cloisters, amounted, in last October, to 262,073*l.* 15*s.* 11*d.*

The Dering Sale.

At the dispersal by auction of the late Mr. G. E. Dering's effects at Lockleys, near Welwyn, on December 12, 13, and 15, Monti's marble composition, "The Sleep of Sorrow and the Dream of Joy," which was in the International Exhibition, 1862, was bought for 250 guineas, and P. Magni's "Reading Girl" for 150 guineas. The furniture included an XVIIIth-century sedan-chair, 24*l.*, and a Hepplewhite mahogany sideboard inlaid with black stringing on fluted taper legs, 27*l.*

Bessemer Memorial Laboratory.

At the annual dinner of the Institution of Mining and Metallurgy, held on December 15 under the presidency of Mr. H. Livingstone Sulman, the toast of the Institution was proposed by Sir Alfred Keogh, who announced that the Bessemer Memorial Committee had resolved to transfer to the Royal School of Mines the laboratory which they had presented to the Imperial College of Science and Technology.

Statue of Lord Minto.

The equestrian statue of the Earl of Minto to commemorate his Viceroyalty of India will be sculptured by Sir William Goscombe John, R.A.

Tyndale Memorial, Belgium.

A monument of Tyndale, executed by M. Rombaut, will be shortly set up at Vilvorde, near Brussels, where Tyndale was imprisoned and condemned to the stake.

Cranner Memorial, Cambridge.

Mr. A. Bruce-Joy has been appointed as sculptor of the Archbishop Cranner Memorial for Jesus College, Cambridge.

Pedlar's Acre, Lambeth.

Mr. Justice Neville has decided in favour of the Lambeth Borough Council their petition for the payment to them of the income of a sum of about 82,000*l.*, the purchase price of the Pedlar's Acre estate, by the London

County Council, as parcel of the site of the new County Hall on Thames-side. The Rector and Churchwardens of St. Mary, Lambeth, contended that the estate in part should be devoted to ecclesiastical purposes. We may here mention that the estate consists of 1 acre 17 poles, at "Church Hopes," in the osier beds of Narrow-wall (since Belvedere road), Lambeth Marshes, near Westminster Bridge foot. It was, as is generally believed, given to the parish in the XVth century by the chapman, "Dog Smith," who is commemorated by the stained-glass window, representing a pedlar, with his pack and dog, in the middle aisle of the parish church. The land was, it seems, not called "Pedlar's Acre" until 1690. There is record that in 1504 it yielded 2*s.* 8*d.* per annum; when the London County Council acquired the property the Borough Council derived from it 1,800*l.* yearly, which they expended upon reduction of the rates. An Act was passed in 1826 to determine conflicts of interest and opinions that had arisen as the value of the estate increased. That Statute (7 Geo. IV., c. 46) vested the charity in trustees for application in aid of the parish rates.

Messrs. Sprague's Diary.

The forty-third annual edition of the well-known diary which is issued by Messrs. Sprague & Co., Ltd., of East Harding-street, Fetter-lane, E.C., contains lists of officers and fixtures of the R.I.B.A., the Architectural Association, and other institutions connected with the profession, in addition to the information usually found in a diary, and the tables and calculations which make this publication so useful to members of the profession and others. The firm also issue a pocket-book, which, like the diary, is conveniently arranged and nicely got up.

"Whitaker's Almanack."

Whitaker's Almanack for 1912 (London: 12, Warwick-lane, Paternoster-row) is the forty-fourth issue of an indispensable work of reference, which for accuracy and usefulness is comparable with the *Post Office London Directory*. The first number of the *Almanack* was published on December 10, 1868, and contained 562 pages, with an Index of 2,000 references. The present volume contains 856 pages, with an Index of 7,000 references. The first number contained particulars of Great Britain; "with some reference to other countries," while the present issue deals with "all the nations of the world, with particular reference to the British Empire and the United States." Included in the principal new articles are the following:—Science and Invention, Labour Unrest in World, Trade Union Statistics, Public and Private Wealth, Imperial Telegraphy, etc. The miscellaneous statistics added include:—Trade Statistics, Wages and Employment, Finances of Local Authorities, etc. In fact, the *Almanack* covers enormous ground, and it deserves the position it has attained as a popular and reliable work of reference. There are two editions: Paper covered (536 pages), 1*s.*, and half-bound (856 pages), 6*s.* 6*d.*

CORRESPONDENCE.

The Policy of the R.I.B.A.

SIR,—I have read with great interest the two letters appearing in your last issue, the one dealing with "National Insurance," by Mr. Chas. Heathcote, the other re "The R.I.B.A. and Its Associates," by Mr. Horace T. Bonner. These letters, although dealing with different matters, may be regarded as synonymous, for each points out, in no uncertain manner, either the incapability or the indifference of the Council of the R.I.B.A. to attend to the national or individual welfare of its members. Within the last few years Government laws have been passed which are seriously detrimental to the profession, yet we hardly have so much as a squeak from the Royal Institute. And what is the birthright of those hopeful enthusiasts who after years of laborious study are eventually born into the family of "Associates"? They are allowed to pay two guineas a year into the funds of the Royal Institute, half-a-guinea a year to one of the allied provincial societies which may be in their district and which they are expected to join. They are bound and tied down by rules and regulations, and have to pay due regard to professional etiquette, all of which become a source of annoyance and

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. White, Chairman, presiding.

LOANS.—The Finance Committee recommended and it was agreed to make the following loans to various borough councils:—Islington, 2,400*l.* for electricity undertaking; Wandsworth, 4,400*l.* for street improvements; St. Pancras, 988*l.* for altering gradient of roadway; Poplar, 2,965*l.* for electricity undertaking.

NEW SCHOOLS.—It is proposed to erect a new school on a site in Hortensia-road, Chelsea, to provide accommodation for 200 girls; and also a new school on the Ocean-street site, Stepney, providing accommodation for 800 children.

HEATING WORK.—Additional heating work is to be carried out at the Hoxton House school, at a cost of about 133*l.* 13*s.* 3*d.*

THEATRES, &c.—The following drawings have been approved by the Theatres and Music Halls Committee:—Empire Theatre of Varieties, Leicester-square—alterations to property-room; 538 and 540, Kingsland-road—heating and ventilating arrangements; Shaftesbury-avenue (proposed new theatre)—heating and ventilating arrangements. Plans have also been approved for the erection of a cinematograph hall on a site in Mitcham-road, Tooting.

WHITECHAPEL FIRE-STATION.—Owing to the unsatisfactory accommodation for the men at this fire-station, considerable improvements are to be carried out at a cost of 185*l.*, including alterations to the electric light installation.

REPAIRS TO BANDSTANDS.—Concave ceiling

ings are to be provided and general repairs carried out at the bandstands in Brockwell and Clissold Parks at an estimated cost of 400*l.*

CONVENIENCES, KENNINGTON.—New public conveniences are to be constructed on the triangular detached portion of Kennington Park at the junction of Kennington Park-road with Brixton-road.

KING EDWARD VII. MEMORIAL.—In a joint report of the General Purposes, Improvements, and Parks and Open Spaces Committees, it was recommended that in the opinion of the Council the formation of a park or open space at Shadwell would afford a fitting memorial in East London to the late King, and that an amount of 14,000*l.* for the acquisition of the site for the purposes of a public park be approved; also that, subject to the King Edward VII. Memorial Committee acquiring the Shadwell Market estate and laying out the estate as a public park, the Council do undertake the maintenance of the park for the use of the public. This recommendation was agreed to without discussion.

ST. PAUL'S BRIDGE.—The joint report of the Highways Committee and Improvements Committee contained copies of the correspondence which had passed between the Council and the City Corporation with reference to this bridge and the construction of trams in connexion therewith.

COMPETITION NEWS.

Prestatyn, North Wales.

A competition has been instituted to secure a town plan of the estate of Lord Aberconway and the Trustees of the Prestatyn Estate. The premiums offered are 50*l.*, 30*l.*, and 20*l.*. Mr. H. V. Lancaster, F.R.I.B.A., is the assessor. It is desired to develop the estate as a residential seaside town, but without the usual type of sea front or parade.

Forest-fach, Parish Hall.

The design of Mr. H. A. Ellis, of Swansea, has been selected in this competition. The cost of the building will be about 1,200*l.*

Plans for School Buildings, Roumania.

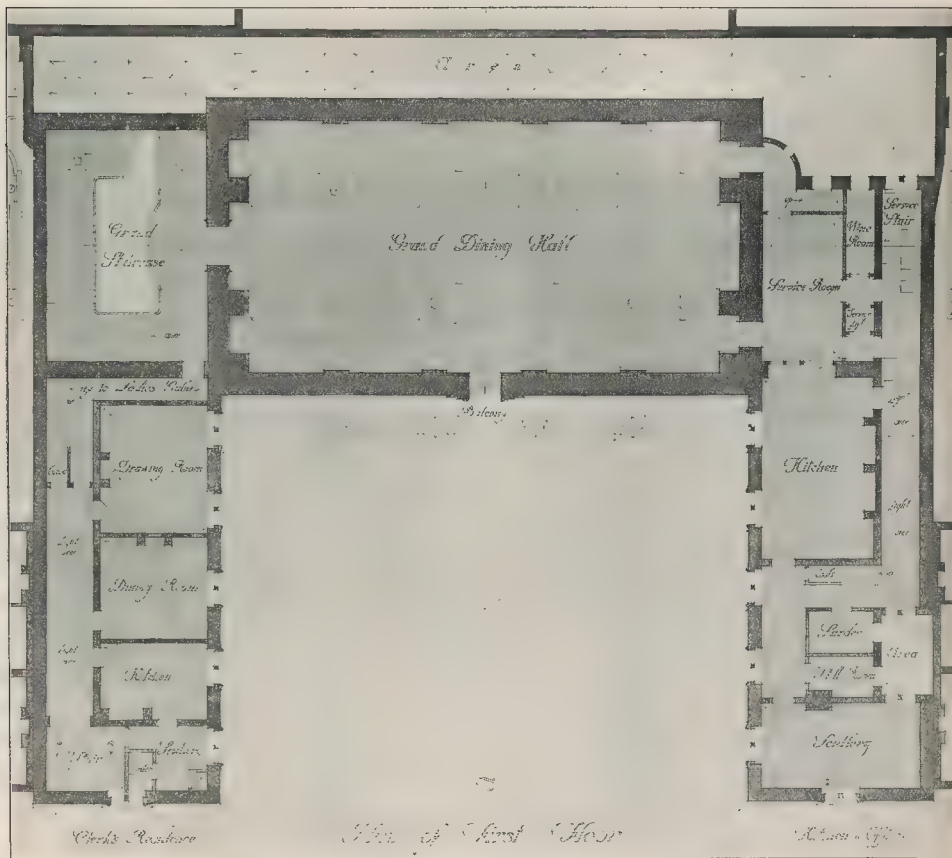
The "Curier Financiar" (Bucharest) of December 3 announces a competition of plans and specifications for the construction of a training college at Buzau, the cost of which must not exceed 400,000 frs. (16,000*l.*). The following prizes will be awarded for the plans:—First prize, 5,000 frs. (200*l.*); second prize, 1,000 frs. (40*l.*); third prize, 500 frs. (20*l.*). Plans and estimates must be deposited at the "Ministère des Cultes et de l'Instruction Publique," Bucharest, on January 28.

ART EXHIBITIONS.

Mr. Cayley-Robinson's water-colours for "The Blue Bird" will be on view in the Leicester Galleries for a few weeks beyond Christmas. Early in the New Year an exhibition will be opened in the same galleries of landscapes in oil and water-colour by Sir Alfred East, A.R.A.

BOOK RECEIVED.

REFRIGERATION, COLD STORAGE, AND ICE-MAKING. By A. J. Wallis-Tyler, C.E. (London: Crosby Lockwood & Son. 10*s.* 6*d.* net.)



R.A. Schools: Design awarded the Gold Medal, by Mr. Alan Binning.

EDITORIAL SUMMARY.

"The Decoration of Chelsea Town Hall" is the title of the leading article this week.

A second article, on "The East Kent Coal-field," appears on p. 732.

In "Notes" columns (p. 732) will be found some observations on: "The Infirmary Site, Manchester"; "The Late M. Daumet"; "The Responsibilities of Architects"; "St. Paul's Bridge and Party Politics"; "The Aldwych Site."

A meeting of the Royal Institute of British Architects was held on Monday, when papers were read on: "The Newer Responsibilities of Architects," by Mr. W. Henry White and Mr. E. Greenop (p. 733).

Brief reports of the following architectural societies appear on p. 735: "The Leeds and Yorkshire Architectural Society"; "Architectural Society of Liverpool University."

A meeting of the Society of Architects was held on the 14th inst., when a paper was read by Mr. G. A. T. Middleton, an abstract of which appeared in our last issue. Some notes of the discussion which followed are given this week, on p. 736.

A short notice of the Town Planning Act White Paper issued by the Local Government Board appears on p. 736.

An article on the Carliff Technical Institute's Competition is given on p. 737. Illustrations of the premiated designs are given in connexion with it.

The British Memorial to the Centenary of the Argentine is described and illustrated on p. 741.

An article on "The Westminster Tothill," by Mr. Montagu Sharpe, D.L., Chairman of Middlesex Quarter Sessions, appears on pp. 741-742.

In our Correspondence columns (p. 742) will be found letters on: "A Correction"; "The Policy of the R.I.B.A."; "Use of the Order"; "Architectural Assistants, Office of Works."

Our Monthly Historical Review, illustrated (p. 747), includes: "Some Worcestershire Churches"; "Historical Facts and Jacobean Architecture"; and Notes.

The Building Trade Section (p. 754) includes: "The London Chamber of Commerce and Labour Unrest"; "Building Act Reform"; "Suggested Standardisation of Copper Tubes"; "Government Contracts"; "London Master Builders' Association"; "The Plumbers' Company."

In Law Reports (p. 758) are short reports of the following: "The Euston-road Building Line"; "Action by Contractors on District Surveyor's Certificate"; "Dispute over Reconstruction Work."

MEETING.

FRIDAY, DECEMBER 22.

Junior Institution of Engineers.—Visit to the factory of Messrs. Otto Monsted, Ltd., margarine manufacturers, at Southall. 3 p.m.

ILLUSTRATIONS.

Royal Academy Schools.



R. ALAN BINNING'S design for "The Hall of a City Company" was awarded the Gold Medal and Travelling Studentship (2004.), and

Mr. Bucknell's was among the most interesting of the other competitive drawings. We referred to the work of the Schools generally in our issue of last week, and in future issues we shall illustrate some of the other designs sent in for the Gold Medal and smaller prizes.

Mr. Binning is in the office of Mr. Leonard Stokes, P.R.I.B.A. It will be remembered that in 1907 he won the second prize for a set of architectural drawings, and the first prize for a set of drawings of an architectural design ("Monument in a Public Park"); and in 1908 he took the Silver Medal for an architectural design with coloured decoration ("A Domed Chapel"). Mr. Binning therefore finishes his student career with appropriate honours, and we wish him success in the future.

Mr. Bucknell is in the office of Messrs. Lanchester & Rickards. Last year he won the 25l. prize for a design in architecture.



R.A. Schools: Design awarded the Gold Medal, by Mr. Alan Binning.

form insurmountable barriers—especially to the provincial architect, who has to compete in these hard times with land agents, valuers, speculative builders, clerks, and other incompetent men who work for reduced fees and trade on the ignorant public. To have A.R.I.B.A. after your name and be a fully-qualified person does not daunt the unqualified or officious local sanitary, nuisance, or building inspector, who comes and orders you to do this, that or the other, and however ridiculous this order may be, it must be complied with, or you are threatened with a law suit. Even if you go to law and get the better of the argument, you worry your client by delaying his work and are put to infinite personal trouble and inconvenience. And where does the R.I.B.A. come in? What practical help or support do you get from this wealthy society of which you are a member? This is a question which will never be answered with credit to the R.I.B.A. until some drastic reform is introduced. The pioneers of architecture have built for themselves an Institute with a high-sounding name, but the plan is not practical and the construction is rotten. Let us have it remodelled, and let us have an Institute which will be respected by public opinion and interfering inspectors, and which will carry some weight in a court of law, and in the framing of that law, or what is the good of an Institute at all? R. E. HASTWELL, A.R.I.B.A.

SIR, I beg to inform you that I have given the Secretary of the R.I.B.A. the following notice of motion in accordance with By-law 56, viz.:

"That it be an instruction to the Council that in any future or amended Charter or by-laws under such future or amended Charter that an equal number of Fellows and Associates be elected to such Council exclusive of the President, four Vice-Presidents, and Honorary Secretary or Secretaries, and that only one list of candidates eligible for election to such Council shall be issued at one date prior to such election containing the names, residences, and qualifications of all candidates nominated for election to such Council."

This motion will come before the business meeting at the Institute on Monday, January 8, at eight o'clock p.m., when I trust the Associates will rally round to support it.

HORACE T. BONNER, A.R.I.B.A.

SIR,—It is gratifying to see from the letters in your valuable paper that the Associate members of the Institute are at last waking up, and I heartily welcome the motion which Mr. Bonner proposes to bring forward at the business meeting to be held on January 8, 1912.

With regard to the treatment of the Associates at the annual general meeting on May 1 last, and to the President's reference in his opening address on November 6 last to the further revision of the Royal Charter and By-laws, in order to carry out the Council's proposed amalgamation with the Society of Architects, I suggest that the Associates not only demand equal representation on the Council to that of the Fellows, but further, that every effort be made to obtain the right for Associate members to vote on any proposed alteration or amendment of the By-laws.

I hope that Mr. Bonner's appeal for a large attendance on the 8th proximo will be responded to by every Associate who can possibly be present. ASSOCIATE R.I.B.A.

SIR,—I read with much interest the various letters that have appeared on the subject of the treatment of the Associate class by the R.I.B.A., and the creation of what Mr. Bonner terms the "no class" Licentiate, with their Fellowship chances by the "back door."

I wrote several letters about this question some time ago, but they did not seem to touch my fellow Associates at the moment.

I proposed that we should require the Licentiates to remain outside the Fellowship class, who surely already contain enough back-door men of about 1905 date.

Some of us are too busy getting a living, or else we might join the fighting front, but surely there are plenty in easy circumstances who can do so.

Our present representatives seem a very quiet lot; in fact, several never open their mouths at meetings, and the one or two who do seem to avoid any useful topic.

Let us have a referendum of all the Associates

and the policy generally required, and get our representatives to state what they mean to do or not to do before election time (such as Town Councillors do), and, if necessary, let us eject them. Anyway, let us liven them up and see they keep awake.

A referendum of letters, etc. (not postcards), will cost money, so we must ask for subs. Will this Associates' club take it up? I should like to hear what their line of attack is and also what they want us to do. SWALLOWITE.

Architectural Assistants, Office of Works.

SIR,—Your correspondent misunderstands the intention of my letter which appeared in your issue on the 1st inst.

I pointed out that the injustice of temporary employment extends far beyond the architectural assistants, and that many others who occupy equally important positions in the Office of Works suffer from the same injustice, and I instanced the clerks of works. Now that the architectural assistants have been promised permanent appointments I venture to hope that in fairness to the others the same conditions will be offered to them. X.

SIR,—It should be understood that the above class are fighting for official status by establishment (now promised to each member by the First Commissioner in the House of Commons on the 7th inst.), as much as for adequate remuneration for their professional services, for in their present condition, without departmental work, which has been during the past few years taken from them surreptitiously and seized upon by a class junior to them, together with the need of the exercise of their abilities reduced to a minimum; and in the absence of this all interest in the architectural work is ended.

And to this must be added (whether by order of the Principal Architect, certainly with the knowledge of the heads of the branches, but it is believed without the sanction of the Board) the vexatious interference of a number of junior assistants (formerly draughtsmen), who, armed with their Civil Service Certificate, are riding "rough-shod" over the members of the "Architectural Assistant" class, the majority of whose members taught them on their entry into the Department, and who are their seniors in service, age, and, it must be conceded, by attainments, who, without having reason to be proud of their former pupils, righteously object to this treatment.

But now that our Parliamentary searchlight is being turned on the dark corners of the Office of Works Architectural Section, further ugly facts will be bound to come to light, and the Secretary of the Department would be well advised to make independent personal inquiry, and without delay, into the conditions that obtain, and not from those officers who have misrepresented facts to him in the past.

LABOUR MEMBER.

The Use of the "Order."

SIR,—It is refreshing to find an architect designing without introducing attached columns, like Mr. Curtis Green in his scheme for the Marylebone Municipal Buildings.

Certainly a most dignified appearance is generally given when an "Order" is introduced, but the effect is obtained so easily that it is open to question whether it does not tend to encourage what might perhaps be called laziness in design. But for this royal road to success architects might be more on the alert to devise other means of giving dignity to their designs. Variety would be obtained and money saved which could be expended on sculpture, thus giving more of what Fergusson called "phonetic value."

The Reform and Travellers' Clubs and Bridgewater House might be quoted as examples of Sir Charles Barry's fondness for designing without an "Order."

W. L. H. LVERTON.

A Correction.

SIR,—Will you kindly allow me space to correct an error in your report of the Conference of the Model Abattoir Society, held at the Royal Society of Arts on the 7th inst.? In it I am credited with having stated that if public abattoirs were enclosed by high brick walls, or hidden underground, we "might get some of the advantages the

Society were aiming at." This is entirely the reverse of my opinion.

Referring to my manuscript, I find the words used were, "If this were done nearly all the advantages of the public abattoir would be counteracted. Private slaughter-houses are to-day hidden from view, and it would be a retrograde movement to perpetuate this undesirable arrangement."

I am as little in sympathy with the prevalent idea in some Continental countries that the public abattoir should be a "show" building as that of the rooted idea in England that it must necessarily only be mentioned in abated breath before polite society.

Until we become a nation of vegetarians let us frankly acknowledge that buildings for the preparation of beef are as necessary, and should be as hygienic, as those for the manufacture of biscuits. R. STEPHEN AYLING.

INTERCOMMUNICATION COLUMN.

Timber Brands.

SIR,—Will you, through the medium of your paper, kindly inform me whether the brand distinctions on timber are all changed annually? A friend of mine agrees that they are. I maintain that such is not the case, but that new brands are added each year.

YOUNG JOINER.

[*] Most certainly the brands or marks on the end of timbers are not changed, but remain the same year after year. Of course, if new sawmills are opened in wood-producing countries, naturally, new brands come into operation, but our correspondent will find that all the well-known brands have continued for many years.—Ed.]

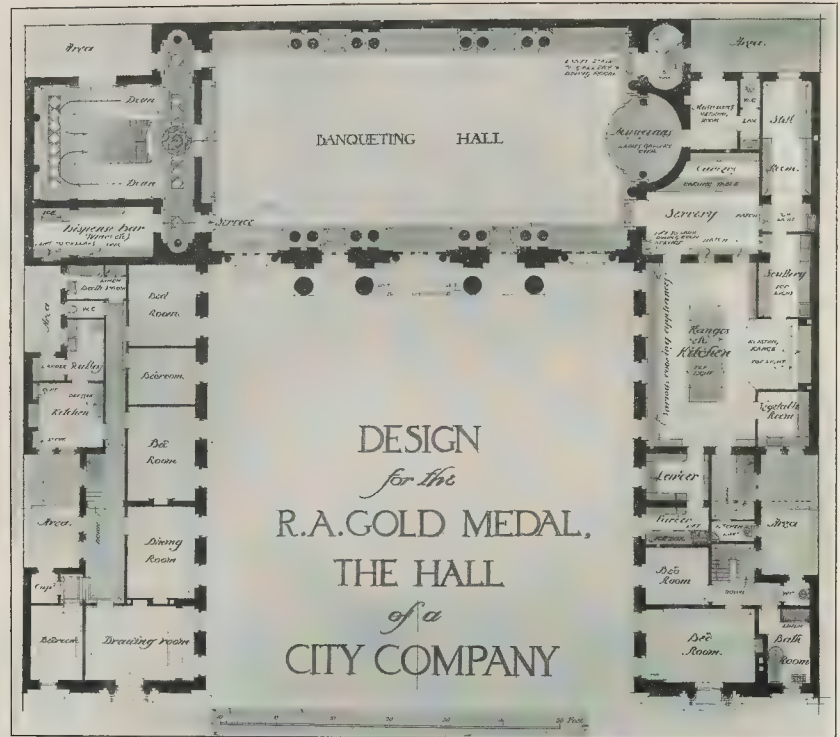
FIFTY YEARS AGO.

From the *Builder* of December 21, 1861.

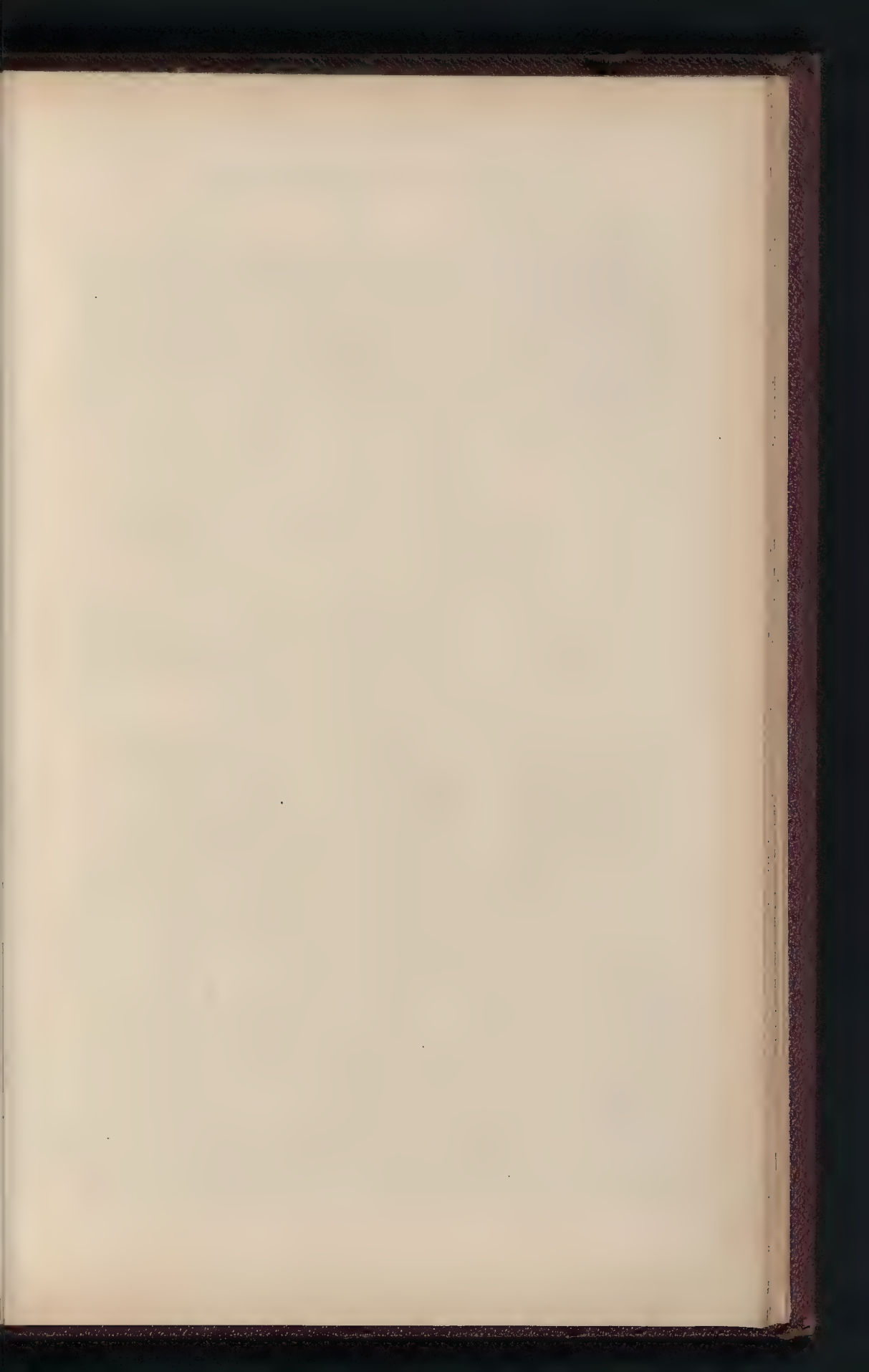
A Heavy Loss.

THE death of his Royal Highness the Prince Consort has fallen on the nation with the effect of a stunning blow. Its unexpectedness; the extreme worth of the Prince—a man in the prime of power; the sorrow which all know it brings to our beloved Queen; and the gravity of the position of the country at the moment, have all tended to increase the wail of lamentation which has come up from all classes and conditions of men. Even yet the loss cannot be fully estimated; but by none will it be deemed greater than by those connected with art, science, and literature; and by none of these latter than by our own readers. The debt which the industrial arts of this country owe to the Prince is enormous. No one comparing their present state with that which prevailed within the remembrance of not old people, and recollecting the part he has played, can doubt as to the powerful influence that has been exerted for good in these matters, and which may be said to have culminated in the suggestion and perfecting of the scheme of the first great International Exhibition.

The extent of his information and his knowledge of the principles of art were remarkable. It was with him no simple "I prefer that," or "I desire this"; but "It should be in such a way because of such a thing." It happened to us to be in the tea-room of the Royal Society on the evening that the Prince paid his first visit there. The visit being unexpected, the meeting was a small one; and we can perfectly well remember the general observation when the Prince, then quite young, passed round the table on which some miscellaneous objects of curiosity had been placed and spoke with knowledge of every one of them—from a piece of amber, of which he named the original locality, to the model of a machine for cutting ship-timbers. A distinguished man, now dead, gave expression to his surprise; and the Prince replied with a smile—the words are as clear in our ears as if they had been uttered yesterday—"Such matters were a good deal looked to at Bonn."



Design for the Hall of a City Company: Ground and First Floor Plans, by Mr. L. H. Bucknell.

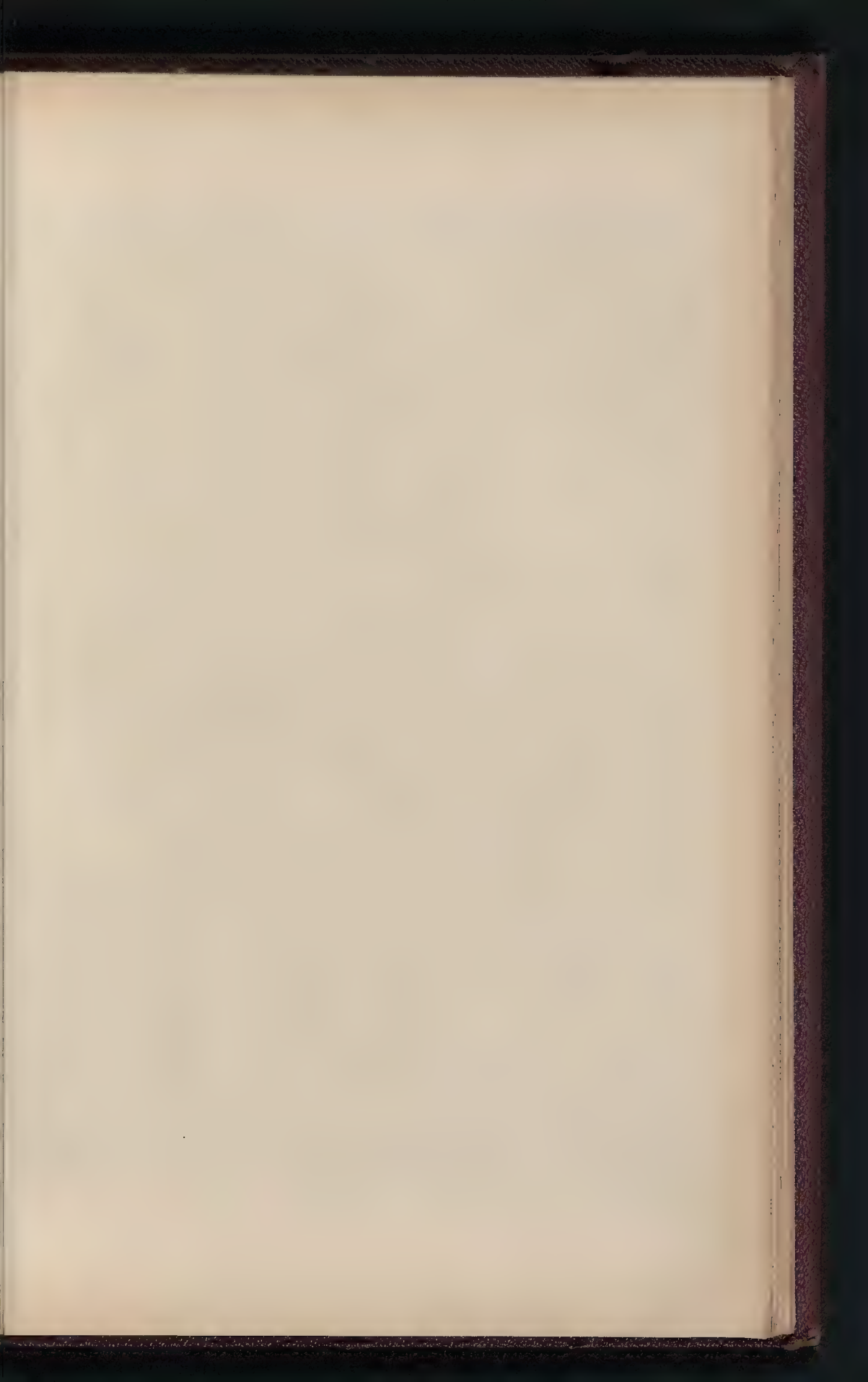


DESIGN *for the* R.A. GOLD MEDAL,
THE HALL OF A CITY COMPANY.



INK PHOTO SPRAGUE & CO. LTD. 4 & 5 EAST HARDING STREET FEETTER LANE E.C.

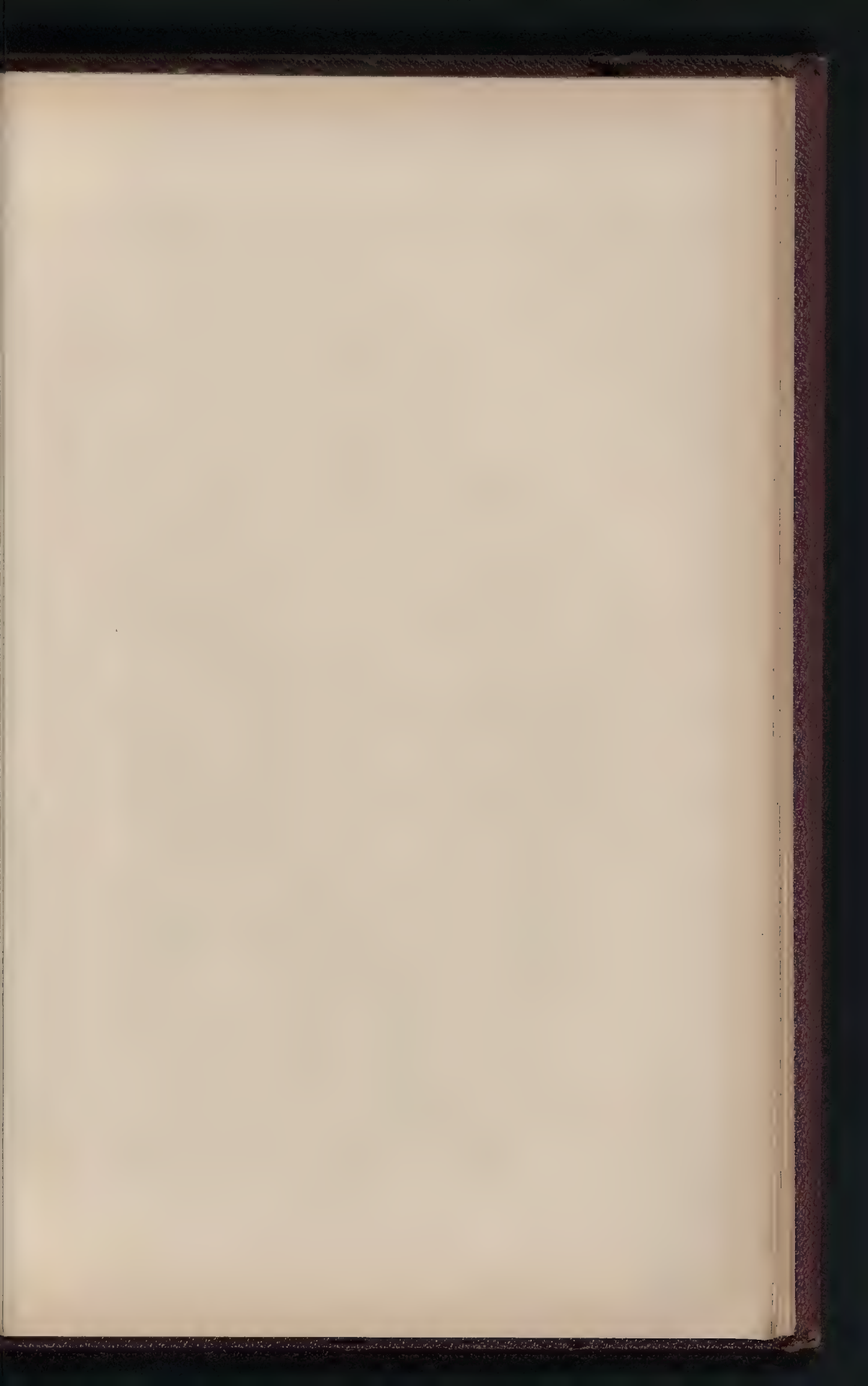
R. A. SCHOOLS, 1911: DESIGN FOR THE GOLD MEDAL.—By MR. L. H. BUCKNELL



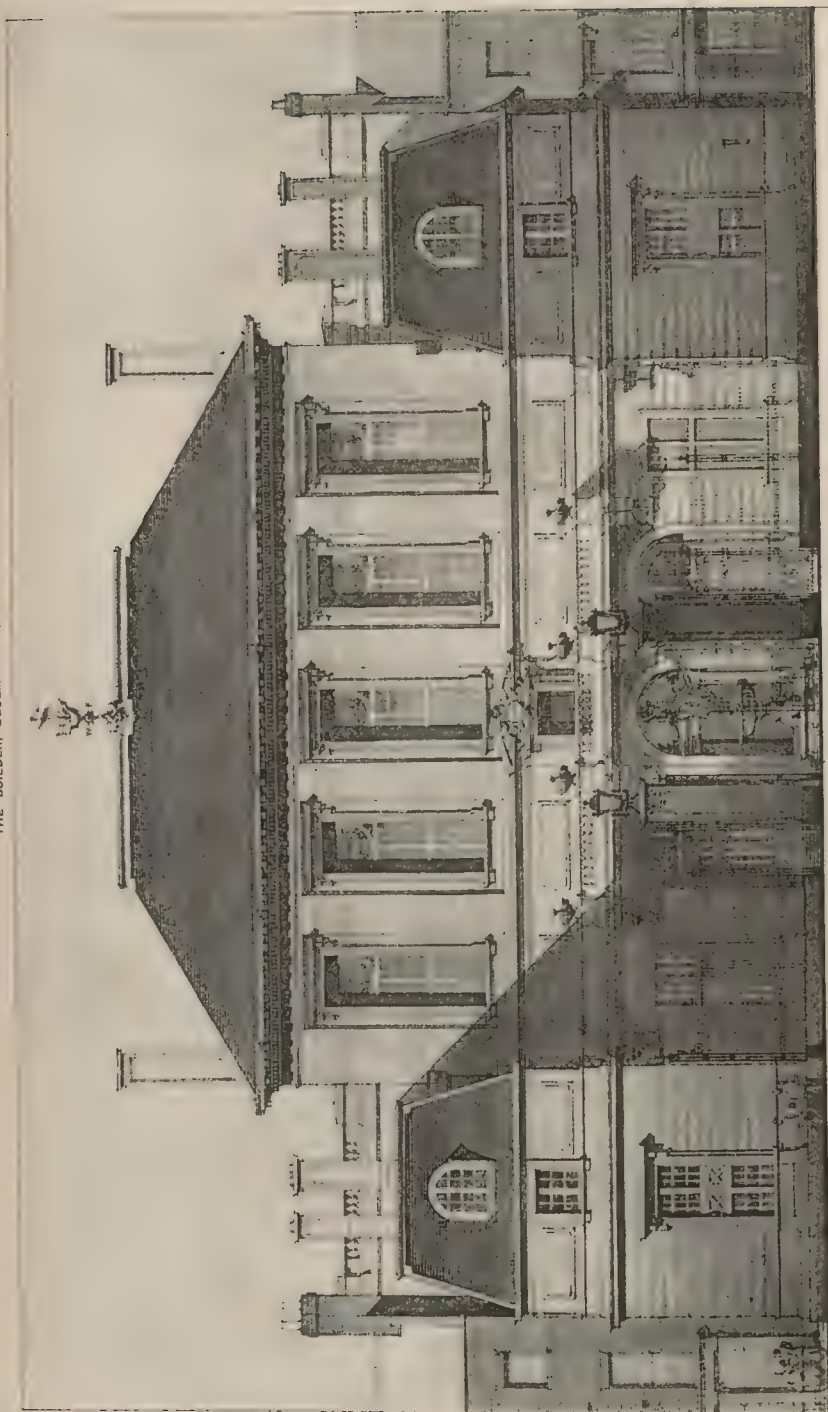


Awarded the Gold Medal.

R A SCHOOLS, 1911: DESIGN FOR THE GOLD MEDAL.—By MR. ALAN BINNING.



THE BUILDER, DECEMBER 22, 1911.



Elevation towards Street

THE HALL OF A CITY COMPANY

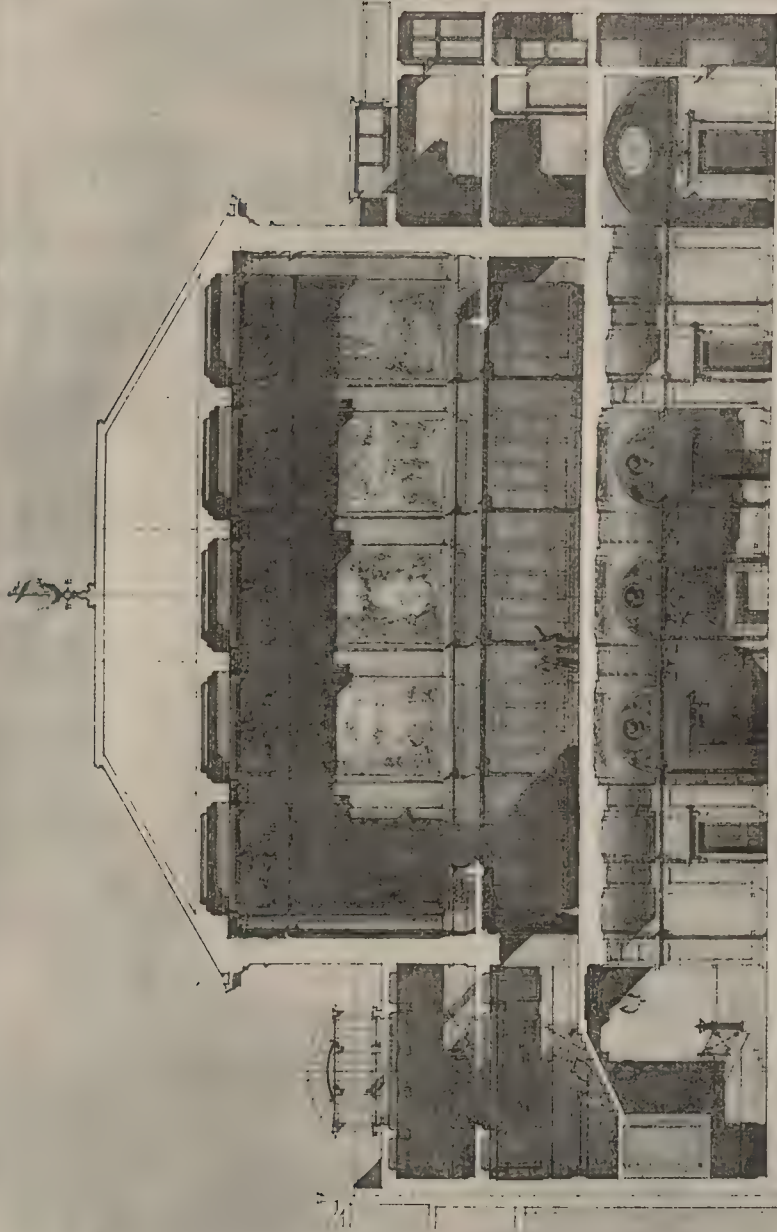


*Half-length front elevation of Hall of City Company
showing mural decoration*

INK PHOTO SPRAGUE & CO. LTD. 4 & 5 EAST HARDING STREET FETTER LANE E.C.

awarded the Gold Medal.

R. A. SCHOOLS, 1911: DESIGN FOR THE GOLD MEDAL.—By MR. ALAN BINNING.

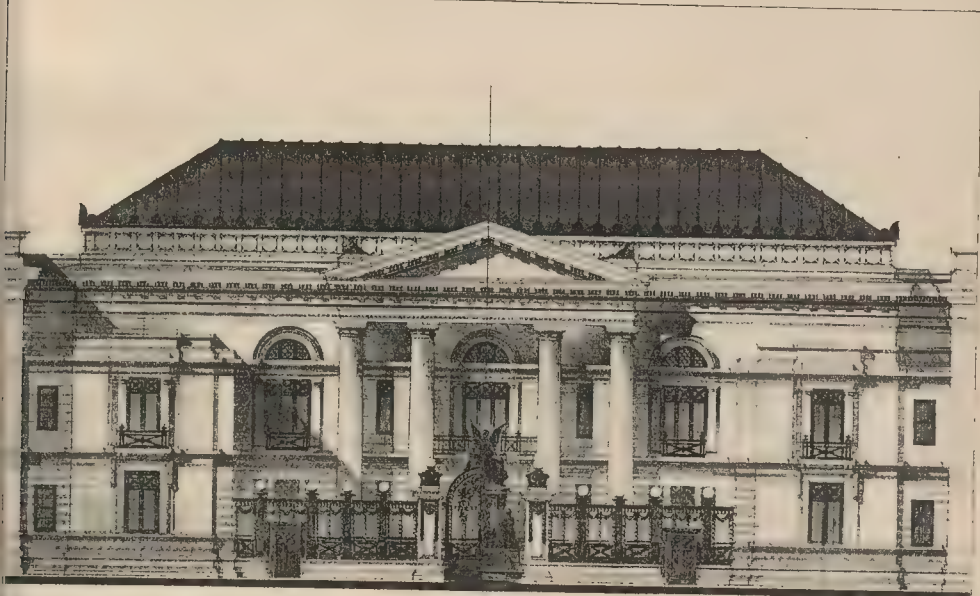


Section of Line B-B

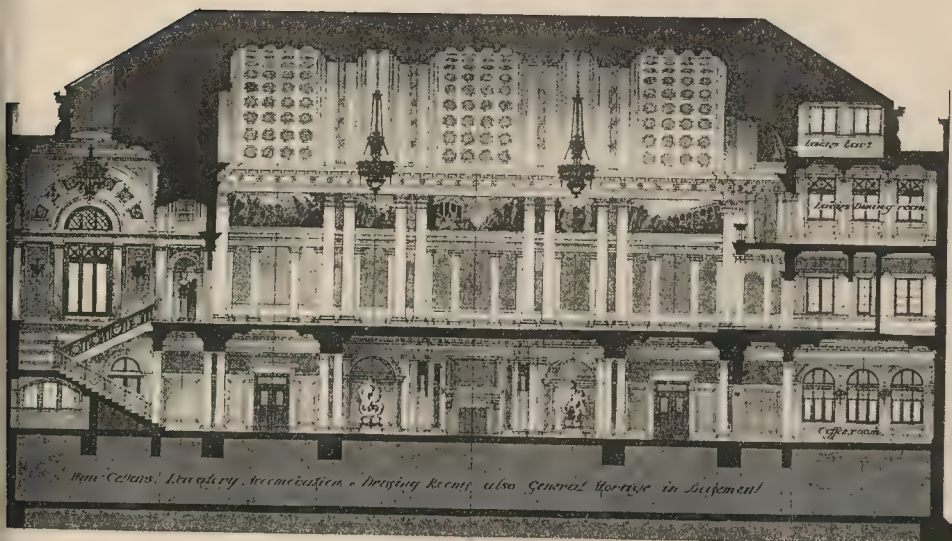
0 10 20 30 40 50 60 70 80 90 100

Awarded the Gold Medal

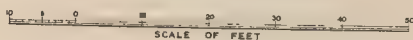
R. A. SCHOOLS, 1911: DESIGN FOR THE GOLD MEDAL.—BY MR ALAN BINNING



Elevation.



Longitudinal Section.



"INK-PHOTO" SPRAGUE & CO. LTD. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

MONTHLY HISTORICAL REVIEW.



Beckford Church.

[Photo. by Mallott.]

SOME WORCESTERSHIRE CHURCHES.—II.

[Continued from page 543.]

NOT far from Bredon, described in the previous article, and nestling like it, under Bredon Hill, whose isolated height dominates the whole of Evesham and the Severn Plain, are the little villages of Overbury and Beckford. Both possess churches of considerable interest, respectively dedicated to St. Nicholas and St. Barbara. At the former restoration has, on the whole, been lenient, though it has fallen into the common mistake of stripping the walls of their decent coat of masonry to the view; nay, even calling attention to their shame by emphasising their dom jointing. This may, however, to

some extent, be condoned in view of the light which has probably been thrown by the process on the history of the church. The Norman nave, which is now decidedly dark, must have been well lighted in its original state. A range of small, round headed clear-story windows with deep internal splays still exists, each placed over a pier of the arcade, and below them on the outer side the corbel-table carrying the original aisle roofs can still be seen. At a later period the aisles were probably doubled in width and the new roof carried up above the windows, making them useless. The round-arched arcades exhibit the rude Norman workmanship in the process of feeling its way to progress. On the

south, and doubtless earlier, side the capitals are mere thick slabs of stone, with a slight capping and fluted on the under edge; on the north they begin to affect a truer capital form by the appearance of a definitely indicated abacus and necking, and by the splaying, as well as fluting, of the lower edge.

Here, as at Bredon, the church seems to have been extended by the addition of a tower, which is battlemented with angle pinnacles somewhat recalling the fine towers of Somersetshire, on the site of an original small chancel, and of a large Early English chancel beyond it, with fine if low-pitched groined vaulting. The church contains some remains of XVth-century pews with tracery panels.



North Door.



Beckford Church.

Chancel Arch.

The very careful restoration now in progress at Beckford has revealed additional points of interest in a church already by no means lacking in them. It possesses two Norman doorways enriched with naive but uncommon sculpture. Over the north door, now built up, a curious group occupies the tympanum, surrounded by a cable mould, and with a frieze below it of conventional ornament reminiscent of classical prototypes. In the centre stands a figure impaling a monster with the pointed foot of a cross held in the right hand, while the left appears to encircle a kneeling man in a cord. What is the interpretation of the scene? Does it represent the Saviour crushing the devil and rescuing mankind in a net, or does it refer to some local legend?

The more elaborate south door (sheltered under a XVth-century porch) has several receding orders of enriched members and engaged shafts, and a still more mysterious group in its tympanum. In the centre stands a squat Latin cross with a bird on its eastern arm and a rosette over its western. On either side a strange quadruped is represented apparently in the act of adoration. The bird may possibly be an allusion to the legend of the crossbill or the robin; the rosette may



[Photo. by Harris.]

Spetchley Church.

chancel belong to the XIIIth century. The latter is lit by coupled lancet lights, but one

which still shows traces internally of the original high sill. On the north of the chancel stands a vestry or schoolhouse, built in 1687, with square-headed, mullioned windows, and a gilded squint between it and the church, the purpose of which is by no means clear.

Beckford stands near the limit of two types of domestic architecture dependent on the local building materials. West and north lies the timber district with its black and white houses; south and east we are at once in Cotswold, the region of stone-built manors and cottages, mullioned windows and stone-slatted roofs. Round Broadway, whose "fatal gift of beauty" has, alas, brought it into a popularity too great for its safety, cluster a number of less-known and relatively unspoiled villages retaining much of their ancient charm—Snowhill and Willersey, Weston-sub-Edge and Bretforton. Hard by the last-named, Church Honeybourne justifies its name by possessing a church remarkable in more ways than one. The approach from the south by a long paved churchyard path is very beautiful. The chief feature in that view is a porch which, including its roof, is constructed entirely of stone, the slabs with which it is covered being carried by stone ribs or rafters springing from corbels, and their joints covered with flat stone ridge tiles.

The tower at the west end, which is of the early XIVth century, leans to an alarming degree out of the perpendicular, and its



Inkberrow Church.

stand for the sun, the animals, which look like donkeys, with four ears apiece, may be meant for oxen. But what does the whole composition mean? Perhaps one of our readers more learned in iconography can explain it. Can it stand for a symbol of the Trinity—the sun for God the Father, the bird for the Holy Spirit, the cross to indicate the Second Person, with the oxen in allusion to the nativity?

The work of restoration has revealed the remnants of a fine Norman window with delicately-carved capitals and moulded bases to its engaged shafts in the south wall, of another in the north wall, and vestiges of a pair of Norman windows on each side of the west window, a XVth-century insertion. In the east wall of the nave a door to the rood gallery from the tower staircase with an entrance from outside, and a XVth-century squint on the north side of the Norman chancel arch, have also been uncovered.

In Georgian times a fresh coat of plaster marked out to simulate ashlar was super-added on the mediæval plaster, and where this was not done, as, for instance, behind the contemporary pulpit, traces of mediæval painting are still to be seen. The joint lines are now to be obliterated with a thin skin of new plaster. On the removal of the Georgian plaster ceiling a fine oak Perpendicular roof in almost perfect condition came to light. It is of a type common in the western counties. Each pair of rafters, with its high collar beam and curved struts, constitutes a truss. These are about 6 in. thick, and are placed unevenly, but on an average about 12 in. apart. There are four massive cambered tie beams, with curved struts springing from stone corbels, but naturally no purlins. It is impossible to tell from the present condition of the roof whether it was intended to be sealed or left open.

The tower, which occupies the site of the original Norman choir, and the present

of these on the south side was replaced in the XIVth century by a "low side window,"



[Photos. by Dourty.]

Churchyard Cross, Wick, Worcestershire. (See next page.)

Restored by Mr. Cecil G. Hare.

has been necessary to support it at some period by means of an enormous western buttress. It is surmounted by a remarkable bracketed spire springing from a mere string course, and having angle pinnacles and gables in each of the eight faces. The church, which is without aisles, has some fine Decorated and Early Perpendicular windows. The original steep roof of the nave, with eaves just above their heads, was replaced in the XVth century by a flat leaded one at a considerably higher level, and the additional wall thus gained is pierced on the south side by a range of clearstory windows. The XIIIth-century chancel retains its original high-pitched roof.

Leaving Church Honeybourne by a straight stretch of Roman road several miles long we must traverse an intrusive tongue of Warwickshire before reaching Worcestershire again, and, in doing so, pass through the attractive village of Bidford, interesting not only for its fine Avon Bridge referred to in last month's article, but for some noteworthy houses, both of the stone and timber varieties. One of the former is built, in alternate courses, of two varieties of local stone differing in colour. A few miles west lies Inkberrow, proudly situated among umbrageous trees on a promontory of upland, some 50 ft. to 100 ft. high, jutting out with steep sides into the plain, a spot that must have been of strategic importance in the obscure conflicts of prehistoric or mediæval politics. The church is a good example of well-proportioned refined XIVth-century work, with a sturdy, but well-detailed western tower. Originally aisleless, it was enlarged in the XVth century by the addition of a fine north aisle, with a flat roof and pinnacled battlement, and a rather squat porch. The windows of this aisle, whose tracery is peculiar in being cusped, retain some good contemporary glass in which large use is made of yellowish grisaille. A chapel forming a sort of transept on the opposite side contains the notable tomb of John Savage, who died in 1631. His effigy rests within an arcaded shrine under a horizontal canopy. The sculpture, far ruder than at Bredon, comprises figures over the black marble angle columns of an odd Chinese appearance. The monument, which was ruinous when Nash described it in 1738 in his history of Worcestershire, bears traces of rough handling, due, doubtless, to an unskilful restoration. It is of the Renaissance type customary at the period of its erection, with the exception of the tester, which is panelled with Gothic quatrefoils. Similarly, the interesting Georgian oak pulpit shows Gothic influence—the of the Strawberry Hill type—in its panelled sides. In the vestry stands a fine XVIIIth-century oak dresser.

Of the churches passed on the return road to Worcester, after the round we have been following, the most interesting is the tiny one of Spetchley, rather gloomily perched on a northward facing bank under overwhelming trees. Actually included in Spetchley Park, it has for many generations been the burying-place of the Berkeley family, and was extended by the addition of a relatively large chapel to the south of the chancel for the accommodation of their tombs, while to the north a large window was added, apparently to throw light on them. This window is curious in a church, for it is just a Tudor, square-mullioned and transomed bay of domestic type, such as might be found at Haddon Hall or some Cotswold manor-house. The principal among several interesting monuments is that of Rowland Berkeley (d. 1614), which stands in the arch opening into the chapel in the full light of this window. Though thoroughly characteristic in its detail and ornament of the Jacobean manner, it is unconventional in its general design. The canopy over the two figures, which, like the main body of the ornament, is in alabaster and richly coloured, takes the form of a thin barrel vault without superstructure springing at head and foot from slender columns. Stout obelisks, set diagonally at the angles of the monument, give a faint suggestion of support to this somewhat crazy structure, but they do not conceal the fact that the vaulted canopy has no abutment, and is, in fact, kept in equilibrium by sturdy wrought-iron stays, honestly enough displayed, built into the arch jambs.

And so by the London Road back into Worcester.

WICK CROSS, WORCESTERSHIRE.

AN interesting restoration has been carried out recently at Wick in Worcestershire. Under the care of the Rev. C. H. B. Hudson, and with the advice of Mr. Cecil G. Hare, the old Cross in the churchyard has been repaired and a new finial erected. The sculpture was executed by Messrs. R. Bridgeman & Sons, of Lichfield, Staffordshire. A description of the work written by Mr. George Baker on parchment was placed in a bottle in a cavity under the Cross.

JACOBÆAN ARCHITECTURE AND HISTORICAL FACTS.

SUPPLEMENTING our report of Mr. Arthur T. Bolton's paper on Jacobean Architecture read before the Architectural Association on November 27 (see issue of December 1), we are now able to give lists compiled by Mr. Bolton of the chief dates when buildings were erected and of facts relating to the period. These details cannot fail to be of interest and value to students.

APPENDIX I.—ENGLAND.

List of Examples and Historical Outline First Half of the XVIIth Century.

1603. ACCESSION OF JAMES I. Reign, twenty-two years; married, 1589, Anne of Denmark. 1598-9, in the winter, Globe Theatre built. "Henry V." produced. 1601, Essex insurrection. Theatres closed by order. Shakespeare's purchase of new place Stratford-on-Avon.
1602. "Hamlet" probable production. "Lear." 1607. "Antony and Cleopatra," 1608. "Tempest," 1611.
- 1602-10. Burton Agnes, Yorkshire.
1600. (?) Sir Paul Pindar's House, Bishops-gate. Facade. Now in Victoria and Albert Museum.
1603. John Florio appointed teacher Italian Prince Henry. Translation Montaigne.
1604. Hampton Court Conference. A. V. Bible ordered. Peace with Spain. 1605, Gunpowder Plot, 1608, Customs Revenue case. 1611, baronets created. First settlement America and Ulster. First Charter of East India Company, 1600, and again 1612. Sir Dudley Digges.
1604. Return Inigo Jones from first journey, 1597-1604, to Italy, and including possibly a visit to Denmark.
- 1603-16. Audley End, Essex.
1605. Northumberland House, Charing Cross (now destroyed).
- 1603-05. Knole, Kent.
- 1605-12. Bramshill, Hampshire.
1607. Charlton House, Wiltshire.
- 1605-7. Holland House, Kensington.
- 1607-11. Hatfield House, Hertfordshire.
- 1607-12. Charlton, Kent.
1609. Chapman (1559?-1634). Translation of Homer, dedication to Prince Henry.
1609. Inigo Jones to France as King's Messenger.
- 1610-12. Inigo Jones, Surveyor to Prince Henry.
1610. Ham House, Surrey.
- 1609-10. Merton College. } Frontispieces at
- 1610-13. Wadham College. } Oxford.
- 1613-18. Bodleian Quad. }
1610. Ford Abbey, Devonshire.
1611. Fountains Hall, Yorkshire.
1612. Princess Elizabeth, only daughter James I. betrothed to Elector Palatine. Death of Prince Henry. Death of Salisbury. Robert Carr becomes chief adviser to James.
1612. Holland House, Kensington. (Additions by Thorpe before 1614. Death of Sir Walter Cope.)
1612. Campden House, Notting Hill (now destroyed).
1612. Cranbourne Manor, Dorset.
1613. Bolsover Castle, Derbyshire.
- 1613-14. Inigo Jones's second journey to Italy, Rome, Venice, Vicenza, etc.
1615. Inigo Jones appointed Surveyor-General of Works.
1614. Second Parliament met and dissolved. Villiers becomes chief favourite. Sir W. Raleigh's expedition to America. 1616. Execution, 1618. Death of Shakespeare, 1616. Born, 1564. Life in London, 1585-1609?

- 1615-21. Houghton House, Bedfordshire.
- 1615-16. Chilham Castle, Kent.
- 1617-23. Chapel, Lincoln's Inn-fields.
- 1618-35. Aston Hall, Warwickshire. (NOTE.—Crewe Hall, Staffordshire, 1615-36, burnt XIXth century, rebuilt by E. M. Barry, had similar character).
- 1619-21. Abbots Hospital, Guildford, Surrey.
1619. Banqueting House, Whitehall, by Inigo Jones.
- 1619-20. Blissing Hall, Norfolk.
- The Thirty Years' War in Germany begins and
1619. James leaves his brother-in-law, King of Bohemia, in the lurch. Starts, 1620, negotiations Spanish Marriage. 1623, Charles at Madrid. 1620, Sailing of the *Mayflower*. Third Parliament, 1621. Bacon (1561-1626) impeached. 1624, Fourth Parliament. War with Spain. Treaty of Marriage, France. Death of James I.
- 1625-49. CHARLES I. TWENTY-FOUR YEARS' REIGN. BORN, 1600; married, 1625, June, Henrietta Maria of France.
1624. Castle Ashby, Inigo Jones Gallery.
1624. Sir Henry Wotton's "Elements of Architecture" published.
1625. Death Orlando Gibbons. Born, 1583. Organist Chapel Royal. Composer.
1628. St. Catherine Cree, Leadenhall-street. Eleven years of greatest stress. No Parliaments. First Parliament, 1625. Failure expedition to Cadiz. 1626, Second Parliament. Sir Dudley Digges and Eliot attempt to impeach Buckingham. 1627, War with France and failure of Buckingham's expedition, 1628, Third Parliament. Petition of Right. Wentworth and Pym. Laud from Bath and Wells to London. Wentworth comes over to King. Buckingham assassinated. 1629, Parliament dissolved.
- 1629-30. Rubens in London. Whitehall ceiling painted.
1630. St. Catherine Cree consecrated by Laud.
- 1631-35. St. John's College, Oxford.
- 1631-33. St. John's Church, Leeds.
- 1632-8. Milton's early poems. To Italy. 1638-40.
1632. Ant. Van Dyck invited to England by Charles I. Died at Blackfriars, 1641. Born 1599, Antwerp.
1635. Burford Priory.
- 1635-41. Clare College, Cambridge, and after the war, Peace France and Spain, 1630. Death Eliot in Tower. 1632. Ship Money, 1634-5 and 7. Hampden Trial. War Scotland, 1639, over liturgy introduced 1637. Fourth Parliament, 1640, and Fifth, "The Long Parliament," began November same year.
1637. Death Ben Jonson. Born, 1573. (?) Retired Court, 1630.
1638. Death of Sir Dudley Digges.
1641. Commission to deface images. May 12, Execution St. James's. October, Irish Rebellion.
1638. Inigo Jones's Design Somerset House Palace, marked "Not taken."
- 1638-40. Kirby Hall, Northamptonshire (first built 1570-2).
1642. January 4, Charles and the Five Members. Leaves London, 10th. Battle of Edgehill, October.
1644. Scots Army crosses border. Marston Moor. 1645, Laud beheaded. New model army. June Naseby. Charles to join Scots, 1646. May. Given up, January, 1647. The Independents supplant Presbyterians. Execution of Charles, January 30, 1649.
- 1649-60. COMMONWEALTH. 1658, September 3, death Cromwell. 1660, May 29, Charles II. enters London.
1649. Sir Christopher Wren admitted Wadham College.
1652. Death of Inigo Jones. Milton's blindness.

DATES NOT ASCERTAINABLE.

- Moyns Park, Essex.
- St. John's, Warwick.
- Stanway Gate House, Gloucester.
- Dukes' House, Bradford-on-Avon.
- Brympton, Somerset.
- Dorton House, Bucks.
- Quenby Hall, Leicester.

DATE.	MILAN.	FLORENCE.	ROME.	VENICE.
1508	LEAGUE OF CAMBRAI.			
1508-12		Capture of Pisa ...	Sistine roof painted. MA. Raphael Stanzo, 1508-20. Raphael Loggie, 1517-19.	
1510		Death Botticelli (b. 1447)		
1511		Giuliano Medici restored.		Pal. del Consiglio Verona. G.
1513-22	LEO X. (Giovanni de Medici), POPE.			
1514	Death of Bramante. Nephew Raphael as successor at S. Peter's.			
1517	Capture of Egypt by Turks, leading to closing of East Route to Indies		S. Giovanni di Fiorentini designs. JAS.	Confraternita S. Rocco begun.
1518		Mad. S. Biggio. ASGI.....	Villa Madama designs. R.	
1520		Montepulciano.		
1520	Death of Raphael at Rome. Burial in the Pantheon. Cellini leaves Florence for Rome.	Pandolfini Pal. after Raphael.	Peruzzi appointed to St. Peter's.	Doges Pal. cortile left façade. GB.
1521-34				S. Giustina, Padua. A. Leo
1523-34	CLEMENT VII. (Giulio Medici), POPE.			
1524		New Sacristy St. Lorenzo. MA		
1525	BATTLE OF PAVIA. FRANCIS I. TAKEN PRISONER BY CHARLES V.			
1526		Pal. del Te. Mantua, 1525-35. GR.		San Michele fortifies Verona, with Portas Nuova and Palio. SM.
1527	SACK OF ROME. DISPERSAL OF ROMAN SCHOOL OF BRAMANTE AND RAPHAEL.			
1529	PEACE OF CAMBRAI, LEADING TO DEVELOPMENT OF VENICE AND VERONA.			
1529	REFULGE OF THE TURKS BEFORE VIENNA.			
1529		Pal. Massimi. FP.		
1530	SIEGE AND CAPTURE OF FLORENCE. MICHELANGELO DEFENDS AND BECOMES EXILE.			Bevilacqua, Verona. SM.
1530-80			Pal. Farnese. ASG2. Cornione. MA.	
1532			Pal. Cornaro della Ca Grande. JTS.	
1534-50	PAUL III. (Alessandro Farnese), POPE.			
1534	Death of Correggio (born 1494)		San Gallo (Younger) at St. Peter's	S. Salvatore comp. TL.
1536	Death of Peruzzi			Library S. Mark's model ordered. JTS. Zecca. JTS.
1537-64		COSIMO I., RULER.		
1538			Capitol laid out. MA	
1540		Pal. Alberti, Bologna. BP	Villa Medici. AL.	S. Giorgio dei Greci. JTS.
1542			Pal. Spada. After R.	Logetta S. Marco. JTS.
1545	Cellini returns from France and works at Florence.		Capitol, side pials. MA.	
1546	Death of Antonio San Gallo (the Younger).			
1546			M. Angelo apptd. to S. Peter's.	
1547-59			Palladio visits Rome	
1549			S. Andrea, Porta del Popolo. V.	
1549			Caprarola. V.	Basilica Vincenza. P.
1550	Council of Trent. Counter Reformation		Villa D'Este lay-out. PL.	Grumani Pal. SM.
1551	Palestrina (1524-94) apptd. Musician at Vatican	Pal. Ugocioni. F3	Villa Julia. V.	Pal. Chiericati P. (Museo Civico, Vincenza).
1552	S. M. Carignano, Genoa. GA.	Cellini Perseus Cast.	Side Loggia. V.	
1554		Capture of Siena	CAPITOL.	P. Puhlishes "Antq. of Rome."
1556				Time Pal. Vincenza. P.
1557	PIUS IV. (G. A. Medici of Milan), POPE.			Scia D'Oro Doges Palace. JTS.
1559	Death of San Michele. Paolo Veronese 1528-88.			Pellegrini Chpl., Verona. SM.
1560	Death of Andrea Doria, Genoa. Aged 82. "Padre del Patria."	Uffizi Gallery. V.	Pal. Lancellotti.....	
1561			Casino del Papa. PL.	S. Giorgio Magg. P.
1563	Pal. Doria Tursi, Genoa. GA.		Porta del Popolo. V.	Pal. del Consiglio Vincenza. P.
1564	Death of Michelangelo. Birth of Galileo, Pisa, died Florence, 1642.		Senators Pal. Capitl. MA.	
1564	PIUS V. (Ghislieri of Piedmont), POPE		Side cyroals St. Peter's. V	
1566	Villa Cambiaso, Genoa. G.A....	Cortile Pitti. BA.	1609. Invented telescope. Condemned Rome, 1632.	
1568		S. M. Angeli, Assisi V. Bgn.	R. H. Pal. Capitol, after MA.	
1569-79	S. Fedele. PP.		Jesuit Church. V.	Pal. Valmarana. P.
1570				At Vincenza.
1571	NAVAL VICTORY OF LEPANTO OVER TURKS.			Palladio's book.
1571	Brera (Jesuit College).	Medician Library. MA. (Vasari completed.)		Pal. Porto Barbarano. Vincenza. P.
1572	GREGORY XIII. (Ugo Buoncompagni of Bologna), POPE. DEATH			Villa Rotunda Vincenza. P.
1573	Death of Vignola.			
1574-90			Papal Palaces. DF.	
1575	Death of Titian (born 1477)		S. M. Magg. restored ...	Il Capitlanio, Vincenza. P.
1577	Leghorn, Piazza, and Strada, 1605 and 1629.			S. G. Magg. Façade, Venice. Sc. after Pa. death 1580.
1579				Redentore. P.
1580	Death of Palladio		Capitol Campanilli. ML.	Fire at Doges Pal.
1582			Pal. Farnese. Loggia. Buck façade. GP.	Theatre Vincenza begun. P.
1584	Pellegrino, work at Cathedral		Faç. Collegio Romano. BA.	
1585-90	SIXTUS V. (Felice Peretti), POPE. (Creation of new Rome)			Theatre Vincenza inaugurated. Procuratie Nuove. Sc.
1586			Dome of S. Peter's. MA. GP., and DF.	
1587	S. Annuncata, Genoa. GP.		Lateral Pal. and Portico. Acqua Felice. DF.	
1588	Pal. Marino, Genoa. GA.		Obelisk S. Peter's set up.	
1590			Via Sistina, Sistine Chapel at S. M. Mag. DF.	Faç. Prison to canal. Doges Pal. ML.
1592			Borghese. CM.	
1600	First Opera ("Euridice"), by Peri and Caccini at Florence for		Additions Vatican Palace. DF.	Rialto Bridge.
1602	S. Alessandro. LB.		Scaturo's Pal. Capitol. Façade after MA.	
1603		Monte Verde (1568-1611, Court Mus. cina Mantua	Marriage of Henry IV. and Maria de Medici. Rubens present.	
1605-21	PAUL V. (Camillo Borghese), POPE.		Harberini. CM.	
1605-12			Villa Aldobrandini. GP.	
1605				
1607-8	Rubens at Genoa.		Nave of S. Peter's. CM.	
1607	VENETIAN INTERDICT. PAUL V. (PAOLO SARPI, 1582-1623, ADVISES V. NICE).		S. Maria Vittoria.	
1608			Dome S. Andrea Delle Valle (church 1591).	
1611		Galileo in Florence.....	Borghese Cha. at S. M. Magg. FP.	
1614			Fountain of S. Paul.	
1615			S. Carlo in the Corso.	
1620-44	URBAN VIII. (Maffeo Barberini), POPE.		Pal. Mattei. CM.	
1623	Unversita, Genoa, begun.			
1626	(November 18) Consecration of St. Peter's after 120 years' work.			S. Maria Salute. BL
1631-82	Death of Guido Reni, born 1575, near Bologna. In Rome, 1602-42.			
1642	INNOCENT X. (Giambattista Pamfilj), POPE.		L. H. Pal. Capitol. After MA.	
1644-55	ALEXANDER VII. (Fabio Chigi of Siena), POPE.			
1655-67			Cortile of S. Peter's. Ber.	
1656-67				Pesaro Fa BL.
1679				

Data mainly on the authority of Anderson's "History of the Renaissance in Italy."

LIST OF ITALIAN ARCHITECTS, WITH REFERENCE LETTERS TO FOREGOING CHART.

REFERENCE LETTER.	NAME.	DATE.	PLACE.
B.	Filippo Brunelleschi	1378-1446	Florence.
MM.	Michelozzo Michelozzi	1381-1472	Florence.
A.	Ant. Filarete	Died 1485?	Florence.
F.	Leon Battista Alberti	1405-72	Florence.
G.	Fra Girolamo	1438-1515	Florence.
GGG.	Outlino San Gallo	1448-1510	Florence.
BSG.	Douato Bramante	1444-1516	Urbino.
ASGI.	Antonio San Gallo (the Elder)	1453-1534	Florence.
C.	Simone, P. Cronaci	1441-1529	Florence.
AB.	Ambraglio Borgognone	1455-1524	Milan.
JAS.	J. Andrea Sansovino	1460-1529	Florence.
MA.	Michelangelo	1472-1564	Florence.
JTS.	Jacopo, T. Sansovino	1477-1520	Florence.
BP.	Baldassare Peruzzi	1481-1537	Siena.
R.	Raphael Sanzio	1483-1520	Urbino.
SM.	San Michele	1484-1550	Verona.
ASGZ.	Antonio San Gallo (the Younger)	1488-1546	Florence.
GR.	Gialio Romano	1492-1546	Rome.
GA.	Galileo Alessi	1500-72	Perugia.
V.	Barozzi da Vignola	1507-73	Vignola.
PL	Pirro Ligorio	d. 1580	Rome.
BA.	Bartolomeo Ammannati	1511-92	Florence.
GV.	Giorgio Vasari	1511-74	Florence.
P.	Andrea Palladio	1518-1580	Vicenza.
PP.	Tibaldi Pellegrini	1527-94	Bologna.
DF.	Giacomo della Porta	1541-1604	Lombardy.
SC.	Domenico Fontana	1515-1607	Rome.
CM.	Vincenzo Scamozzi	1532-1616	Venice.
FP.	Carlo Maderno	1536-1639	Rome.
Ber.	Flaminio Ponzio	c. 1570-1615	Rome.
Bo.	Giov. Bernini	1588-1680	Rome.
RI.	Frauc Borromini.	1598-1667	Rome.
	Baldassare Longhena	1604-73	Venice.

The dates of the following are not ascertained:—

Ro.	Tommaso Rodati	About 1500	Vincenza.
Fr.	Fromentone		San Sepolcro.
Fb.	Francesco del Borco		Venice.
Gb.	Guchelmo Bergamesco	First half XVth cent.	
Al.	Annale Lippi		
Tl.	Talio Lombardi	Died 1559	Venice.
Pl.	Pietro Lombardi	Died 1519	Venice.
A. Leo	Alessandro Leopardo	14 th -1521	Venice.
D.	Dolcebuono.		
F.	Fofa.		
Fr.	Laurent Binagi.		
Lh.	Martin Luchi (the Elder)	XVth cent.	Rome.
Nl.	Agostino di Ducio.		
Ad.			

APPENDIX IV.

List of Books bearing on the Subject of
Jacobean Architecture.

APPENDIX IV.			DATE.	AUTHOR.	SUBJECT.	DATE.	AUTHOR.	SUBJECT.
List of Books bearing on the Subject of Jacobean Architecture.			1368	P. de l'Orme	"Le Premier Tome de l'Architecture."	1615	V. Scamozzi	"L'idea della Architettura Universale."
				Paris.			Venice.	
DATE.	AUTHOR.	SUBJECT.	1363	J. Bullant	"Reigle Générale"	1615	Burger	"Grotesques."
1485	L. B. Alberti	"L'Architettura."		Ecceen. Paris, 1568.			Nuremberg.	
	Florence. Paris, 1512. London, 1726. translation by J. Leoni.		1363	Vignola	"Regola delli Cinque ordini."	1617	Vriese (or Hon lius)	"Instructions sur les Cinq Rangs de Architecture."
1486	Vitruvius.			Folio. Rome; 4to, Venice. Antwerp, 1593. Amsterdam, 1619. London, 1669.		1668	P. Heylin, D.D.	"Cyprianus Anglicus."
	Rome (Latin). Italian translation, Como, 1521. Paris, 1547 and '72. London, 1692 and 1702.		1363	John Shute	"The First and Chief Grounds of Architecture."		(Life of Archbishop Laud, by his chaplain.)	
1499	Poliphili	"Hypnerotomachia."		London, 1563-74 and 84.		1624	Sir H. nry Wotton	"Elements of Architecture."
	Venice. Paris, 1546. London, 1592.		1367	Daniel Barbajo	"Commentaries to Vitruvius."	1740	Rev. S. Haynes and Rev. W. Murdin	"Hatfield, State Papers."
1540	Serlio	"Architectura."		Folio, Venice. (Venetian Ambassador in England, 1548-60.)		1759	Two vols. folio.	
	Bologna. Antwerp, 1542. Venice, 1651. London, 1611.		1370	A. Palladio	"Quattro libri dell'architettura"	1720	Kip & Kniff	"Britannia Illustrata." Large folio.
1547	A. Borde	"Dyeterie."		Venice, Paris, 1642. London, 1663, first book, and completed by J. Leoni, 1715, London.		1785	Rev. P. Pegge	"Bolsover Castle."
	(Hints on building a house included.)		1593	Dietterlin	"Architectura." Strasburg (small folio).		"Sketch of History of Bolsover and Peak Castles."	
1554	P. Cataneo	"I Quattro primi libri d'Architettura."	1594 } 1595 } 1598 } 1612 } 1613 }	Dietterlin	"Grotesques."	1833	P. F. Robinson	"Vitruvius Britannicus."
	Venice.		1598	Francis Bacon	"Essays."		F.S.A.	Includes besides "History of Hatfield," Woburn, Hardwick, and Castle Ashby. Drawn and engraved by Henry Shaw. Large folio. London.
1550	Du Cerceau	"Book of Grotesches" (folio).	1612	Francis Bacon	"The Praise of Henry, Prince of Wales."	1833	T. H. Clark	"Domestic Architecture. Elizabeth and James."
1559	Du Cerceau	"Livre d'Architecture."	1600	Jean Maucclerc	"Le Premier Livre."	1835	James Hakewell	"Attempt to Determine Exact Character of Elizabethan Architecture."
1576 } to } 1579 }	Du Cerceau	"Des Plus Excellents Bastimens."	1601	A. Palladio	"Appreso Bartolomeo, Carampello." 9' by 12½ by 1½.		(Weale.)	
	1576-79; second edition, 1607. Same, a facsimile, 1868, Paris. (A. Levy, 29, Rue de Seine.) Same, selection of reproductions of Du Cercean's originals in British Museum, edited by W. H. Ward, M.A. (Batsford, 1909.)			Rochelle. London, 1669.	1603	Stephen Harrison	"Arches of Triumph for entry of James I. to London." Engraved by Kip.	
1584	Du Cerceau	"Livre des Edifices Antiques Romains."		Venetia. (Inigo Jones's copy at Worcester College, Oxford.)		1611	R. Peake	"Translation of Serlio's 'Five Books on Architecture'"
	Small folio. Paris.							
1559	Vriese	"Perspective."						
	Leyden.							
1563	Vriese	"Varie Architecturae Formae."						
	Antwerp.							
1577	Vriese	"Architectura."						
	Antwerp.							
1561	P. de l'Orme	"Nouvelles Inventions pour bien Bastir."						
	Paris.							

DATE.	AUTHOR.	SUBJECT.
389	Henry Shaw ...	"Elizabethan Architecture." London. 4to.
390	J. Nash ...	"Mansions of England in Olden Time." London. Folio.
391	S. C. Hall ...	"Baronial Halls." Two vols. Large 4to. London.
392	J. W. Papworth	"Norden's Surveyors' Dialogues, 1618." (A P.S. Essays. Vol. 5. Folio.)
393	A. W. Hakewell ...	"Architecture of the XVIIth Century." Parts I., II., and III. Folio. London.
394	Orlando Jewitt ...	"Essay on Late or Debased Gothic Buildings in Oxford to End of the XVIIth Century." In <i>Archæological Journal</i> . VIII., 38-96.
395	Princess M. Liechtenstein	"Holland House." Two vols. (Macmillan.)
396	W. Niven ...	"Monograph on Aston Hall."
397	Wyatt Papworth...	"Italian and Renaissance Styles of Architecture in Great Britain." List of dated Examples. See also <i>R.I.B.A. Journal</i> .
398	Willis and Clark ...	"Architectural History, University and College of Cambridge. Three vols. and fourth of plates. (Plans of Colleges.)"
399	H. Hall, F.S.A. ...	"Society in Elizabethan Age."
400	J. A. Gotch and W. Talbot Brown	"Architecture of the Renaissance in England." (Batsford.)
401	T. G. Jackson, R.A.	"Wadham College." 4to.
402	R. Blomfield, M.A.	"A History of the Renaissance in England." (Bell.)
403	J. A. Gotch ...	"Early Renaissance Architecture in England."
404	H. I. Triggs and H. Tanner	"Some Architectural Works of Inigo Jones."
405	Caroline Roche ...	"Article on Holland House, in 'Famous Houses of Great Britain.' By A. H. Malan, from 'Pell Mall Magazine.'"
406	Huntingdon Smithson, of Bolsover	"Sundry Draughts and Plans." By M. B. Adams. <i>R.I.B.A. Journal</i> , March 23, 1907.
407	J. A. Gotch ...	"Plans of Houses Elizabeth and James." Paper at R.I.B.A., November 16, 1908. Reproductions.
408	J. Tavenor Perry	"Memorials of Middlesex." Account by Lord Alchester, of Holland House.
409	J. W. M. Halley ...	"Article on Holland House in 'Architectural Review,' with five photos by C. P. Dixon."
410	J. A. Gotch ...	"Inigo Jones's Drawings." Paper at R.I.B.A., March 13, 1911. Reproductions.

DATE.	AUTHOR.	SUBJECT.
1911	Harry Sirr (F.)	"John Thorpe and Roland Strickles, and Architectural Drawings of Their Time." <i>R.I.B.A. Journal</i> , April, 1911; also same January 21, 1911.
	Sir W. H. Cope ...	"Bramshill, its Architecture and History." Quarto. London.
		"National Biography." Lives of Inigo Jones and others. Also Allan and Peter Cunningham Biographies.
		"Architectural Dictionary." Article on Jacobean Architecture.
		Copies of John Thorpe's drawings in Art Library, Victoria and Albert Museum Traced by Richardson. Originals in the Soane Museum.
		Inigo Jones's drawings at R.I.B.A., Conduit-street; Worcester College, Oxford; and Chatsworth (masques). Some reproduced as noticed above.

HISTORICAL NOTES.

THE Office of Works have renovated the interior arrangements and decoration of the Privy Council Offices, Whitehall. Privy Council Offices, together with the chamber in Downing-street used for the sittings of the Judicial Committee, wherein the original coat of varnish has been removed off the handsome oak panelling and its cornice. The Privy Council Offices form the southern portion of the block erected by Soane in 1824-8 for the Privy Council, Board of Trade, and, in the rear, the Exchequer, on the sites of Nos. 1-9, Whitehall, then occupied by the India Board of Control, and the Board of Trade and Plantations—see Marquand and Leverton's plan of 1804—and of the (later) tennis-court that Robert Long, the King's marker, and Captain Cooke, master of the King's tennis-courts, built for Charles II. in 1662-3, over Lord Sandvich's garden on a parcel of land known as the Brake, and after the model of that at Hampton Court. Soane, in 1825, built the Privy Council Chamber and Boardroom—the former having a coffered ceiling divided into four compartments, with lantern lights and two Scagliola columns carrying an ornamented entablature on both sides; the latter, on the west side of the middle corridor, for the Board of Trade, he decorated after the same style, using some ornamentation from the former Boardroom on that site. In 1846-7 Sir Charles Barry stilted and raised the columns, and otherwise altered Soane's south and east façades, and pulled down the east wall, with its buttresses, of the old tennis-court, but retained its west wall, for his extension up to Dover House. The old tennis-court, which Soane left as he found it, though it is often said that he and Barry encased the buttresses, was the Tudor building whose four angle-turrets are conspicuous features in the views of the XVIIth and XVIIIth centuries. Soane's two elevations, Downing-street and Whitehall, with the old tennis-court, are illustrated in our number of January 7, 1905, after a print by Higham. His models for a much more elaborated treatment of the Privy Council section are in his Museum; his own coloured drawing of the old offices is reproduced in the *Builder* of April 29, 1905.

OUR issue of January 7, 1905, contains a reproduction with the addition on our plate of dotted lines to show the positions of modern buildings—of Fisher's plan, 1680, of Whitehall Palace as in 1670, of which Verelue made an engraving. Fisher's survey plots the site of the Great Hall of the Palace which the London Topographical Society propose to mark, as far as is now possible, in the roadway and pavement of Horse Guards-avenue. The avenue traverses the north side of 'the South Court,' the 'Court' of the map ascribed to Ralph Aggas. A reference to Fisher's plan shows that the Great Hall lay between the chapel and the wine cellar—that is to say next east, to that block of the present Board of Trade Offices in Whitehall-yard which was

formerly known as Cromwell House—see also the later plan in our number cited above. The Great Hall had been part of the York Place, which Wolsey ceded to Henry VIII. in 1529-30, and which the Black Friars sold in 1248 to Walter de Grey, Archbishop of York. Hubert de Burgh, Justiciar of England temp. Henry III., bought it for 140 silver marks of the monks of Westminster and bequeathed it to the Black Friars. The Hall was the scene of the court performance of Shakespeare's *Measure for Measure* on the evening of St. Stephen's Day, 1604. The researches of Mr. Walter L. Spiers, F.R.I.B.A., and Mr. Ernest Law show that the upper part of the Tudor-Gothic hall, 100 ft. by 45 ft., stood where is now a raised recess, reached by steps between the two ranges of buildings, east and west of the Board of Trade, and that the lower end—used for the stage—with the screens beneath the minstrels' gallery, stood in the middle of Horse Guards-avenue. In the stone-built basement of Cromwell House may yet be seen four bays, in two aisles, of the vaulted crypt of the wine cellar, whereof Sydney Smirke's description and measured drawings, January 23, 1832, are in *Archæologia*, Vol. xii. Smirke ascertained that the then floor level was 5 ft. 4 in. above the old level. One of the two shields in the spandrels of the doorway bears, *per pale*, the Cardinal's own coat-arms and those formerly borne by the See of York, as on a boss in the vaulting of Christchurch gate, Canterbury (1617).

At a recent meeting of the Society for Promoting Roman Studies Mr. R. H. Forster described the results of the year's excavations. The most important discovery is that of a stone, nearly 6 ft. long, inscribed, the first two words being defaced: "SOLI INVICTO VEXILLATIO LEG. VI. VIC. P.P.F. SVB CVRA SEX CALPVRNI AGRICOLAE LEG. AVO. PR. PR." Calpurnius Agricola, it appears, was Governor of Britain in A.D. 162-5, and led the Sixth Legion's *vexillatio*, as stationed in York, against the Brigantes. It is conjectured that the "Soli Invicto" referred to Heliogabalus

On the crest of East-hill, Wandsworth, and behind the Council Offices at the parting of the two roads to Clapham Common and Battersea Rise, is a small plot of parish burial-ground, known as "Mount Nod." Therein were buried many of the French Huguenots, who, after the revocation of the Edict of Nantes, in 1685, found refuge in the town of Wandsworth, where they successfully plied their native industries, chiefly as hat-makers (including cardinals' hats), and dyers, and calico and silk printers. They worshipped in the (old) French chapel in the High-street, opposite to the parish church, originally built in 1573 by a colony of Flemings, whom Aubrey describes as workers in brass. The chapel gave way in 1882 to the Congregationalists' Memorial Hall. A memorial inscribed with the names of forty Huguenot families has just been erected in the graveyard on East-hill, and unveiled by Mr. Reginald St. Aubyn Roumieu, A.R.I.B.A., President of the Huguenot Society of London. In the Mount Nod was buried, 1720, Peter Paggen, who built the adjacent (old) Manor House on St. John's-hill, after designs attributed to Wren. Of that house, a home for many years of the Princess, afterwards Queen, Anne, there are illustrations in the *Builder* of August 24, 1889.

DURING the course of excavations at Abusir some metal waterpipes embedded in mortar were discovered in the pyramid of King Sahura, built about 2500 B.C. Specimens of this mortar at the age of nearly 4,500 years were analysed, with the result that it was found to contain 45.54 per cent. of calcium sulphate, 41.36 per cent. of calcium carbonate, and 13.10 per cent. of insoluble matter. These proportions agree fairly well with those given by previous analyses of ancient Egyptian mortars.



THE BUILDING TRADE.

THE LONDON CHAMBER OF COMMERCE AND LABOUR UNREST.

THE London Chamber of Commerce have issued a Report of the Special Committee on Trade Disputes, from which it appears that the Committee were appointed to inquire into and report upon "the whole question of the causes and effects of the recent labour unrest and the proper remedies."

The data considered by the Committee were certain resolutions passed by the Council, the General Purposes Committee, and certain of the Trade Sections of the Chamber, and, in addition to the above, certain questions were submitted to members of the Chamber and of certain other bodies, which questions are annexed to the Report. Eight hundred and thirty-one answers were received to these questions, relating to 256,650 workpeople. Certain affiliated and other associations were also consulted.

The Report states that the causes alleged for labour unrest may be divided into four heads:—(a) Social, (b) economic, (c) legislative, and (d) administrative. On these causes we may quote the observations of the Committee:—The root causes of labour unrest appear to be mainly economic. The increased cost of living, the stress of competition at home and abroad, the increasing burden of Imperial and local taxation, and the tendency of modern legislation (intended to promote the interests of the community, but usually involving large additional expenditure) have intensified the difficulties of employers of labour, which in turn must react on wage-earners, who are now feeling the cumulative effect of these burdens. The interdependence of employer and employee, often asserted, has been abundantly demonstrated, and the labour unrest is consequently in the main the outcome of forces affecting both, and of which each must bear a proportionate burden."

From the above statement it would, however, appear that the root causes of labour unrest might more accurately be attributed to both economic and legislative causes.

As to the effects of labour unrest the Committee found the following to be hindrances to employment:—

(I.) Intimidation of employees by workmen or others unconnected with the employer's business; (II.) peaceful picketing; and (III.) absence of proper police protection.

The chief interest in the Report naturally centres in the recommendations of the Committee, after a consideration of the suggestions made to them, of the remedies to be applied.

The Committee, apart from any questions relating to the methods by which employers individually or collectively may determine to carry on their own business, consider that certain remedies may be provided by legislation, and they recommend:—

I. The repeal of sects. 2, 3, and 4 of the Trade Disputes Act.

II. The enlargement of the powers of voluntary conciliation and arbitration under the Conciliation Act, 1896, so as to provide for the enforcement of agreements and awards, and the prevention of lock-outs and strikes being instituted without due notice.

III. That effective provision be made for the maintenance of law and order with legislative action to secure the freedom of labour and commerce.

IV. The repeal of the statutory monopoly enjoyed by certain watermen and lightermen on the River Thames.

The sections of the Trade Disputes Act above referred to are those which legalise peaceful picketing, which render acts done by a person in contemplation or furtherance of a trade dispute not actionable even if they induce some other person to break a contract of employment or interfere with his trade, business, or employment, or with his right to dispose of his capital or labour as he wills, and which prohibit trade unions from being held liable in actions for tort.

The above is only a summary of some of the

main features of the Report, and the recommendations will meet with the approval of a large section of the community; but in granting trade unions a privileged position outside the law a step has been taken by the legislature which will not easily be retraced.

Non-union men are as interested as employers can be in securing freedom for labour, and in this connexion it is to be observed that the Trade Sections are practically unanimous in calling for an inquiry into the working of the Trade Disputes Act, whilst many of them call attention to the systematised efforts that are being made by the unions to compel employers to employ none but union men.

BUILDING ACT REFORM.

THE Building Acts Committee of the London County Council has again had under consideration the question as to an arrangement being agreed to between the County Council and the Borough Councils with regard to buildings and structures to be dealt with by the respective authorities under Part VII. of the London Building Act. In a letter to the Borough Councils, the London County Council's Superintending Architect intimates that experience since the subject was last discussed has confirmed that Committee in the opinion that it would be to the public advantage if an arrangement could be arrived at to define which buildings and structures should be dealt with by the London County Council and the Borough Councils, and inquiring whether the Borough Engineer would be prepared to advise this Council to agree to an arrangement under which such Council would deal, under sect. 84 of the said Act, with buildings within the undermentioned limits, leaving buildings not complying with such conditions to be dealt with by the London County Council:—

Summer houses, tool sheds, coal or wood sheds, fowl houses and runs, pigeon houses, dog kennels, perambulator sheds, cycle sheds, motor car sheds, and other similar structures—

- (a) Not exceeding in area 64 sq. ft.;
- (b) Not exceeding in height 7 ft. in any part measured from the level of the ground to the underside of the eaves or roof plate;
- (c) Distant at least 5 ft.—(i.) from any street, (ii.) from any other building or structure unless there be a non-perforated wall separating the proposed structure for the whole of its length and height from such other building or structure;
- (d) Not having therein any stove, flue, fire-place, hot-air pipe, hot-water pipe, or other apparatus for warming or ventilating the same;
- (e) Not extending in any part thereof within the prescribed distance from the centre of the roadway of any street or way; and
- (f) Not projecting in any part thereof beyond the general line of building in any street or way.

THE PLUMBERS' COMPANY: ANNUAL DINNER.

THE annual dinner of the Worshipful Company of Plumbers was held at De Keyser's Royal Hotel, Victoria-embankment, on Thursday last week, the Rt. Hon. Sir T. Vezev Strong, K.C.V.O., Master on the Company, presiding, supported by the Right Hon. the Lord Mayor, Sir Thomas B. Crosby, M.D., Sir Thomas Barlow, Bart., K.C.V.O., Sir Hugh Owen, Sir Shirley Murphy, Sir B. A. Whitelegge, Dr. A. E. Newsholme (Medical Officer, Local Government Board), Mr. Leonard Stokes (President of the Royal Institute of British Architects), Mr. E. B. Barnard (Chairman, Metropolitan Water Board), Mr. Stanley Machin (Chairman of the London Chamber of Commerce), Professor W. R. Smith (Principal, Royal Institute of Public Health), Professor Bostock Hill (President, Incorporated Society of Medical Officers of Health), Mr. H. Percy Boulnois (Chairman, Royal Sanitary Institute), Dr. F. J. Waldo, Sir Philip Magnus, Mr. C. Hudson (Renter Warden), Mr. Edmund Kirby, and Mr. W. R. E. Coles (the Clerk).

The loyal toasts having been proposed by the Chairman and honoured,

Sir Thomas Barlow, President of the Royal College of Physicians, proposed the toast of "The Lord Mayor, the Corporation, and the Sheriffs of the City of London," the Lord Mayor and Mr. Sheriff G. Briggs responding.

Mr. Leonard Stokes

then proposed the toast of "The Plumbers' Company." He said that the profession to which he belonged owed a great debt of gratitude to the Company. As an architect he had had great dread of the plumber; one was afraid that the lead he used was not of the right thickness, or the pipe not of the proper diameter. There could be no doubt that architects owed a great deal to plumbers, and particularly to the Plumbers' Company, which had done so much to raise the technical skill and knowledge of the trade. Without the work of the Company plumbers would not be half as efficient as they are.

The Master,

in reply said that, although, strictly speaking, he was not a plumber, he was one by grace, and could, from records and upon advice, speak with some authority of the matter which called them together that night. The Plumbers' Company dated back to 1365. Actuated by old traditions, it endeavoured to apply a new significance to old principles. It endeavoured humbly to work in co-operation with the great professions represented there that night. The Guild stood primarily for teaching by a modern adaptation of the old system of apprenticeship, believing, as it did, that knowledge was to a large extent accumulative. The ordinary citizen, when employing a plumber, could not distinguish between good and bad work unless a Company such as theirs came to his aid, and by issuing diplomas and certificates and by giving marks and registrations clearly afforded the means of identifying efficient work. They believed that no system had yet been invented which ought to supersede the old time-honoured system of apprenticeship. Provision was made for the technical and practical instruction of apprentices and young men entering the trade, their examination, and the registration of qualified men who were made responsible to the Company for the efficiency of their work. This system had been greatly strengthened by the marking of Registered plumbers' work. The Board of Trade, under the powers enabling the Board to allow the registration of special trade marks where the Board deem it to be to the public advantage, gave the grant to the Plumbers' Company the registration of a standardisation mark to be used in connexion with the work of Registered plumbers. To ensure the efficiency of the domestic fittings of our sanitary and water services the Board of Trade have also granted the registration of a standardisation mark for fittings of adequate quality to be used as far as possible in connexion with the work of Registered plumbers. This mark is granted to a Joint Committee of Water Authorities to be used under regulations framed by the Board of Trade. The principal trade marks to distinguish proprietary interests in various articles had long been recognised, and it had no doubt gone far to secure the fair interests of producers and consumers. But the Act of 1905 extended this principle in a most beneficial direction by enabling the Board of Trade to allow marks to distinguish articles possessing certain characteristics which any one could supply to the public so long as the article complied with the definite standard of quality indicated by the mark. They might well congratulate the Board of Trade alike on this valuable addition to their statutory powers and their early application of those powers to the protection of the public in the important matters of plumbers' work and of water services. In no case could such protection be more needed. Where considerations of health and the importance of avoiding the great waste and contamination of water are concerned efficiency must be regarded as the first consideration.

The Master also suitably proposed the toast of "Our Guests," coupled with the name of Dr. Bostock Hill, who replied, and the proceedings terminated.

GOVERNMENT CONTRACTS.

The following tenders have been accepted during the past month by the Government Departments named:—*Admiralty, Works Department*.—Works services: Alterations and additions to torpedo store, Portsmouth, and extension of gun battery, Whale Island, Portsmouth.—Mr. S. Salter, York-street, Southampton.—*War Office*.—Works services: Alterations and additions to gun-compressing house, Devonport.—Messrs. J. Lysaght, Ltd., St. Vincent's Iron-works, Bristol; improving accommodation at Woodbridge Haven Coastguard Station.—Mr. F. Bennett, New-street Works, Ipswich; penstocks for new lock and dock, Portsmouth.—Messrs. Stothert & Pitt, Ltd., Bath; steelwork for gun-mounting shop, Haulbowline.—Messrs. J. Westwood & Co., Napier-yard, Millwall, E.; steel tanks for fuel oil storage, Whessoe Foundry Company, Ltd., Darlington. *War Office*.—Works services: Additions to hospital, Hilsa.—Messrs. G. Munday & Sons, 9, Botolph-claydon, E.C.; alterations and additions to married quarters, Traloe.—Mr. P. Murphy, Tulse; annexes to married quarters, Bulford Camp. Mr. F. Burton, Durrington, near Salisbury; erection of officers' mess, etc., Maryhill Barracks, Glasgow.—Messrs. W. Finlayson & Sons, Pilrig Works, Balfour-street, Leith; erection of riding school, Duke of York's Headquarters, Chelsea.—Messrs. E. A. Roome & Co., 36, Basinghall-street, E.C.; extension of dirigible shed, etc., Army aircraft factory, South Farnborough.—Messrs. P. Morton & Co., Ltd., Hamilton Ironworks, Garston, Liverpool; foundations of barrack block, etc., new infantry barracks, Redford.—Messrs. R. C. Brebner & Co., 9, South-street, Andrews-street, Edinburgh; installation of electric light, Quebec Barracks, Bordon.—Messrs. J. B. Saunders & Co., Ltd., 91, York-street, Westminster, S.W.; periodical works services at Taunton.—Messrs. R. W. Pitcher & Son, 6, Marlborough-street, Devonport; provision of Earface Drains, Bournemouth Camp.—Mr. H. Berry, Union-road, Colchester. *Crown Agents for the Colonies*: Bridgework.—Horsley Company, Ltd., Tipton, Staffs.; cement.—Associated Portland Cement Manufacturers (1900), Ltd., 3, Lloyd's avenue, E.C.; Barron's Cement Company, Ltd., 6, Lloyd's avenue, E.C.; Messrs. B. J. Johnson & Co., 4, Eastcheap, E.C.; Messrs. Martin, Earle & Co., Ltd., 139, Queen Victoria-street, E.C.; Messrs. Peters Brothers, 72, Victoria-street, S.W. *Office of Works*: Builders' work, post-office extension, Barrow-in-Furness.—Mr. J. Neal, 170, Ainslie-street, Barrow-in-Furness; finishings (second contract), Block C, Birmingham Telegraph Stores.—Messrs. Richard Fenwick, Ltd., William Edward-street, Birmingham; extension to Glasgow Head Post-office.—Messrs. G. Lawton & Sons, Watt-street, Maryhill, Glasgow; erection of Manchester Post-office.—Mr. C. G. Percival, Newcastle-street, Manchester; reinforced concrete work at Westminster new Public Offices.—Mr. F. G. Minter, Ferry Works, Putney, S.W.; heating, Edinburgh Roseburn Post-office stores.—Messrs. C. Ritchie & Co., 1, Torphichen-street, Edinburgh; National Gallery.—The Midland Heating and Ventilating Company, Ltd., 82, Upper Trinity-street, Birmingham; Western Central District Post-office.—Messrs. Cannon & Jefford, Stanbury road, Peckham, S.E.; roads at Imperial Institute.—Messrs. J. Mowlem & Co., Ltd., Grosvenor Wharf, Westminster, S.W.; wood-block flooring, South-Eastern District Post-office and National Gallery of Scotland.—The Acme Flooring and Paving Company, (1904), Ltd., Gainsborough road, Victoria Park, E.; General Post Office: laying of pipes and sykes ducts in Hull.—Messrs. Greig & Matthews, 35, Queen Victoria-street, E.C. *Metropolitan Police*: Erection of police-court at Woolwich.—Messrs. Patman & Fotheringham, 100 and 102, Theobald's-road, W.C. *Commissioners of Public Works, Ireland*: Alterations to Belfast Central Post Office.—Messrs. T. & W. Lowry, 210, Woodstock-road, Belfast; erection of land registry offices, Dublin.—Messrs. J. & R. Thompson, Ltd., Phillipsburgh-avenue, Fairview, Dublin.

SUGGESTED STANDARDISATION OF COPPER TUBES.

A project has been set on foot in Birmingham, says the *Birmingham Daily Mail*, the adoption of which, it is claimed, will be to the general advantage. It is the standardisation of screwed copper tubes. The Birmingham and District Branch of the National Association of Master Heating and Domestic Engineers are the pioneers in the matter, and they have drawn up a scale of tables of dimensions which will be submitted for consideration at a meeting of the Joint Committee of the National Association, and of the Institution of Heating and Ventilation Engineers (No. 12, Great James-street, Bedford-row, London, W.C.). Should the suggested

tables, which are of three grades—namely, for light, medium, and heavy work—be adopted, they will be forwarded on to the National Engineering Standards Committee. Should that Committee adopt them, either in their entirety or with alterations, they will then become in general use, but in the meantime it may be mentioned that the Birmingham Branch of the National Association of Master Heating and Domestic Engineers has determined to make use of them and test their practical value, though no apprehension of their general utility is felt. They have been carefully thought out and drawn up on lines nearly as possible to the standards now applicable to iron tubing, and after consultation with engineers in London, Newcastle-on-Tyne, Manchester, Liverpool, Bristol, and Leicester, representatives from which are members of the Joint Committee. Owing to the softness of the water now supplied to many of our important cities—and Birmingham is one of them—copper tubes are being much more extensively used in the installation of hot-water supplies than formerly, for the reason that the metal is not as susceptible to the action of the water as is iron. Copper will withstand the action of the water, whereas iron, it is alleged, is subject to perforation by the soft water, though old-time iron pipes are protected by the lining of deposits made when the water supplied was hard. Were copper tubes standardised, the householder, it is stated, would be able to have his repairs promptly and speedily carried out. Besides, manufacturers would be able to keep in stock the different types of tubes all round in accordance with the standards laid down. It is impossible to set out in detail the particulars of the various standards suggested in the three tables mentioned previously, copies of which can be purchased from Mr. J. Durie Kerr, the Secretary of the Birmingham Branch of the Association, at 5, Waterloo-street, but it will suffice to say that they embrace the many and various sizes, strengths, and weights of copper tubes used for domestic and engineering purposes.

LONDON MASTER BUILDERS' ASSOCIATION.

The Council met on December 14, when the President (Mr. G. Bird Godson) occupied the chair.

After receiving and approving the Finance Committee's report the Council proceeded to consider various trade matters.—The National Insurance Bill, the Trade Disputes Act (1906), National Federation communications, and the next issue of the Association Handbook and Diary.

It was decided to hold the annual dinner on Thursday, February 22 next, and the annual general meeting of the Association on the following Thursday (February 29).

Messrs. The Patent Rapid Scaffold Tie Company, Ltd., 124, Victoria-street, Westminster, S.W., was elected an associate member, and the following were nominated as ordinary members:—

Mr. B. E. Nightingale, Albert Works, Albert-embankment, S.E.

Messrs. E. A. Roome & Co., 36, Basinghall-street, E.C.

Messrs. William F. Blay, Ltd., Dartford, Kent.

Messrs. Lole & Co., 12a, Trafalgar-square, Chelsea, S.W.

Messrs. F. & F. J. Wood, 64, Cleveland-street, Mile End, E.

GENERAL BUILDING NEWS.

NEW CHURCH AT PARKSTONE.

The "Church of the Transfiguration" was dedicated last week, and has been erected at a cost of about 800*l*. The architect for the work was Mr. H. Kendall, M.S.A., of Poole, and the seating accommodation of the church is for 240 people.

EXTENSIONS TO CONSETT TECHNICAL INSTITUTE.

The extensions to this institute have been carried out at a cost of about 9,500*l*. from the designs of Messrs. Oliver, Lemon, & Sons, of Newcastle. The new buildings include a large assembly hall and new art-room.

NEW INSTITUTE, KELVEDON.

The plans for this new institute, which was opened last week, were prepared by Mr. J. W. Start, F.S.I., of Colchester. The cost of the building is about 1,050*l*, and the contract was carried out by Messrs. Spalding & Sons, of Norwich.

PROPOSED LIBRARY, BENNEZER, NEAR CARNARVON.

Plans for proposed Carnegie Library have been prepared by Mr. Albert H. Fennell, architect, Chester-le-Street, Co. Durham. It is to

be built of stone in Renaissance style to cost about 2,000*l*.

UNION CASTLE MAIL STEAMSHIP COMPANY'S OFFICES, SOUTHAMPTON.

Extensive alterations have been recently carried out in this building, which was formerly the Southampton Custom House, the buildings having been acquired some time ago by the Union Castle Steamship Company as their Southampton office. The necessities of business demanded considerable increase of accommodation, and with this in view the alterations and additions now completed were undertaken under the direction of the company's local architect, Mr. John H. Blizard, of Messrs. Lemon & Blizard, F.F.R.I.B.A. All the inside partitions of the old building on the ground floor have been removed, and the whole of the area thrown into one large office. The frontage of the new extension was carried out from a design, and details supplied by the company's London architect, Mr. William Flockhart, F.R.I.B.A., with whom Mr. Blizard has been in consultation throughout the course of the works. The heating, ventilation, and electric lighting has been carried out by Messrs. J. Davis & Co., electricians and hot-water engineers, of Southampton—the electric lighting has been done under the direct supervision of Mr. R. A. Munn, the company's superintendent engineer, of Southampton. The heating is on the low-pressure hot-water system with expansion pipes open to the atmosphere. The boiler and radiators are of the sectional type; the temperature is based at 60 deg. Fahr. internal, with the temperature of 30 deg. Fahr. external, the air being changed four times per hour, and in order to accomplish this a 36-in. Blackman's patent exhaust fan is fitted in the roof with an upcast shaft, and is driven from the 200-volt power mains in building; there are also two electric fans provided for lavatory ventilation. The electric lighting is at a pressure of 260 volts direct current from the Corporation's mains. The whole of the wiring is enclosed in solid drawn enamelled steel conduit with screwed joints.

NEW PARISH ROOM, WICKHAM BISHOPS.

This building has been erected from plans prepared by Mr. C. W. Cockham, at an estimated cost of 440*l*. The contract was carried out by Messrs. Hutton & Son, of Birch.

ASHFORD PICTURE PALACE

This new cinematograph hall has been erected from the designs of Mr. A. E. Lacey, A.R.I.B.A., of Ashford, and the building provides accommodation for about 800 people. Besides the auditorium, which has a sloping floor, there is a spacious gallery, including a ladies' room. The contract was carried out by Mr. S. H. Howland, and the electric lighting is by Messrs. Clark & Co.

TRADE NEWS.

The British Thomson-Houston Company, Ltd., manufacturers of the Mazda lamp, are taking steps to bring about a better knowledge of the principles of correct illumination, and have established an Illuminating Engineering Department, the main purpose of which is to give expert advice and guidance on all matters relating to lighting. A striking example of interior lighting is to be seen at the company's London office. The lighting is wholly reflected, no naked lamps being visible. The light is thrown upwards from reflectors enclosed in white earthenware bowls, and reflected from the ceiling. The illumination is shadowless and exactly uniform throughout, there are no dark corners, the effect upon the eyesight is most grateful and refreshing, and there is a complete absence of any sense of eye-strain.

The great west window of the Church of St. Andrew, Boscombe, has just been filled with stained glass by Messrs. Percy Bacon & Brothers, of London, who recently erected the large east window. The window consists of six lights and tracery, and contains a single figure in each light. Reading from left to right, the figures depicted are:—Florence Nightingale, St. Luke, Sister Dora, Charles Kingsley, St. James, and the Earl of Shaftesbury, each with a suitable emblem in a panel below.—A large two-light window has just been placed in the chancel of All Saints' Church, Liverpool, representing the Nativity; the window was executed by Messrs. Percy Bacon & Brothers, of London.

Under the direction of Messrs. Craig, Barr, & Cook, architects, Paisley, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Infirmary Children's School, Paisley.

The Church of England School at Broughton, Hants, has recently been fitted with three of D. O. Boyd's hygienic warm-air ventilating school grates, supplied by Messrs. O'Brien,

Thomas & Co., Upper Thames-street, London, and Excelsior Works, South Bermondsey.

The contract for the construction of a new bridge to replace the existing Pont des Anglais, over that branch of the River Nile at Cairo, known as the Bahr-el-Aama, has been secured by the Cleveland Bridge and Engineering Company, Ltd., of Darlington, at a contract price of £60,000.

The new Council schools, Macclesfield, have been supplied with Shorland's warm-air ventilating patent Manchester grates by Messrs. E. H. Shorland & Brother, Ltd., of Fulsforth, Macclesfield.

WARING-WHITE BUILDING COMPANY, LTD.

This building company, promoted by Messrs. Waring & Gillows, Ltd., and Messrs. J. G. White & Co., Ltd., was incorporated on May 21, 1904, with a nominal capital of 100,000*l.*, more particularly to acquire the benefit of two building contracts which Messrs. Waring & Gillows had entered into in respect of the Ritz Hotel and the pulling down, for recreation, of No. 4, Cockspur-street, and Nos. 18 and 19, Pall-mall East. In 1906 a new company, "Messrs. Waring & White (1906), Ltd.," now the Building Construction Company, Ltd., was registered with a nominal capital of 250,000*l.*, to take over the business. At a meeting of creditors and contributories, held under a winding-up order made against the Waring-White Building Company, Ltd., of Cockspur-street, a statement of affairs was furnished showing unsecured debts of 982*l.* and an estimated surplus in assets of 46,614*l.*

LONDON BUILDING TRADE WAGES.

The various carpenters' and joiners' societies and furnishing trade and cabinetmakers' societies in London have recently made a number of important alterations in their working rules for the London district, and notice of them has been sent to the London Master Builders' Association. The most important of the proposed new rules stipulate for an increase of 1*sd.* an hour in wages, bringing the minimum rate to 1*s.* an hour; a reduction of the working hours in summer from fifty to forty-seven each week, the winter hours to remain at forty-four each week as at present; and double payment for overtime. Six months' notice has to be given to the master builders to terminate existing rules, and it is suggested the new proposals should come into operation on June 8, 1912.

THE GRINNELL SPRINKLER AND FIRE ALARM.

An example of the efficiency and utility of the Grinnell sprinkler and fire alarm has been afforded by the fire which occurred on December 6 at Gilcomston Mills, Aberdeen. A fire originated in the exhaust house of Husk Mill. There was an installation of sprinklers throughout the mills, and ten of them were immediately put in operation by the outbreak. The alarm gong was also automatically set ringing. The protection given by the sprinkler installation was such that very trifling damage was caused by the outbreak, and the owners of the mill, Messrs. John Strachan & Sons, have written to Messrs. Mather & Platt stating that their "high opinion of the Grinnell system has been further strengthened by this practical demonstration of its reliability and efficiency."

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council, the following applications under the London Building Acts were dealt with, the names of the applicants being given in parentheses:—

Lines of Frontage and Projections.

Clapham.—School building with a projecting hood at "Springfield," on the eastern side of Clarendon-road, Clapham (Mr. Leonard Stokes).—Consent.

Finsbury, Central.—Projecting one-story shop in front of No. 219, Goswell-road, Finsbury (Mr. L. G. Dyke for Mr. R. W. Coan).—Consent.

Hackney, North.—External iron staircase, next to Northfield-road, at the Worshipful Company of Skinners' Middle School for Girls, Stamford-hill, Hackney (Mr. W. Campbell Jones).—Consent.

Kensington, South.—Erection of two one-story shops between Nos. 204 and 206, Holland-road, Shepherd's Bush (Mr. A. E. Parsons for Mr. J. Allen).—Consent.

Kensington, South.—Sign at Nos. 8 and 9, Ashburn-mews, Kensington (Messrs. Rawlings Brothers, Ltd.).—Consent.

Kensington, South.—Erection of an addition at No. 53, Princes-gate, Kensington (Messrs. Bull & Esdaile, Ltd.).—Consent.

St. Pancras, North.—Addition at the "Gem Picture Palace," on the north-western side of Wellesley-place, St. Pancras (Mr. J. Codrington for Mr. A. Lett).—Refused.

Strand.—Erection of three illuminated signs at the first floor and the retention of a sign at the ground floor of No. 3, Piccadilly (Messrs. Moreton Phillips & Son for Mrs. R. Freeman).—Refused.

Wandsworth.—Erection of an addition to an existing shop at No. 40, Replingham-road, Southfields (Mr. E. S. Prior).—Consent.

Woolwich.—One-story shop in front of No. 48, Plumstead Common-road, Woolwich (Mr. N. Hoskins for Mr. A. G. Anderson).—Refused.

Width of Way.

Whitechapel.—Erection of a one-story building on the western side of Milward-street (late Cotton-street), Whitechapel, southward of No. 13, Milward-street (Mr. J. G. Oudley for the Governors of the London Hospital).—Consent.

Width of Way, Lines of Frontage, and Construction.

Limehouse.—External reinforced concrete gangways over the public way of Glamis-road, Shadwell, to connect two blocks of the premises of Messrs. Meredith & Drew, Ltd. (Mr. W. G. Drew for Messrs. Meredith & Drew, Ltd.).—Refused.

Strand.—Iron and glass shelter at the entrance to the Coventry and Gambrianus Restaurant, Nos. 13 and 15, Wardour-street, Soho (Messrs. Emden, Egan, & Co. for Mr. R. Baker).—Consent.

Space at Rear and Alteration of Buildings.

Clapham.—Erection of a bathroom addition at the rear of No. 230, Clapham-road, Clapham (Mr. A. C. Nottley for Mr. R. A. Nottley).—Consent.

Formation of Streets.

Wandsworth.—Formation or laying-out of new streets for carriage traffic out of the western side of Putney-hill and the southern side of Chartist-avenue, Putney (Mr. J. C. Radford for Lord Westbury).—Consent.

Uniting of Buildings.

City of London.—Alterations at No. 266, Bishopsgate, City (Mr. H. Knight).—Consent.

City of London.—Opening in the party wall between Nos. 71 and 81, Queen Victoria-street, City (Mr. R. E. Crossland for the Investment Company, Ltd.).—Consent.

City of London.—Uniting of Nos. 69 and 70, Wood-street, City (Messrs. Harris & Sheldon, Ltd.).—Refused.

Holborn.—Openings in the party wall between Nos. 22 and 24, Hutton-wall, Holborn, at the ground and first-floor levels (Mr. T. Coles for the Educational Supply Association, Ltd.).—Consent.

Kensington, North.—Formation of three openings in the party wall between Nos. 101-103 and No. 135, Ladbroke-grove, Notting Hill, at the ground-floor level (Prudential Assurance Company, Ltd.).—Consent.

The recommendations marked * are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERYSTWYTH.—About sixty houses; Mr. Rees Jones, Surveyor, Aberystwyth.

Arbroath.—Additions and alterations to infirmary (8,000*l.*); Dr. Mackintosh, Architect, Western Infirmary, Glasgow.

Aughton (near Ormskirk).—Restoration of parish church (2,500*l.*); Vicar, Aughton.

Blackhills.—Premises for the Station Town Co-operative Society.

Blackpool.—Alterations to Indian Pavilion, North Pier; Mr. F. T. Waddington, architect, 10, Birley-street, Blackpool.

Bonington.—Restoration of flour mills for the North British Railway Company.

Bradford.—Sunday-schools (3,500*l.*); Trustees, Quay Primitive Methodist Church, Bradford.

Dewsbury.—Temporary fire-station, Railway-street (1,500*l.*); Mr. H. Dearden, Surveyor, Dewsbury Town Council.

Garndiffaith.—One hundred and fifty houses; Mr. W. R. Jones, Surveyor, Abersychan Urban District Council.

Garvock.—Laundry, Halibath-road (2,500*l.*); Mr. R. H. Motion, architect, Dunfermline.

Hamilton.—Municipal offices adjoining Carnegie Library, Cadzow-street (2,500*l.*); Mr. W. H. Purdie, Surveyor, Hamilton Town Council.

Ipswich.—Church: Rev. Tyndeman Chilvers, Bethesda Baptist Church, Ipswich.

Laisterdyke.—Enlargement of Sunday-school and erection of parochial hall; Vicar, St. Mary's Church, Laisterdyke.

* See also our list of Competitions, Contracts, etc., on another page.

Leeds.—Boot factory, Woodhouse Carr, for the Co-operative Wholesale Society, Manchester.

Little Irchester.—Alterations and additions to mill for Messrs. Whitworth Brothers.

Llanelli.—Proposed club, near post-office (3,000*l.*); Secretary, Liberal Club, Llanelli.

Lowestoft.—Plans have been passed for three houses, May-road, for Mr. A. E. Clarke; also for workshops, London-road South, for Messrs. Hailey & Sons.

Ludlow.—Drill-hall, riding school, etc., Cattle Market, for the Shropshire Territorial Force Association.

Maldon.—Police station (2,485*l.*); Messrs. W. Gibson & Co., builders, Handon-lane, Finchley, N.W.

March.—Picture palace, shops, and offices, Broad-street, for the Provincial Electric Palaces Syndicate.

Milton.—School, Wimborne-road; Messrs. J. J. Bascombe & H. E. Curtis, Joint Secretaries, Education Committee, Portsmouth Town Council.

Moston (Manchester).—Church (2,000*l.*); Rev. John Fairclough, St. George's Presbyterian Church, Moston, Manchester.

Newcastle.—School, junction of Scotswood-road and George's-road, also school, Rye-hill; Mr. A. C. Coffin, Secretary, Education Committee, Newcastle Town Council.

Nowchapel.—Completion of St. James's Church (1,000*l.*); Messrs. Watkins & Adams, architects, Burslem.

Northfleet.—Cinematograph theatre, High-street, for the Northfleet Cinema Company.

Northwich.—Baths; Mr. J. E. Franck, architect, 11, Pancras-lane, London, E.C.

Oxford.—New Ruskin College, adjoining Worcester College (9,253*l.*); Messrs. R. H. Kingler & Sons, builders, 35, Queen-street, Oxford.

Pollokshaws.—Proposed three tenements, Factory-street; Mr. D. Burns, Surveyor, Pollokshaws Town Council.

Poole.—Additions to Alderney Hospital (850*l.*); Mr. F. Smith, builder, Stratford.

Quorn (near Loughborough).—Additions to premises for Messrs. M. Wright & Sons.

Ravensthorpe (Dewsbury).—Extension to brass works, John-street, for Messrs. E. Richardson & Co.

Reddish.—Additions to Reddish Vale Print Works for the Calico Printers' Association, Ltd.

St. Neots.—Alterations to Wesleyan School (1,555*l.*); Messrs. G. Wrycroft & Sons, builders, Huntingdon-street, St. Neots.

Sheffield.—Church (5,000*l.*); Trustees, St. Catherine's Roman Catholic Church, Sheffield.

Shettleston.—Offices for the North British Bottle Manufacturing Company, Ltd.

Southampton.—The following plans have been passed:—Additions to hall, Bond-street; Messrs. Jenkins & Son.

Southampton.—Alterations and additions to the Ambrose Hotel, St. Mary's-road; Mr. E. W. Young, jun. Shop and motor garage, Portsmouth-road; Mr. W. H. Masters.

Four houses, Nile-road; Messrs. Lemon & Blizard. Four houses, Church-lane and Newton and Wellington roads; Mr. F. Lowe.

Hill-lane and Newlands-avenue, also additions to "Newlands," Lumsden-avenue; Messrs. Jurd & Sanders.

Four houses, Amphill-road; Messrs. Mackintosh Brothers. Six houses, Howard's-grove; Mr. E. Soper. Plans have been lodged as follows:—Additions to the Bellemoor Inn, Bellemoor-road; Mr. C. H. Brightbill. Five houses, Russell-place, and fifteen houses, Abbott's-way; Mr. J. Smith. Rebuilding premises, Above Bar-street; Mr. G. E. Smith.

Southborough.—Almshouses, junction of Yew Tree and London roads, for the Gallard Charities.

Southend.—Completion of All Saints' Church and erection of mission-hall and parish institute (20,000*l.*); Vicar, All Saints' Church, Southend.

Swansea.—Shop frontages, Oxford and Union streets (about 10,000*l.*); Mr. Glendinning Moxham, architect, Swansea.

Walker.—Enlargement of St. Anthony's Roman Catholic School (230 extra places); the Managers.

Warrington.—Extensions to Bolton County School (5,375*l.*); Mr. Harry Fairclough, builder, Fairclough-avenue, Howley, Warrington.

Wells (Somerset).—Alterations to Wells Blue Schools (3,475*l.*); the Governors.

Woodside (Croydon).—Alterations and additions to St. Luke's Parish Church; Rev. Francis Brown, Vicar, Woodside.

Yarmouth (Great).—Extensions to police and fire stations, etc. (3,900*l.*); Mr. J. W. Cockrill, architect, Town Hall, Great Yarmouth.

Houses, Harley-road; Mr. J. S. Read. Plans have been passed for four houses, Suffolk-road, Gorleston, for Mr. R. Wales; and for additions to premises, Southgate-road, for the Yarmouth Stores.

MAGAZINES AND REVIEWS.

The first article in the *Art Journal* of architectural interest is that describing and illustrating Amerongen, the seat of the first Earl of Athlone. Like other Dutch castles, Amerongen has its moat, and is entered through a gated archway and a dignified forecourt. The interesting double bridge is the only means of access from the forecourt to the house. The architect was Cornelius van Rietvelt, who had been assistant to Van Kampen, the builder of the Town Hall (afterwards the Palace) of Amsterdam, "which is so persistently described by admiring travellers as the eighth wonder of the world." The building has somewhat the appearance of an English manor house, and is an interesting example of domestic architecture and decoration. Reproductions are given also of the late XVth-century furniture at Drayton, Northants, and under the title of "Artists as Decorators of English Furniture" reference is made to Angelica Kauffmann, R.A., who was employed by Robert Adam. "The object of Adam from about 1770 was to bring furniture into complete harmony with his mural decoration, and his furniture, painted in light colours and decorated with painted panels, has its exact counterpart in its stucco walls and ceilings inset with compositions by Zucchi (Kauffmann) and other artists. The illustrations of staircases at Drayton, Cassiobury, and elsewhere are of considerable interest. They seem to be given as supplementary to the ones in Mr. Godfrey's book on "The English Staircase" that we reviewed recently.

The *Burlington Magazine* publishes Dr. Josef Strzygowski's lecture on "The Origin of Christian Art," from which we quote the following references to architecture:—

"I leave aside, as sterile germs of form, the Hellenistic basilicas—that is to say, the churches with columns, wooden roof, and exterior atrium—and thus omit the sole type which prevailed in Rome. I concern myself only with vaulted construction which first matured in the West into that fine flower, called by us the Romanesque and Gothic styles. By restricting my theme to this point, I intend to emphasise my conviction that the forms of Oriental art did not reach the West through the Crusades—as has been main-ained—but rather that forms were developed simultaneously both in East and West along parallel lines. Thus, so far as concerns vaulting in particular, long before the Romanesque period, not only in Mesopotamia and Asia Minor, but also in Spain and Lombardy, we can point to the existence of basilica-shaped churches with vaulting; and vaulting is an indication more to be depended on than the type of construction.

I place certain western Gothic churches of Spain beside similar churches in the region of Tur-Abdin in Mesopotamia. San Juan Bautista in Baños was built by Receswinthus in 661. This church has three barrel-vaulted, parallel aisles with the horseshoe arch throughout, and this—let me observe—already in pre-Islamic times. It is, however, their barrel-vaulting which is the essential characteristic of the western Gothic churches, especially when the church is aisleless.

The barrel-vaulting with transverse arches and the horseshoe arch of the Spanish churches are, together with purely stone-construction, the favourite motives of ecclesiastical architecture in Central Asia Minor. I point to the nave of the ruined cathedral of Binbiriklisse, with its horseshoe stone-vaulting and transverse arches. Then, in vaulting to give an idea of the immense variety of construction, I cite another example, an example of the so-called rising barrels which are to be found in the cathedral of Aix-la-Chapelle also. Once more, look at the ground plan and the elevation of one of the churches of Central Asia Minor, with its covered front and almost Romanesque piers with respond shafts, and you will realise how significant it was when Sir William Ramsay and Miss Bell's excavations confirmed my dating of these buildings as regards their types.

The great building movement of the East comes overseas to Ravenna, and onwards, by Milan and Marseilles, and overland by means of the Asiatic and Greek artists who travel westwards in the train of the Goths. Buildings such as the tomb of Theodoric, or later,

the Church of Germigny-les-Près seems to me explicable only in this way. The double-choired churches also, the choir with radiating chapels, and the cruciform basilicas in the place of the tau-shaped churches of earlier date, have their origin in the East. I am of the opinion that the West—Gaul, the Rhine, and the British Isles—shares in the great developments of Christian art in the East. The offshoots of the Eastern Monastic Orders, the Gothic migration, and commerce continue the ancient combination of Celtic and Hellenistic culture. In this way, then, I explain such phenomena as the appearance of similar motives in the East and the West, and I give as an instance of it the bird and fish initials, which occur in Merovingian and also in Armenian manuscripts; and I include the erection of stone crosses, which is common both here in the British Isles and also among the Armenians. What I am leading up to is that we ought to begin to follow up these traces systematically. Means are provided here in England by the founding of the Byzantine Research Fund. England must apply all her energy, so that, just as Dr. Stein has done in Chinese Turkestan, explorations may be made on the Indian frontiers, and especially the north-western border, which the sculptures of Gandhara prove was the centre of a great art movement."

In the *Studio* we find Herman A. Webster's Parisian etchings a little reminiscent of Méryon, but possibly this is inevitable when similar subjects are selected. The effects are broadly and vigorously rendered. Architecture is represented by an illustrated article on recent domestic work, giving examples of the designs of Messrs. Guy Dawber, Leslie Mansfield, and Burkett J. Emery. Some interesting photographs are given of modern French interiors.

The article on "Smoke Abatement," by Mr. T. B. C. Kershaw, in the *Nineteenth Century* first approaches the question from the point of view of the economist, and quotes Sir William Ramsey to the effect that at least a third of the fuel we consume for heating is wasted owing to inefficient methods of use. It then goes on to deal with the failure of the existing legal procedure to cope with this evil, with the fact that the emission of smoke indicates faulty combustion and consequent loss, with work of the voluntary agencies towards securing an improvement, and with the best line of policy towards progress in the future. In view of the marked predilection in this country for the open fire, the author looks towards the discovery of a smokeless fuel, preferably free from volatile sulphur, and necessarily at a marketable price, as the most likely solution of the domestic portion of the problem.

"A Post-Impressionist Scribbler" writes in the *National Review* on the subject of the decorations by Mr. Roger Fry and other artists which have appeared recently on the walls of the Borough Polytechnic. The gist of the article is summed up in the last sentence:—"May the Council of the South London Polytechnic see the mistake made before it is too late, and cause the removal of these diagrams, which can reflect no honour on their makers or their promoters."

The *Century Magazine* has an article on "The New Manila," which should be read by all who are interested in civic development. The preparation of the first scheme was entrusted by the U.S. Government to Mr. Daniel H. Burnham, and this scheme was subsequently carried out with some modifications, under the supervision of Mr. W. E. Parsons, who studied at the Ecole des Beaux-Arts. The article commences with a description of the old Spanish town with its forts and walls, happily retained, and gives an interesting picture of the character of the buildings. We give a few extracts from this:

"Spanish architecture in the Philippines is essentially Spanish Renaissance, modified by the tropical climate and other local conditions. Unlike the architecture of southern Italy, where thick stone walls, pierced with small windows, seem to have been the prevailing protection against heat, the Spaniards felt the necessity of ample ventilation. Consequently, the windows, especially in the living quarters of the upper story, are wide and are shaded with protecting eaves and canopies. Sometimes galleries surround the entire building and form a passageway several

feet in width as an insulation, as it were, against the external heat.

Perhaps in no other country in the world are conchas used as a substitute for window-glass. These shells are flat, nearly round, and average 4 in. in diameter. The edges are trimmed off, so as to leave panes about 3 in. square, and these are set in narrow strips of wood. The shells are, of course, translucent rather than transparent, and the result is a soft opalescent light, very agreeable in a country where the glare of the sky would be intolerable if ordinary glass were used. To obtain the maximum window openings, the sashes are made to slide horizontally on wide sills of hard wood in a manner similar to that adopted by the Japanese. By this means, openings as wide as 12 ft. are obtained.

The ceilings of the interiors are high, as is usual in warm climates. The minimum height allowed by the building laws is 3 metres, or about 10 ft. In buildings of the better class, ceilings of from 15 ft. to 20 ft. are not uncommon.

To realise the splendid resources of the forests of the Philippines, one has only to see the hard-wood flooring in the public buildings and the residences of the better class. These consist of large slabs of mahogany, or, to use the local names, molave, narra, tindalo, and acle, these being of various colours and graining. Frequently the pieces, occasionally as much as 40 in. in width and 40 ft. in length, are laid alternately in dark and light shades."

The article then goes on to describe the methods adopted in laying out the surrounding areas, including a spacious square for the proposed Government buildings in juxtaposition to the old walled town, the new hospital, and the Manila Club. Reinforced concrete has been employed in these works, and its various advantages are dealt with in the following terms:—

"It is fortunate that at the time the improvements at Manila were started the value of reinforced concrete had been demonstrated. While the construction of Spanish times, consisting of heavy masonry for the first story and hard wood for the upper story, was rarely injured by earthquake, still, timber construction is subject to decay and to constant attack from white ants, which do their deadly work in the parts of a structure shielded from view. Of the classes of construction considered suitable in countries where seismic disturbances occur, reinforced concrete has the advantage of being incombustible, as well as comparatively light and not subject to injury by white ants or moisture. Unlike structural steel, most of the work involved in reinforced concrete can be done by unskilled labour, a fact of great importance in a comparatively undeveloped country like the Philippine Islands. Moreover, the materials required are easily accessible, gravel and sand being obtainable in most river beds, steel bars and cement alone being imported. Architecturally considered, concrete is well adapted to tropical countries, where simple wall surfaces, serving as backgrounds for masses of brilliantly coloured foliage, and sometimes relieved with columns, pilasters, and other architectural motives, form a successful architectural treatment.

METROPOLITAN ASYLUMS BOARD.

At the usual fortnightly sitting of the Metropolitan Asylums Board last week the following matters were dealt with:—

Quantities.—Messrs. R. L. Curtis & Sons, of Finsbury-square, were appointed to prepare bills of quantities in connexion with the adaptation, fire-resisting, and cleaning and painting works, to be carried out at the shore buildings at Long Reach Hospital at a commission of 2 per cent. on the amount of the accepted tender.

Park Hospital.—Approval was given to a plan prepared by the Engineer-in-Chief for extending the corridors at the above hospital. It was also agreed to carry out certain drainage works at a cost of 3557.

Fountain Hospital.—A report was received from the Medical Superintendent recommending a number of works for the adaptation of the Fountain Hospital for asylum purposes, and as a matter of urgency it was referred to the Works Committee to carry out.

Downs School.—It was decided to carry out improvements in the heating arrangements at the above school at an estimated cost of 922.

METROPOLITAN WATER BOARD.

THE following matters were dealt with at the meeting of the Board on December 11:

Supplies.—The Accountant's statement on the result of the aggregate collection of domestic meter and building supplies for the six months ending September 30 showed that the following revenue was received:—Domestic supplies, 1,051,904.; meter and bulk supplies, 323,324.; and building supplies, 10,087.; total, 1,385,315.

Hampton Court Palace.—The Works Committee reported having authorised the carrying out by the Board's workmen of the work of providing fire mains, etc., at Hampton Court Palace, at a cost of about 1,370., which will be repaid by H.M. Board of Works.

Contract for River Enlargement Work.—The General Purposes Committee made the following report *re* "Mauder's Contract for River Enlargement Work":—"In connexion with this work, which was in progress during the years 1907, 1908, 1909, and 1910, certain statements have been made which have been the subject of our careful investigation for some time back. A memorandum has been sent to each member of the Board, giving the whole of the information which has come to our knowledge, and we are considering bringing up to the Board, at an early date, recommendations designed to obviate the recurrence of similar administrative difficulties in the future. We recommend—'That our action be approved.'"

Mr. Taylor moved, and Mr. Laurence seconded, an amendment that the memorandum should be published on the minutes, and the mover remarked that the Board had no right to whitewash those concerned.

Sir M. Beachcroft said that neither the Board nor the Committee had anything to be ashamed of.

After further discussion the amendment of Mr. Taylor was defeated; but another amendment was carried, referring the matter back to the Committee.

LAW REPORTS.

COURT OF APPEAL.

(Before Lords Justices VAUGHAN WILLIAMS, BUCKLEY, and KENNEDY.)

Action by Contractors on District Surveyor's Certificate:

Thomas Free & Sons, Ltd. v. Urban District Council of Sutton.

THE hearing of this case was concluded last week upon the application of the plaintiffs for judgment or new trial in the action which was tried before Mr. Justice Lawrence and a special jury in the King's Bench Division. It will be remembered that the plaintiffs, a firm of contractors carrying on business at Maidenhead, brought the action to recover 270*l.*, the amount of a certificate given by the then Surveyor to the Council, Mr. Charles Chambers Smith, for work done by the plaintiffs in making-up and laying-out a road called Grenall-road. The amount of the contract for making-up the road was 967*l.*, odd, and the amount sued for was for an instalment due under the Surveyor's certificate. The contract was dated February 2, 1910. Mr. Chambers Smith being appointed the arbitrator under the contract, and the work was commenced in February and completed in the following May. The first certificate was given on March 10, which was for 240*l.*, due to the plaintiffs on account, and later other progress certificates were given, and the amount paid to the plaintiffs by the defendants. At the time the disputed certificate for 270*l.* was given there was, the plaintiffs alleged, 64*l.* 15*s.* for extras, which left due to the plaintiffs in respect of the contract and extras 269*l.* 12*s.* 6*d.*, and it was in respect of that that the 270*l.* certificate was given. The defendants' case was that there had been collusion between the plaintiffs and Mr. Chambers Smith (who had resigned his position on the Council), and that the certificate in question could not, having regard to the terms of the contract, be construed to be a final certificate, because before the Surveyor could grant a final certificate he had got to measure up and value, which defendants said he had not done. Defendants alleged that no event had happened on which the plaintiffs were entitled to a 90 per cent. certificate, which had been given them, the defendants' contention being that the contract provided that 80 per cent. should be paid to the contractors during the progress of the work when certified by the Surveyor, and that when the matter was finally settled then the maintenance period commenced, when 10 per cent. was to be withheld as a security for what

might happen during the period of maintenance. Defendants alleged that that period never happened under the contract, and that no 90 per cent. certificate could be given until the period of maintenance began. At the trial the learned Judge put two questions to the jury—first, whether the 270*l.* was due to the plaintiffs on May 13 under the contract; and, secondly, did the plaintiffs or the Surveyor know that sum was not due; and the jury answered both those questions in the plaintiffs' favour. Mr. Justice Lawrence, however, held that the certificate in question was not a final certificate, the Surveyor at the time not having expressed his approval of the quantity and quality of the work, and that as the certificate was a progress certificate the defendants were entitled to question it, which they would not have been entitled to do if the certificate had been a final certificate. In these circumstances his Lordship entered judgment for the defendants. Hence the present appeal of the plaintiffs.

Mr. Pollock, K.C., and Mr. McCarthy appeared for the appellants; and Mr. Sheurman, K.C., and Mr. Morton Smith for the respondents (defendants).

Lord Justice Vaughan Williams, at the conclusion of the arguments of Counsel, delivered a judgment allowing the appeal upon the ground that the certificate granted on May 13, although not in the nature of a final certificate was yet one, having regard to the terms of the contract, on which the contractors could sue, it having been duly given by the Surveyor for work and labour done. In his Lordship's opinion, in the absence of fraud and collusion, which had been set up inferentially by the defendants, and which had been directly negated by the verdict of the jury, who found that the 270*l.* was due to the contractors at the time of the granting of the certificate, it was competent for the plaintiffs to bring an action for the recovery of the amount, and, therefore, in his opinion, the verdict of the jury was quite right, and the judgment entered for the defendants ought to be set aside and judgment entered for the plaintiffs for the amount claimed with costs. Lord Justice Buckley delivered a dissenting judgment. In his opinion the judgment of Mr. Justice Lawrence was right, and should be affirmed.

Lord Justice Kennedy delivered a judgment agreeing with the conclusion arrived at by Lord Justice Vaughan Williams, and the appeal, therefore, by a majority of the Court, was allowed, and judgment entered for the plaintiffs for the amount claimed, with costs.

Upon the application of Mr. Morton Smith, a stay of execution was granted upon terms till January 31 next, to enable the defendants to consider whether they would appeal to the House of Lords.

KING'S BENCH DIVISION DIVISIONAL COURT.

(Before Mr. Justice COLERIDGE and Mr. Justice BURNETT.)

The Euston-road Building Line: London County Council v. The Metropolitan Railway, the Midland Railway Company, and Others.

THIS matter came before their Lordships on a case stated by the Tribunal of Appeal under the London Building Act, 1894.

Mr. Daldy, for the County Council, said he proposed to ask the Court to remit the case to the Tribunal. It would only be necessary to mention the facts very briefly. The case related to the building line in Euston-road, and raised the same points as in the case of *Fleming v. The Metropolitan Railway* (1911 Appeal Cases, 1), in which it was laid down that the building line was to be settled after taking into account all the circumstances, and not merely the line of the houses or the edge of the pavement. The part of Euston-road between Churchway and Ossulton-street was in question, and the case had stood over for eighteen months, until the decision in *Fleming's* case should be known, and it affected many other parties besides those now before the Court. The Metropolitan Railway wanted to do certain works, and the question arose whether the general line of buildings ought to be taken along the main fronts of the houses or along the edge of the pavement. If it was to be taken along the edge of the pavement, the railway company were really right, but if the line was to be taken along the main front of the houses, they were not entitled to do what they wanted. The case stated that the Tribunal of Appeal were, when the matter first came before them, of opinion that they had simply to open their eyes and see what was on the ground in order to decide the general building line.

Mr. Justice Horridge: The question now is, What is the building line, having regard to the decision of the House of Lords?

Mr. Daldy: Yes. The Tribunal of Appeal thought they were bound by the decision of the Divisional Court in *Fleming's* case; but that was overruled by the Court of Appeal and House of Lords. In these circumstances he (Counsel) asked the Court to make the following order:—"The Court being of opinion, having regard to the decision of the House of Lords in *Fleming v. Metropolitan Railway*, that the Tribunal of Appeal were not right in taking into account all the buildings and additions without regard to the circumstances in which they were erected, the order of the said Tribunal to be set aside, and remit the case to the Tribunal to be further dealt with."

Mr. A. A. Bethune, for the Metropolitan Railway, agreed, and their Lordships made the order accordingly. No order as to costs.

OFFICIAL REFEREE'S COURT. (Before Mr. M. MUR MACKENZIE.) Dispute over Reconstruction Work: Densham v. Banbury.

MR. MUR MACKENZIE, on December 19, delivered a considered judgment in an action of *Densham v. Banbury*, this being a claim by Mrs. Mary Densham, widow and executrix of the late Mr. William Densham, and of 14, Park-street, Devonport, against Mr. Henry Banbury, of Somerset-place, Stoke, Devonport. The claim at the outset was for 238*l.* 12*s.* 9*d.*, balance of an account due for work done and materials supplied at Wisteria-terrace and Montpelier-terrace, in Devonport—in what is known as the District of Penryn-cross.

The hearing of the case lasted several days in London.

Mr. B. Lailey (instructed by Messrs. Cox & Lafone, London agents of Messrs. Rundle & McDonald, solicitors, of Devonport) appeared for the plaintiff, the executrix, and Mr. Mallinson (instructed by Mr. George W. Davey, of John-street) presented the defendant. Mr. Richard Hansford Worth, M.Inst.C.E., a Devonport architect and engineer, and Mr. George Taylor, a local builder and contractor (a witness as to valuation of the deceased's work), were amongst the witnesses called by the plaintiff; Counsel during the hearing, Mr. Arthur Vercoe, A.R.I.B.A., of Messrs. Percival & Vercoe, architects and surveyors, of Plymouth, and Mr. Smith, a contractor, were amongst those giving evidence on behalf of Mr. Banbury.

Mr. Muir Mackenzie, in the course of his judgment, pointed out that the defendant, Mr. Banbury, owned twenty-one houses in Wisteria-terrace, having purchased them for 50*l.* a house each, including the land on which they were built. Mr. Densham, the deceased man, a house painter and decorator, was employed by the defendant to put them in repair, so as to satisfy the local authority. The deceased did also work at some houses on the opposite side—Montpelier-terrace—but there had been a dispute as to what the work was, and it was much less in amount than that done on the other side. Two small sums had been paid by the defendant before the death of Mr. Densham in June, 1902, after the sending in of an account. After that date thirty-six payments had been made during the period from May 22 to July 1, 1903, and the executrix by Mr. Banbury. In 1910 the defendant disputed the account, and said he would pay no more. Subsequently it had been suggested that Mr. Taylor should inspect the buildings to make a valuation, and he did so, accompanied by the defendant and his son. Mr. Taylor's valuation of 460*l.* was not accepted by the defendant, who employed Mr. Smith, who valued it at 241*l.* 2*s.* 1*d.*; but in his valuation he had valued certain things omitted by Mr. Taylor, and the omitted items, when they were afterwards brought to his attention, came to 13*l.*, which would make Mr. Taylor's total estimate about the same as the amount of the account originally sent in to Mr. Banbury by the deceased.

There had been, the Official Referee continued, an extraordinary amount of contradictory evidence, both as to the value of the work and the work that was done. On behalf of the plaintiff reports had been presented concerning the sanitary condition of certain of the houses in question in 1899. As to the surveyors' reports, he (the Referee) found that they were made at the time in matters investigated by persons who made them, and made in pursuance of a sanitary duty imposed on those persons to make those investigations. It had been said in that Court that before this work was done certain of the houses in question were so badly built and dilapidated in 1899 that proceedings were taken under the Act and thorough reconstruction made. The walls had been crumbling down in many cases. Some of the houses had been infested, in 1899, with rats, and altogether they had presented, in 1899, "a condition of ruinous

border which could not be beaten by the oldest of houses in the oldest town." The Official Referee was quoting a sentence from a municipal report of a document of about the period, a document to which Mr. Lailey had referred. Remarking that he had to decide what weight should be attached to the account sent to the defendant by Mr. Denham—he being now dead—the Official Referee said that he must treat that as a *prima facie* fact that it correctly stated the amount of the work. The defendant, who had always challenged the amount, had been absolutely careless in statements, having given conflicting stories on oath, and it would not be right to rely on his evidence. He also regarded the evidence of Mr. Banbury, jun., as unreliable. He found that much more work was done for these houses than Mr. Banbury, sen., or Mr. Banbury, jun., or even Mr. Taylor put down in his notebook. Although less was done on the Montpellier side, the work there went on longer. The result of his conclusions was that sum of 255*l.* 5*s.* 3*d.* should be awarded to plaintiff.

Mr. Lailey: I take it, sir, that judgment or that sum will be filed in the Devonport District Registry?

The Official Referee: That will follow as matter of course.

OBITUARY.

M. P. F. Honoré Daumet.

We regret to announce the death, on December 14, of M. Pierre F. Honoré Daumet, member of the Institut de France and Royal Gold Medalist, 1903, who was born on October 1825. M. Daumet, a pupil of Gilbert and Blot, entered the École des Beaux-Arts in 1845, and won the Grand Prix de Rome. He was attached, in 1861, to an exploratory mission in Macedonia, and drew the report. In the next year he was made Inspector of Works, Prefecture of Police; in 1867 he was appointed Acting-Architect to the Palais de Justice, and in 1877 succeeded Le Duc as Architect-in-Chief. In 1879 M. Daumet became Architect to the second division, Travaux Départementaux; on retiring from that post he was appointed Honorary Architect-in-Chief to the Department of the Seine. He was Honorary Inspector-General, Bâtiments Civils, Vice-President, Commission des Monuments Historiques; Architect to that Commission for the Temple of Augustus, and a restoration of the Church of St. Pierre, Paris, and the Theatre Orange; Vice-President of the Council of Architecture, and Official Architect, Cour d'Appel, Paris. Past-President, Société Centrale des Architectes Français; President of the Committee of the International Congress of Architects, in which capacity he presided at a meeting of the Committee in October last in Rome; and Honorary Corresponding Member of the Royal Institute of British Architects (1885). In 1885 he is elected a member of the Académie des Beaux-Arts; in 1900 he was advanced as a Commander. He was also, from Officer, in 1902. He was also Commander of the Order of Alfonso XII. of Spain, and Knight of the Order of Pius IX.

For a period of twenty years M. Daumet collaborated with the late Duc d'Aumale, for whom, in 1876-81, he restored Chantilly; in respect of his work thereon, the Institut de France awarded to him the Raynaud prize; was nominated as a joint architect, 1865, the Asile des Aliénés de Ste. Anne; he was architect of the Palais des Facultés and the Palais de Justice, Grenoble; to the Dames de Sion, for their chapels and pensions in Paris and Tunis; and of the "Eccle Homo" chapel, Jerusalem. His restoration of theâteau, St. Germain-au-Laye, is commemorated by a tablet, with portrait (illustrated in the *Builder*, August 4, of the current year), presented to him by past students of his atelier upon the fiftieth anniversary of the day its foundation: the tablet is by M. Denys Roch and M. D'Espouy. A portrait of Daumet was published in our issue of 27, 1908.

Colonel Seddon, late R.E.

The death, on December 8, is announced of the late Henry Cooper Seddon, late Royal Engineer, aged seventy-four years. As Assistant Engineer, and Instructor in 1879-85, for Construction at the School of Military Engineering, Chatham, he was the first officer of his age appointed to instruct in measuring, estimating and general builders' work, for which he framed the entire course of instruction. He was chief of the Designing Branch Barracks at the War Office in 1879-82, and of a large number of brigade depôts in

pursuance of the Military Forces Localisation Act, and made the plans for the Household Cavalry Barracks, Knightsbridge, and the Victoria Barracks, Portsmouth. He was Assistant Examiner in Building Construction, Science, and Art Department, in 1870-5, and Examiner in 1875-1900, and Examiner in Engineering Subjects, Civil Service Commission. After his retirement from the Army in 1887 Colonel Seddon practised for a few years in London as an architect and engineer; he was architect to the City of London Electrical Lighting Company, for whom he built their workshops and transforming stations, and he designed and carried out the Ham District Council's sewerage and drainage systems. He became surveyor for Lord Dysart's trustees in Surrey, Leicestershire, and Lincolnshire, eleven years ago. He published "Builders' Work and the Building Trades" and prepared the second and third editions of Colonel Wray's "Instruction in Construction," for use of the Royal Engineers, and the "R.E. Aide-Mémoire."

Mr. W. Griggs.

Mr. William Griggs, who died on December 7, at Worthing, in his eightieth year, was the pioneer of a development of photo-chromolithography for illustrative purposes. In 1851 he entered the service of the Hon. E. I. Company, and in 1855 became Technical Assistant to the Reporter on Indian Products, at the Museum, which, in 1878, was removed from the India Office to South Kensington. He made notable improvements in photo-zinographical processes as first employed by Samuel Cousins, mezzotint engraver, and established his works at Peckham. He brought out reproductions of the Shakespeare folios; a book of "Specimens of Illuminated MSS. in the British Museum" (1903); "Asian Carpet Designs," containing 150 coloured plates, at a cost of about 4,000*l.*; and fifty copies of the Mahabharata, or Patanjali's commentary on the Purnyana standard authority on the Sanskrit grammar, at a cost less by 6,000*l.* than an estimate for tracing the original MS. by hand. Mr. Griggs conducted the *Journal of Indian Art*, begun in 1874, and a serial. "Portfolio of Industrial Art to Illustrate Oriental, Arabian, Italian, and Spanish Decorative Art"; he also illustrated a volume, "The Relics of the Honourable East India Company."

LONDON COUNCILS.

Barnes.—The Surveyor has been directed to prepare a plan, etc., for making-up part of the Shaishab-road, Mortlake. Subject to a contract, the offer of the Roadmaster Company, Ltd., to provide and lay roadmetal in a part of Kook's-lane, at 5*s.* 8*d.* per yard super., and to maintain same for five years, has been accepted. The question of widening Upper Richmond-road and Barnes High-street has been referred to the Highway Committee for consideration. A scheme is to be prepared by the Surveyor for the erection of a swimming-bath with ten slipper baths. Plans have been passed for Mr. A. Harvey for motor garages in Madrid-road.

Bermondsey.—Messrs. B. Finch & Co., Ltd.'s, tender has been accepted at 27*l.* 10*s.* for replacing the urinal at Lavender-bidge.

Hampstead.—A portion of the sewer running northwards from Broadhurst-gardens is to be repaired at an estimated cost of 824*l.* A new sewer is to be constructed in connexion with the Town Hall extension at an estimated cost of 125*l.*

Holborn.—No objection is to be raised to a proposal of Mr. W. Mats to erect buildings on the east side of Baldwin's-place.

Islington.—Part of the wood carriage-way of Highbury-grove is to be repaved at an estimated cost of 310*l.* Repairs are to be carried out to the following roads at the estimated costs mentioned:—Stanley-road, 103*l.*; Beresford-road, 191*l.*; Highbury-place, 188*l.*; Hertsgate-road, 118*l.*

Malden and Coombe.—The Urban District Council have accepted the tender of Messrs. E. & E. Iles, Wimbledon, at 543*l.* 19*s.*, for kerbing, channelling, and paving with tar macadam portion of the roadway of Coombe-road; also the tender of Messrs. J. Wainwright & Co., Ltd., Shepton Mallet, at 97*l.* 14*s.* 4*d.*, for paving the footways with artificial stone slabs and maintenance thereof.

Richmond.—The tender of the Improved Wood Pavement Company, Ltd., has been accepted at 192*l.* 11*s.* for the necessary wood-paving required in connexion with the widening of George-street. The Council have appointed Mr. A. F. Brown, at a fee of 100*l.*, to undertake the whole of the work required in the first stage of the Richmond Town-Planning Scheme. The following plans have been

passed:—Mr. S. D. Gough, five houses, Ennerdale-road extension; Messrs. Brewer, Smith, & Brewer, extensions to music warehouse, Red Lion-street; Mr. W. W. Courtenay, four houses, Leyborne Park.

Tottenham.—Plans have been passed as follows:—Mr. G. E. T. Laurence, school, Downhills, Keston-road; Mr. A. Porter, addition to factory, Tariff-road, for Messrs. Prestwich; Mr. W. J. Burstow, eight houses, Sherringham-avenue.

Westminster.—Consent is to be given to the Army and Navy Co-Operative Society, Ltd., 1, Howick-place, S.W., to erect in Gatliff Wharf, Pimlico, a sawmill and workshops.

PATENTS.

APPLICATIONS PUBLISHED.*

27,250 of 1910.—The Douglas Manufacturing Company, Ltd., and William Meaby: Door bolts and fastenings of a like character.

27,465 of 1910.—Mrs. Ernestine Lefevre, née Bastard, and Lucien Franchement: Portable stone-saw.

28,545 of 1910.—Moses James Adams: Flushing arrangement.

28,996 of 1910.—Robert Thompson and William Affleck Thompson: Walls.

648 of 1911.—William Gilbert: Mixers for Portland cement and the like.

1,893 of 1911.—James Muirhead: Ventilating appliances for buildings.

2,339 of 1911.—Charles Hart: Storage tanks of hot-water systems.

3,665 of 1911.—Edwin Oscar Smith: Anti-rattling device for sliding doors and the like.

2,906 of 1911.—Miroslaw Matgorzewicz and Joseph Krynski: Door locks.

4,902 of 1911.—Thomas Glover: Construction of elbow or bend for metal pipe flues or the like.

7,157 of 1911.—Arthur Wingfield Colenutt: Multiple-bolt fastenings for doors and the like.

8,622 of 1911.—William Henry Rymer: Flexible coverings for roofs, walls, and the like.

10,026 of 1911.—Harry Conklin Trill: Boiler-furnaces, grates, and the like.

11,930 of 1911.—Gunnar Richard Tellander: Ventilation valve.

11,960 of 1911.—George Field: Ventilators.

14,751 of 1911.—George John Money: Fastening devices or latches for doors, windows, or the like.

15,727 of 1911.—Heinrich Bebié: Device for fixing windows, window-shutters, and doors in open position.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 5.—By Wm. & Walter James: Pentonville Brecknock, Abernethy Estate, 27*s.* 6*d.* p. f. 24,680

December 7.—By INKSON & JOPLING: Pickhill-with-Roxby, Yorks.—Holme Lodge and Park House Farm, 73 acres, f. 3,250

By FRANK LLOYD & SONS: Llangollen, Denbigh.—The Grange and 10 a. 1 r. 34 p. f. 2,800

December 8.—By E. S. BEARD & DANIEL: Brightlingsea, Essex.—86 and 88, New-st. f. 850

December 11.—By BEALE & CAPPS: Notting Hill.—Princes-rd., Earl of Zetland p.h., ut. 33 yrs., g.r. 13*l.*, y.r. 100*l.* 1,350

By GILBERT & HOW: Stroud Green.—41, Ossian-rd., ut. 70 yrs., g.r. 8*l.*, 10*s.*, e.r. 46*l.* 325

By GEO. E. LUCE: Crouch End, Waverley-rd., Oakmead, ut. 58 yrs., g.r. 1*l.* 10*s.*, p. 1,600

By FRED VARLEY & SON: Finsbury Park. 69, Wilberforce rd., ut. 55 yrs., g.r. 5*l.*, e.r. 48*l.* 855

29 St. Thomas-rd., ut. 51 yrs., g.r. 7*l.*, w.r. 65*l.* 9*s.* 200

December 12.—By FLEURET, ADAMS, & HAXELL: Kilburn.—High rd., Lord Palmerston p.h., lease for 66 yrs. at 250*l.*, with goodwill and possession 21,100

Ongar, Essex. Bell Inn, f., y.r. 20*l.* 900

Brantree, Essex. Bird-in-Hand, p.h., f., y.r. 20*l.* 1,350

Messing, Essex.—Oak p.h., c., y.r. 16*l.* 775

By HASLET: Deptford, Broadway, Old Fountain p.h., lease for 15 yrs. at 325*l.*, with goodwill and possession 3,300

By MARSH & MARSH: Hanwell. 48, Church rd., ut. 81 yrs., g.r. 7*l.*, y.r. 35*l.* 220

Pinhoe. 114, Lillingdon-st., ut. 14 yrs., g.r. 6*l.* 13*s.* 6*d.*, y.p. 40*l.* 115

Lillingdon-st., f.g.r. 11, reversion in 22 yrs. 120

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

RECENT SALES.—continued on page 762.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xv.; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary. The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* * It must be understood that the following paragraphs are printed as news, and not as advertisement; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

DECEMBER 29.—**Glasgow.**—DESIGN FOR A BRIDGE.—Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of £60, and £20, are offered. See advertisement in issue of December 24, 1910, for further particulars.

DECEMBER 30.—**Armadale.**—Public hall and offices, to cost £2,500. Premiums of 15l. and 10l. Open only to architects who were represented on the site on October 12.

DECEMBER 30.—**Hastings.**—EAST SUSSEX HOSPITAL.—Premiums of 125l., 75l., and 50l. Mr. E. T. Hall, F.R.I.B.A., Assessor.

DECEMBER 30.—**Welsh Litteredford, 1912.**—DESIGN FOR WORKMEN'S DWELLINGS.—Prize, 50l. Particulars from Welsh Housing Association, 9, Temple-chambers, E.C.

JANUARY 1, 1912.—**Rochdale Infirmary.**—EXTENSIONS.—Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 3.—**Bolton.**—MINERS' FEDERATION HALL AND OFFICES.—Limited to architects within twenty-five miles of Bolton. Premiums, 50l. and 25l. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Harding & Fernihough, 7, Fold-street, Bolton.

JANUARY 6.—**Stafford.**—PUBLIC LIBRARY.—The Stafford Corporation invite designs for a Public Library. Mr. Henry T. Hare, F.R.I.B.A., assessor. Second and third premiums of twenty and forty guineas. Deposit, 1l. Particulars from Mr. W. Plank, A.M. Inst. C.E.

JANUARY 8.—**Banbury.**—WORKMEN'S DWELLINGS. The Banbury T.C. invite designs for workmen's dwellings. See advertisement in issue of December 8 for further particulars.

JANUARY 9.—**Magherafelt.**—TECHNICAL SCHOOL.—Particulars from Mr. W. D. Cousins, County Technical Office, Court-house, Coleraine.

JANUARY 9.—**Spennymoor.**—PUBLIC HALL, ETC.—The Spennymoor U.D.C. invite competitive plans and designs for a public hall, market, and offices, etc. Three premiums are offered. See advertisement in issue of December 1 for further particulars.

JANUARY 29.—**Montevideo.**—Government palace (premiums, 2,125l. and 500l.) and town improvement scheme (premiums, 1,060l., 640l., and 425l.). Conditions may be seen at the Board of Trade, 75, Basinghall-street, E.C.

JANUARY 31.—**Australia.**—DESIGNS FOR FEDERAL CAPITAL CITY.—The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 598, November 8.

FEBRUARY 3.—**Bolton.**—NURSES' HOME AT THE INFIRMARY.—Premiums of 30l., 20l., and 10l. Assessor, Mr. John B. Gass, F.R.I.B.A.

FEBRUARY 17.—**London, E.C.**—NEW OFFICES.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity-square, and for laying out remainder of land as a building site. See advertisement in issue of November 24 for further particulars.

MARCH 15.—**Prestatyn, North Wales.**—LAYING-OUT ESTATE.—Lord Aberconway and the Trustees of the Prestatyn Estate invite designs for laying-out of the estate. Three premiums are offered. See advertisement in this issue for further particulars.

MAY 1.—Society of Architects' Travelling Studentship. Design for a Town Hall, 25l. and medal.

JULY 1.—**Dusseldorf.**—A plan for the extension of the City of Dusseldorf. Premiums of 1,000l. to 375l. Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 23.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in Competition News, December 1, page 635.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 22.—**Manchester.**—ALTERATIONS.—For mess-room alterations at the Golf House, Heaton Park. Specification and drawings from the City Architect, Town Hall. Deposit of 10s. 6d.

DECEMBER 22.—**Panteg.**—STORE.—Erection of a mobilisation store for No. 3 Battery, Monmouthshire R.F.A., at Panteg. Plans and specifica-

tions seen, and quantities from the architect, Mr. E. Maples Linton, Westgate-chambers, Newport, Mon., on deposit of 1l. 1s.

DECEMBER 23.—**Huddersfield.**—DWELLING.—For erection of thirty-eight workmen's tenement dwellings, Wakefield-road, Molegreen. Plans, specifications, and general conditions seen, and quantities and forms of tender from Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer and Surveyor, 1, Peel-street.

DECEMBER 23.—**Morley.**—WAREHOUSE.—Erection of rag warehouse, South-street, for Messrs. Barron & Co. Plans and specifications seen, and quantities from Mr. T. A. Butler, Lic.R.I.B.A., architect, 4, Queen-street, Morley.

DECEMBER 23.—**Tonypetall.**—HALL.—For erection of a church hall on the Tyche Isha Estate at Good Elys. Plans and specifications from Messrs. A. Thomas & G. S. Morgan, engineers and architects, Pontypridd.

DECEMBER 23.—**Wilmington.**—CHIMNEY, ETC.—Erection of a chimney, coal mill, and foundations for kiln, for Messrs. G. & T. Earle, Ltd., at Cement Works, Wilmington, Hull. Quantities from Messrs. W. S. Walker, F.R.I.B.A., & Son, architects, 77, Lowgate, Hull.

DECEMBER 26.—**Runcorn.**—WATER-CLOSETS.—For the conversion of about 1,000 privies into water closets. Particulars and forms of tender from Mr. James Wilding, Surveyor and Water Engineer to the Council, Town Hall, Runcorn.

DECEMBER 28.—**Guilford.**—ALTERATIONS.—Alterations to premises, No. 2, Prospect-street. Drawings, etc., from Mr. J. Earnshaw, architect, Carlton House, Bridlington.

DECEMBER 28.—**Guilford.**—STORE, ETC.—For brickwork and slating for the new coal store; supply of materials for and erection of an exhaustor house. Specifications from Mr. P. C. Cleash, Gasworks, Guilford, on deposit of 1l. 1s.

DECEMBER 29.—**Lockwood.**—SHED.—For erection of a new shed, etc. Plans seen, and quantities from Messrs. Lunn & Kaye, architects and surveyors, Huddersfield.

DECEMBER 30.—**Dewsbury.**—ADDITIONS.—For additions to three residences in Oxford-road. Drawings and specifications seen, and quantities from Messrs. Joseph Firth & Son, architects, 67, Valence-road, Dewsbury.

DECEMBER 30.—**Haddenham.**—SCHOOL.—For erection of a new elementary school. Deposit of 1l. 1s. to Mr. C. G. Watkins, Secretary, Education Office, Aylesbury.

DECEMBER 30.—**Ilkley.**—VILLAS.—Erection of semi-detached villas. Plans seen, and quantities from Mr. W. H. Marten, Lic.R.I.B.A., 3, Cookridge-street, Leeds.

DECEMBER 30.—**Manerghyn.**—HOUSE.—Erection of a new farmhouse. Plans and specifications from Mr. E. Howarth, Lic.R.I.B.A., architect and surveyor, Tynon and Barmouth.

DECEMBER 30.—**Raasay.**—HOUSES.—Erection of thirty-six workmen's houses in the island of Raasay, for Messrs. Wm. Baird & Co., Ltd., Garthsherrie. Plans with the architect, Mr. James G. Falconer, at Cameron-square, Fort William, and 22, Alexandra-place, Oban.

DECEMBER 30.—**Shoreham.**—FRONTAGE.—For construction of about 64-ft. run of (timber) frontage in continuation of present Free Wharf. Plans and specification from Mr. Cranfield Bagley, Clerk to the Trustees, Harbour Offices, Southwick, Brighton.

DECEMBER 30.—**Truro.**—RESIDENCE.—Erection of a new residence at Castle-street. Plans and specifications from Mr. Alfred J. Cornelius, M.S.A., architect, Truro.

JANUARY 1, 1912.—**Threlkeld.**—OFFICES.—For construction of out-offices at Threlkeld C.E. School. Plans and specifications at Blanketins Sanatorium. Dr. Goodchild, Threlkeld, Cumberland.

JANUARY 2.—**Ballymote.**—STORES.—Erection of stores at creamery, for the Ballymote Agricultural and Dairy Society. Plans and specification with Mr. J. J. Cooke, Manager.

JANUARY 2.—**Great Yarmouth.**—SCHOOL.—For erection of new art school on Trafalgar-road. Plans and specifications seen, and quantities from the Borough Surveyor, Town Hall, Great Yarmouth.

JANUARY 2.—**Plymouth.**—ALTERATIONS.—For alterations at the Workhouse. Plans and specifications with the architect, Messrs. Thornely, Rooke, & Barron, 11, The Crescent, Plymouth.

JANUARY 3.—**Braughing.**—COTTAGES.—For erection of four cottages. Plans and specification from the Council's Offices, 29, North-street, Bishop's Stortford. Particulars from Mr. E. T. Watts, surveyor, Letchworth, Bishop's Stortford.

JANUARY 3.—**Bridgwater.**—COTTAGES, ETC.—Erection of three pairs of semi-detached

cottages, one detached cottage, and out-buildings on the Bridgwater Estate. Form of tender and quantities from the Borough Engineer, Town Hall, Barrow-in-Furness.

JANUARY 3.—**Low Bradfield.**—FILTER-HOUSE.—For erection of new filter-house at Low Bradfield, near Sheffield. Drawings and conditions of contract seen, and quantities and forms of tender from the City Architect, Town Hall, Sheffield.

JANUARY 3.—**Sheffield.**—FURNITURE EXCHANGE.—Erection of Sheffield Afterlife, new Telephone Exchange. Drawings, specification, and a copy of the conditions and form of contract at Sheffield. Form of contract at Sheffield. Bill of quantities and forms of tender, on deposit of 1l. 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

JANUARY 4.—**Buglawton.**—SCHOOL.—Erection of Council school at Buglawton, near Colleton, Cheshire. Plans and specifications from Messrs. Alfred Price & Son, architects, Sandbach. Quantities on deposit of 1l. 1s.

* JANUARY 4.—**Derby.**—OFFICES.—The Directors of the Midland Railway Company invite tenders for additional offices for telegraph superintendent. See advertisement in this issue for further particulars.

* JANUARY 4.—**Donstable.**—SCHOOL EXTENSION.—The Bedfordshire Education Committee invite tenders for additions to the Chiltern-road School. See advertisement in this issue for further particulars.

* JANUARY 4.—**London, N.W.**—EXTENSION OF POST OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of sorting-office, Hampstead. See advertisement in this issue for further particulars.

* JANUARY 5.—**Barking.**—SCHOOL.—The Barking Town U.D.C. Education Committee invite tenders for an elementary school in Ripple-road. See advertisement in this issue for further particulars.

JANUARY 5.—**Edenbridge.**—SCHOOL.—Erection of a special subjects building. Plans and specifications by the Committee's Architect, Mr. W. H. Robinson, M.S.A., Caxton House, Westminster, S.W. Quantities on deposit of 1l.

JANUARY 5.—**Edenbridge.**—OFFICES.—For extension of the Girls' Home, Ashley-road, Hale, into public offices. Plans seen, and information from the architect, Mr. E. H. Brazier, 4, Park-chambers, Ashley-road, Hale.

Quantities and form of tender, on deposit of 1l. 1s., from Mr. J. G. Whyatt, Clerk to the Council, Council Offices, Ashley-road, Hale, Cheshire.

JANUARY 5.—**Portsmouth.**—POST OFFICE.—Demolition of old premises, and the extension of the new Post Office. Drawings, specification, and a copy of the conditions and forms of tender, on deposit of 1l. 1s., from the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

JANUARY 5.—**Wellington.**—SCHOOL.—Erection of a new Council school, to accommodate 350 scholars, at Bexley, Wellington, Kent. Plans and specifications by the Committee's Architect, Mr. W. H. Robinson, M.S.A., Caxton House, Westminster, S.W. Quantities on deposit of 1l.

JANUARY 6.—**Guilford.**—COTTAGES.—Erection of twenty cottages in Cline-road. Plans and specifications by Mr. C. G. Mason, Borough Engineer and Mr. T. J. Gadd, architect, Stoke-road, Guilford. Deposit of 2l. 2s.

JANUARY 6.—**Manchester.**—SCHOOL.—Erection of the new Municipal School of Domestic Economy, High-street, Chorlton-on-Medlock. Plans seen, and quantities, on deposit of 2l. 2s., from Mr. Thomas Hudson, Town Clerk, Deansgate, Manchester.

JANUARY 6.—**Hull.**—SCHOOL.—For erection of a school in Sanner-street. Drawings and specification seen, and quantities, on deposit of 2l. 2s., from Mr. J. H. Hirst, City Architect, Town Hall, Hull.

JANUARY 8.—**Loose.**—SCHOOL.—Erection of a new Council school. Plans and specifications by the Committee's Architect, Mr. W. H. Robinson, M.S.A., Caxton House, Westminster, S.W. Quantities on deposit of 1l.

JANUARY 8.—**Middlesbrough.**—ADDITIONS, ETC.—For alterations and additions to the police residences at the back of the Cannon-street Police-station. Specification seen, and forms of tender from Mr. S. E. Burgess, M.Inst.C.E., Borough Engineer, Borough Engineer's Office, Municipal-buildings, Middlesbrough.

JANUARY 8.—**The Mumbles.**—SLIPWAY, ETC.—The Committee of Management of the Royal National Lifeboat Institution invite tenders for the construction of a reinforced concrete (Consideration) lifeboat launching slipway, and reinforced concrete and steel approach gangway on the north-west side of Mumbles Pier, The

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders,

No DATE. **South Bank-in-Normanby.** TOWN HALL, ETC.—For erection of new Town Hall, Offices etc. Mr. Cecil E. Preston, Clerk to the Council, Normanby-road, South Bank, Yorks.

JANUARY 6. - **Kirkcaldy.** - **PAINTING.** - For painting at Adam Smith and Beveridge Halls. Specification from Burgh Surveyor.

construction of disposal works, consisting of balancing tanks, storm-water tanks, Detention tanks, filters, pumping station. Conditions, specifications, quantities, and form of tender from

LONDON.—For construction and supply of a motor fire-boat for use in the river service of the Fire Brigade, for the London County Council:—

	For construction including £240 for extras.	For supply of the Thames.	Total.
Merryweather & Sons, Ltd.	13,605	25	13,630
G. Repple & Co.	10,400	—	10,400
J. S. White & Co., Ltd.	8,741	88	8,829
J. I. Thornycroft & Co., Ltd.	8,770	50	8,820
Ditto.—Alternative tender, providing for "Thornycroft S. 4" engines.....	8,000	50	8,050
Ditto.—Second alternative tender, providing for "Thornycroft C. 6" engines.....	7,450	50	7,500

[Not in accordance with specification.]

LONDON.—For adaptation of the stable building at Golder's Hill to provide accommodation for the staff, for the London County Council:—

Marchant, Hirst, & Co.	£1,560	J. & C. Bowyer, Ltd.	£1,165
E. Streather	1,300	R. Hardins & Son	1,135
J. Barker & Co., Ltd.	1,236	Bowley Bros.	1,057
J. Grover & Son	1,244	C. F. Whyborn	896

[The Architect's estimate, comparable with the tenders, is £1,000.]

LONDON.—For structural alterations at the Perryvale, Homerton, Edgware-road, Shoreditch, and Highbury fire-stations, for the London County Council:—

Leslie & Co., Ltd.	£1,938	W. Johnson & Co., Ltd.	£1,535
W. Downs	1,434	J. & C. Bowyer, Ltd.	1,487
H. L. Holloway	1,547	Higgs & Hill, Ltd.	1,484

[The Architect's estimate, comparable with the tenders, is £1,327.]

LONDON. For rebuilding the Ricardo-street School, Poplar, for the London County Council:—			
Brand, Pettit, & Co.	£20,757	Perry & Co. (Bow)	£19,421
McCormick & Sons	20,690	Rowley Bros.	19,319
G. Godson & Sons	20,258	E. Lawrence & Sons, Ltd.	19,157
L. H. & R. Roberts	20,113	F. & T. Thorne	18,956
McLaughlin & Harvey, Ltd.	19,755	Patman & Fotheringham, Ltd.	18,923
T. D. Leng	19,513		

[The Architect's estimate, comparable with the tenders, is £19,455.]

LONDON.—For converting into dormitories the laundry block at the Pentonville-road Place of Detention, Islington, for the London County Council:—			
W. Johnson & Co., Ltd.	£750	J. & C. Bowyer, Ltd.	£695
Markham & Markham	721	E. Lawrence & Sons, Ltd.	699
W. Downs	713	J. C. Mather	574

LONDON. For provision of dressers to sixty-eight four-roomed cottages on the Tottenham-fields estate, for the London County Council:—

Rowley Bros.	£155	Gathercole Bros.	£120
F. W. Fletcher	136		

[The amount of the Architect's estimate, comparable with the tenders, is £119.]

MENAI BRIDGE.—For additions, alterations, and repairs to the Gwalchmai Council School, Mr. Jos. Owen, F.R.I.B.A., County Architect, Menai Bridge:—

W. D. Williams	£1,201	E. T. Hughes	£1,660
R. & I. Williams	1,855	E. O. Jones	1,497
H. & I. Williams	1,834		

[Architect's estimate, £1,685 16s.]

NANTHR (Glam.). For forming playground and drainage at the Council school. Mr. D. Pugh-Jones, M.S.A., F.S.I., County Architect, Cardiff:—

P. Gaylard, Bridgend	£236		
----------------------	------	--	--

NORTHAMPTON.—For part rebuilding and widening Oundle North Bridge. Mr. C. S. Morris, County Surveyor, Northampton:—

J. P. Trentham	£11,468	H. Martin, Ltd.	£9,201
R. Marriott	10,557	H. & C. S.ley	
E. Brown & Son	9,823	Bros.	9,182
Bourdmore & West	9,789	R. Finnegan	8,755
W. Freeman	9,419	A. Hynd	8,663
		O. P. Drever	
		Kettering	7,953

PORTSMOUTH.—For two common dressing-rooms and a diving stage at the Stanshaw swimming pond:—

P. Smith & Co.	£225	E. & A. Springalls	
J. Tanner	223	Winstanley-woods & Co.	213
H. Howe	189	road, Ports-	mouth
H. Jones & Son	186		

[Surveyor's estimate, £150.]

RUGBY.—For erection of a corrugated-iron shed at the cattle market. Mr. D. G. Macdonald, A.M.Inst.C.E., surveyor:—

W. Walton & Son	£165	A. Bodycote, Rugby	£132
C. Cockerell	153		

[Surveyor's estimate, £150.]

STANWELL.—For erection of a boys' home, for Staines Board of Guardians. Mr. G. W. Manning, architect, London-road, Ashford:—

S. Wright	£1,700	Barrett & Son	£2,339
Harris & Son	2,057	A. & B. Hanson	2,275
Pasynke & Son	2,653	W. J. Wilkinson	2,271
R. A. Lowe & Co.	2,628	E. Hawkins & Co.	2,271
T. Higgs	2,471	Ashford	2,170
Lane & Son	2,460		

WILLESBOROUGH.—For new boys' school and alterations to existing premises, for Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., Architect to the Committee:—

	Gross Tender.	Credit.	Net Tender.
C. J. Howland	£ 3,200	£ 15 6	£ 3,184 6
C. J. Epps	3,000	8 0 7	2,991 19 5
L. Edwards	2,980	8 3 0	2,971 17 0
W. J. Ballard	2,735	4 0 0	2,731 0 0
Scott Bros.	2,708	9 0 0	2,700 0 0
Kirk & Randall	2,716	10 0 0	2,706 0 0
E. J. Bowles	2,740		2,740 0 0
J. A. Davison	2,680	2 10 0	2,677 10 0
Hayward & Paramor	2,677	6 14 8	2,670 5 4
G. E. Walsh & Son	2,645		2,645 0 0
S. R. Spinner	2,650	5 12 0	2,644 8 0
W. Shippam	2,634	0 0 0	2,634 0 0
A. S. Ingilston	2,837	9 13 0	2,827 7 0
G. Browning	2,580	4 0 0	2,576 0 0
C. E. Skinner	2,567	20 0 0	2,567 0 0
Ellis Bros.	2,570	7 0 0	2,563 0 0
D. Godden & Son	2,550	7 0 0	2,543 0 0
W. T. Burrows	2,558	5 7 0	2,552 13 0
J. Wood & Sons, Boughton, Mon-chelsea	2,499	11 0 0	2,488 0 0

† Included in gross.

J. J. ETRIDGE, J.
SLATE MERCHANTS. LTD.

EXPERTS IN
SLATING,
TILING.
BEST WORK ONLY.

Telephone 2685 Wall, or write—

BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and C. Trask & Son,
The Doulting Stone Co.)

Norton, Stoke-under-Ham, Somerset.
London Agents:—Mr. E. A. Williams,
16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co. T.N. 2644 Central.

WHAT!
USE WHITE
LIME-SAND BRICKS
(Of the Finest Quality)
FOR CONTRACT WORK?
WHY?

- B The Bricks are uniform.
- C Less mortar is required.
- C Closer joints can be made.
- A 15 per cent. more bricks can be laid per day.
- U Where light is required they need no whitewashing.
- S Saving of material and labour.
- E USED BY THE BUILDING INDUSTRY IN GERMANY, AMERICA, AND IN THIS COUNTRY.

These Bricks are made by the
GODSTONE BRICK & TILE CO. LTD.
Oxsted Road, Godstone, Surrey,
and can be delivered in quantities of not less than 5,000
within 10 miles of the Company's Works at 7/- per 1,000, net.
Send for Free Samples

SPRAGUE & CO., Ltd.
LITHOGRAPHERS AND PRINTERS.
Estate Plans and Particulars of Sale promptly executed.
4 & 5, East Harding-st., Fetter-lane, E.C.

OGILVIE & CO.,
Telephone: DALSTON 1288.
Many years connected with
the late firm of W. H.
LABERGE & CO., LTD.,
of Rumbold Row.

Amhurst Works, DALSTON LANE, N.E.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS.
ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by

THE
French Asphalte Co.
Whose name and address should be inserted in specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

EWART'S
Cures in 19 cases out of 20.
"EMPEROR"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone:
2570 North.
SMOKE-CURE

WOOD.

BUILDING WOOD.	At per standard.	At per standard.
Deals: best 8 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0	15 10 0
Deals: best 2 in. by 7 in. and 3 in. by 5 in. and 7 in. and 3 in.	13 10 0	14 10 0
Deals: seconds	11 10 0	12 10 0
Battens: best 2 in. by 7 in. and 3 in. by 5 in.	0 10 0	less than
Battens: seconds	1 0 0	less than
2 in. by 4 in. and 2 in. by 5 in.	9 0 0	10 0 0
Foreign Sawed Boards—		
1 in. and 1 1/2 in. by 7 in.	0 10 0	more than
1 in. by 11 in.	1 0 0	battens.
First timber: best muddling Danzig or Mensel (average specification)	4 10 0	5 0 0
Seconds	3 17 6	4 0 0
Small timber (8 in. to 10 in.)	2 12 6	3 10 0
Swedish balks	5 5 0	6 0 0
Pitch-pine timber (30 ft. average)	5 5 0	6 0 0

JOINERS' WOOD.

White Sea: first yellow deals.	At per standard.	At per standard.
3 in. by 11 in.	24 10 0	25 10 0
3 in. by 9 in.	22 10 0	23 10 0
Battens: 2 1/2 in. and 3 in. by 7 in.	17 0 0	18 0 0
Sediment yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Battens: 2 1/2 in. and 3 in. by 7 in.	14 0 0	15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0	15 0 0
Battens: 2 1/2 in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals.	3 in. by 11 in.	21 10 0
3 in. by 9 in.	18 10 0	19 10 0
Battens	14 0 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do 3 in. by 9 in.	15 0 0	16 0 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
White Sea and Petersburg		
First white deals, 3 in. by 11 in.	15 0 0	16 0 0
Battens	14 0 0	15 0 0
Second white deals, 3 in. by 11 in.	14 0 0	15 0 0
Battens	13 0 0	14 0 0
Fitch-pine: deals, 3 in. by 11 in.	19 0 0	21 0 0
Under 2 in. thick extra.	0 10 0	1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Odinuts	33 0 0	"
Seconds, regular sizes	33 0 0	"
Odinuts	23 0 0	"
Kursk Pine: Planks per 4 cube.	0 8 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube.	0 3 0	0 3 9
Small	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch.	0 0 9	0 0 11
Dry Mahogany—Houses, as inch.	0 0 8	"
Basco, per ft. super, as inch.	0 10 0	0 1 1
Selected, Figure, per ft. super, as inch.	0 1 6	0 2 6
Dry Walnut, American, per ft. super, as inch.	0 10 0	0 1 0
Tropical per load, as inch.	15 0 0	22 0 0
American Whitewood planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc., per square.		
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1 in. by 7 in. white, planed and shot	0 16 0	0 1 0
1 in. by 7 in. white, planed and matched	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1 in. by 7 in. yellow, planed and matched	0 15 0	0 16 6
1 in. by 7 in. yellow, planed and matched	0 11 0	0 13 6
1 in. by 7 in. white	0 14 0	0 18 6
1 in. by 7 in. white	0 10 0	0 11 0
1 in. by 7 in. white	0 12 6	0 15 0
6 in. at 84, to 94, per square less than 7 in.		

JOISTS, GIRDERS, &c.

Rolled Steel Joists, ordinary sections.	In London, or delivered Railway Vans, per ton.	At per standard.
Compound Girders, ordinary sections.	7 10 0	8 0 0
Steel Compound Stanchions.	9 10 0	10 0 0
Angles, Tees, and Channels, ordinary sections.	11 0 0	12 0 0
Flat Bars.	9 10 0	10 0 0
Cast Iron Columns and Stanchions, including ordinary patterns.	7 10 0	8 10 0

METALS.

IRON—	Per ton, in London.	At per standard.
Common Bars	8 10 0	9 0 0
Staffordshire Grey Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	"
Mild Steel Bars	8 15 0	"
Hoop Iron, best price	9 5 0	9 10 0
"Galvanised"	17 0 0	"
Sheet Iron Black—		
Ordinary sizes to 20 g.	9 15 0	"
"24 g.	10 15 0	"
"28 g.	12 5 0	"
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	"
Ordinary sizes to 22 g. and 24 g.	15 10 0	"
"28 g. and 30 g.	16 10 0	"
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0	"
"22 g. and 24 g.	18 10 0	"
"28 g. and 30 g.	20 0 0	"

METALS (Continued).

IRON (Continued)—	Per ton, in London.	At per standard.
Galvanised Corrugated Sheet—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	"
"22 g. and 24 g.	14 15 0	"
"26 g.	16 5 0	"
Best Soft Steel Sheet, 5 ft. to 8 ft. to 20 g. and thicker.	12 0 0	"
Best Soft Steel Sheets, 2 g. & 24 g.	13 0 0	"
Silesia	33 5 0	"
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0
(Under 3 in., usual trade extras.)		

LEAD, &c.

LEAD—Fourth, English, 4 lb. and up.	Per ton, in London.	At per standard.
Pipe in coils	19 17 6	"
Solid pipe	22 17 6	"
Compo pipe	22 17 6	"
Zinc Sheet—		
Vielles Montagne	33 10 0	"
Silesia	33 5 0	"
Zinc, in bundles, 1s. per cwt. extra.		
COPPER—		
Strong Sheet	per lb. 0 1 0	"
Thin	" 0 1 1	"
Copper nails	" 0 10 0	"
Copper wire	" 0 10 0	"
BRASS—		
Strong Sheet	" 0 11 1	"
Thin	" 0 1 0	"
Trade English	" 0 1 0	"
Solder—Plumbers'	" 0 8 4	"
Timmen's	" 0 11 1	"
Blowpipe	" 0 1 2	"

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.	Per Ft. Delivered.
15 oz. thirds	34d.
16 oz. thirds	34d.
21 oz. thirds	34d.
"fourths"	34d.
26 oz. thirds	34d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.	Per Ft. Delivered.
Hartley's	34d.
2d.	34d.
2d.	34d.
2d.	34d.
2d.	34d.

* Not less than three crates.

OILS, &c.

Raw Lined Oil in pipes	per gallon	At per standard.
"in barrels"	0 8 0	"
"in drums"	0 8 0	"
Baled	0 8 0	"
"in drums"	0 8 0	"
Turpentine in barrels	0 2 11	"
"in drums"	0 2 11	"
Genuine Ground English White Lead, per ton	25 0 0	"
Red Lead, Dry	22 10 0	"
Best Lined Oil Putty	per cwt. 0 10 0	"
Stockholm Tar	per barrel 1 12 0	"

VARNISHES, &c.

Per gallon.	At per standard.
Fine Pale Oak Varnish	0 8 0
Fine Copal Oak	0 10 6
Superfine Fine Elastic Oak	0 12 6
Fine Extra Hard Clear	0 18 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Fine Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Fine Pale Maple	0 18 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knottling	0 10 9
French and Brush Polish	0 10 6

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and letters read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from hesitation to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

ABERTHAW (Glam).—For the erection of a new Council school for boys, for the Glamorgan County Council. Mr. D. Pugh-Jones, M.S.A., F.S.I., County Architect, Cardiff.
Davies & Lloyd, Sengenydd* £5,172 7 2

ANTHIM.—For sinking a well and erecting a pump at Oldstone.—
A. Clyde, Ballymena* £120 10 0
H. Farr 10 9 0
S. Boal 9 8 6

BRIDGEND (Glam).—For the erection of a new Council school for boys, girls, and infants, for the Glamorgan County Council. Mr. D. Pugh-Jones, M.S.A., F.S.I., County Architect, Cardiff.
P. Gaylard, Bridgend* £10,566

CAERWYS.—For the erection of a quarry manager's house and office at Penstrowed Quarry, for the Montgomeryshire County Council. Mr. G. A. Hutchins, County Architect.—
J. Mannel £440
J. Evans 315
J. Swain, Newtown* 275

CAMBRIDGE.—For erection of schools on ground adjoining Melbourn-place, for the Education Committee of the Borough of Cambridge. Quantities by Mr. T. Moody, London.
Kidman Brothers, Cambridge £11,336
[Lowest tender of nine.]

CHESTERTON.—For new drainage and sanitary work at the Union Workhouse, Chesterton, near Hadding & Son £249 0
Bell & Sons £232 0
Booker & Sons 335 0
[Flack*] 268 10
[All of Cambridge.]

CLONES.—For erection of a private residence (all materials supplied by the proprietors), for Messrs. Quinn Bros. Mr. P. J. Bandy, architect, Broomfield House, Ballyhanna, Ireland.
J. McMahon, sen £235
J. McMahon, jun 235
[Both of Clones.]

GILFACH FARGOED (Glam).—For remodelling and extending the boys' Council school, for the Glamorgan County Council. Mr. D. Pugh-Jones, M.S.A., F.S.I., County Architect, Cardiff.
Hamilton & Millard, Caerphilly, Glam* £1,230

GRIMSBY.—For supply and delivery of thirty-six ventilating columns. Mr. H. Gilbert Whyatt, A.M.Inst.C.E., Borough Engineer and Surveyor.
Hardy & Padmore £396 0
Adams Hydraulics, Ltd. £384 0
J. Stone & Co. 347 8
Bayliss, Jones, & Bayliss 381 12
J. Neesham & Sons 34 16
J. Duke, Ltd. 331 0
A. E. W. Gwyn, Ltd. 324 0
Beck & Co., Ltd. 280 0
Wellington Tube Works, Ltd. 256 4
Porter & Co. 250 11
W. E. Farner 245 74
Tuke & Bell, Ltd. 243 0
H. Ashworth 257 6
J. Spencer, Ltd. 248 10
F. Bird & Co., London* 245 74
J. Russell & Sons 234 0
200 14

Supplying and Fixing Seventy Two Vertical Shafts
D. J. Dolby £293 11 0
H. Ashworth £193 4 0
A. Cook 216 12 6
Cooper & Berry 213 0
T. B. Redshaw 210 17 6

LONDON.—For plastering and painting works to two wards and other rooms at the Infirmary, Highgate Hill, N., for the Guardians of St. Mary, Islington. Mr. Edmund J. Harrison, architect, 9, Gray's Inn-square, W.C.1.
T. Preston £255 0
Stanton & Mason £198 16 0
Bate Bros 194 0
General Building Co. 230 0
Son 189 0
Clark & Co. 230 0
J. Hocking & Son 179 0
G. Wells 245 0
Strong & Co. 164 17 6
F. W. Wainston 209 10
Finch & Co. 203 0
Martin & Co. 203 0
Looney & Son 198 10
Hford 149 0 0

LONDON.—For the enlargement of the "Wycliffe" School for Mentally Defective Boys, Battersea, for the London County Council.
Rice & Son £1,063 0 0
C. Wall, Ltd. 1,047 9 6
J. Garrett & Son 1,016 0 0
W. King & Son 891 0 0
A. Roberts & Co., Ltd. 891 0 0
R. A. Jewell 848 15 1
F. W. Fletcher 894 10 0
Lole & Co. 886 1 9
F. & G. Foster 886 0 0
W. Johnson & Co., Ltd. 880 0 0
J. & C. Boyer, Ltd. 579 0 0
[The Architect's estimate, comparable with the tenders, is £901.]

ROADS, etc.—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

the Engineer, Mr. A. E. Adams, M.Inst.C.E.I., A.M.Inst.M.E., High-street, Chippingham, Wilt., on deposit of 3s. 6d.

JANUARY 15.—**Gloucester**.—STONE. For supply of stone for use on main roads. Forms of tender obtained from the County Surveyor, Mr. E. S. Sinnott, M.Inst.C.E., Shire Hall, Gloucester.

JANUARY 15.—**London**.—ROADS.—For works of repair on the following roads:—Beaumont-road,

Southfield; Southmead-road, Southfield; that part of Augustus-road, Southfield, which lies between Inner Park-road and Princes-road. Specifications and drawings seen, and forms of tender from the Borough Engineer, New Streets Department, No. 66, East-hill, Wandsworth, S.W. Deposit of 5s. 6d.

* JANUARY 15.—**West Ham**.—ROADS.—The West Ham Education Committee invite tenders for formation of two short connecting roads. See advertisement in this issue for further particulars.

JANUARY 17.—**Lewes**.—MATERIALS. For the supply of broken granite, broken Kentish rag stone, broken Sevenoaks stone, broken flints,

etc. Specification, conditions of contract, and forms of tender from Mr. E. W. Ray-Johnson, Highway Surveyor, Surveyor's Office.

JANUARY 17.—**Tekfield**.—MATERIALS.—For the supply of broken granite, broken Kentish rag stone, etc. Specification, conditions of contract, and forms of tender from Mr. E. W. Ray-Johnson, Highway Surveyor, Surveyor's Office, Buxley, Sussex.

JANUARY 30.—**Willenhall**.—SEWERAGE.—For the construction of new sewage disposal works. Plans seen, and quantities, specification, and form of tender from the Engineer, Mr. T. Edgar Fellowes, C.E., Town Hall, Willenhall, on deposit of 10s.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK of WORKS.	Hendon Education Com.	3l. 10s. per week	Jan. 6

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD BUILDING LAND, FULHAM, S.W.—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Jan. 10
*BUILDING SITE, HIGH-STREET, LEWISHAM, S.E.—At the Mart	Wiltshire & Co.	Jan. 18

RECENT SALES.—Continued from page 759.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
By NICHOLAS.		
Clapham.—Park Hill, Froxfield, f., p.	£2,500	
By BUTLER, SON, & VINE.		
Tottenham Court-rd.—37, Grafton-st. (s.), f., w.r. 140s. 8s.	1,050	
Clayton—107, Downs-rd., ut. 54 yrs., g.r. 8l., p.	310	
Holloway—78, Spencer-rd., ut. 54 yrs., g.r. 10s. y.r. 30l.	275	
Camden Town—5, Lyne-rd., ut. 23 yrs., g.r. ut. y.r. 32l.	215	
St. Pancras.—Drummond-st., l.g. rents 75s., ut. 8 yrs., g.r. 10l.	255	
By ROGERS, CHAPMAN, & THOMAS.		
Chelsea—58, Beaufort st., ut. 62 yrs., g.r. 10l., c.r. 6s.	455	
Westminster—30, 32, and 34, Catherine-st., f., y.r. 140l.	2,950	
5, Buckingham-st., f., y.r. 50l.	780	
37, Palace-st., f., y.r. 50l.	730	
Palace-st., Duke of Cambridge b.h., f., y.r. 40s. 5s. to 6s. (odd), Catherine-st., 2, 4, and 5, Wilfred-st., f., y.r. 38s.	1,050	
December 13.—By BISLEY & SONS.		
Charlton.—373 and 375, Woolwich-rd., ut. 72½ yrs., g.r. 9l. 10s., w.r. 2l. 16s.	340	
By ARY, PHILLIPS.		
Paddington.—Harrow-rd., l.g. rents 52l. 10s., ut. 25 yrs., g.r. nil.	525	
Harrow—85, Pinner-rd., ut. 8½ yrs., g.r. 6l. 6s., c.r. 40s.	300	
By GEO. HEAD & CO.		
Maylebone—43 and 45, York-st., ut. 3½ yrs., g.r. 70s., y. and w.r. 26l. 8s.	145	
17, Crawford-st., ut. 4½ yrs., g.r. 30l., w.r. 182l. 2s.	185	
39, New-st. mews, ut. 9 yrs., g.r. nil, w.r. 267l. 16s.	310	
1, 2, 3, and 7, Little Park-lane, 2, 3, and 4, Albion-st., ut. 34 yrs., g.r. 90s., w.r. 453l. 16s.	100	
Paddington—1 to 5, Cirencester-pl., ut. 47½ yrs., g.r. 10l.	100	
By FOSTER & CAMPBELL.		
Leytonstone—13 to 21 (odd), Beulah-rd., f., w.r. 110l. 10s.	630	
Stratford—1, Short-rd., f., y.r. 20l.	190	
94, 100, and 102, Leytonstone-rd. (s.), f., y.r. 8s.	735	
West Ham—2, 4, and 6, Jambou-rd., (s.), f., w.r. 99l. 16s.	610	
94, 96, 104, and 106, Jambou-rd., f., w.r. 38l. 12s.	565	
92, 94, and 96, Stephens-rd. (s.), f., w.r. 38l. 12s.	460	
Iford—341, High-rd. (s.), f., y.r. 36l.	275	
Holloway—24, Burnard-pl., f., w.r. 31l. 4s.	170	
Hornsey—9 and 11, Harrington-rd., ut. 35 yrs., g.r. 10l. w.r. 52l.	125	
Kilburn—105 and 107, Carlton-vale, f., w.r. 93l. 12s.	400	
Hackney—90 and 92, Laburnum-st., f., w.r. 70l. 1s.	330	
Bethnal Green—7, Paradise-row, f., w.r. 52l., Bloomsbury, 2, Goldenhill-st., f., p.	250	
Fulham—32, Dunsdale-rd., f., w.r. 31l. 4s.	263	
35 and 37, Margravine-rd., f., w.r. 68l.	350	
Chelsea—17, Walton-st. (s.), f., w.r. 68l.	145	
Walton-on-Thames. High-rd., freehold land, 1 a 2 r. 31 p.	465	
By BOULTER & COOPER.		
Keldholme, Yorks.—Manor House and Deepdale Farm, 108 acres, f., w.r.	3,925	
December 14.—By CHRISTENTON & SONS.		
Greenwich.—Caldon-rd., l.g. rents 9l., reversion in 7½ yrs.	190	
Humber-rd., f.g. rents 6l. 6s., reversion in 82 yrs.	145	
Forest Gate.—Dunelm-rd., l.g. rents 14l., reversion in 37 yrs.	310	

Nature and Place of Sale.	By whom Offered.	Date of Sale.
By LEASE.		
Charlton. 10, Station-ter. (s.), ut. 77 yrs., g.r. 3l. 3s. y.r. 60s.	£550	
By NEWSON & SHEPHERDS.		
Barnsbury—64, Huntingdon-st., ut. 36 yrs., g.r. 10l. y.r. 50l.	250	
3, Berke-st., ut. 33 yrs., g.r. 5l., c.r. 30s.	120	
Haverstock Hill—47, Mansfield-rd., ut. 36 yrs., g.r. 6l. 10s., y.r. 46l.	250	
Kentish Town—1 and 3, Lewis-st., ut. 23 yrs., g.r. 8l., y. and c.r. 50s.	235	
123, Carlton-rd., ut. 39 yrs., g.r. 6l., w.r. 59l. 16l.	185	
184 and 192, Weedington-rd., ut. 43½ yrs., g.r. 12l. 12s. y. and w.r. 83l. 6s.	260	
By DEBENHAM, TEWSON, RICHARDSON, & CO.		
City. 30 and 31, St. Swithin's-lane, f.g.r. 67½, reversion in 42½ yrs.	19,500	
Cromer, Norfolk.—Royal Links Hotel and 7 acres, f. (as a going concern)	10,000	
December 15.—By DEAN, SON, & HILTON.		
Lewisham—2, 4, and 6, Court Hill-rd., ut. 54½ yrs., g.r. 15l. 15s., y.r. 117s.	850	
Blackheath—12, Deane-park, f., p.	300	
By PERCY W. CLAYTON.		
Poplar. 79, Gough-st., ut. 36 yrs., g.r. 3l., w.r. 33l. 16s.	150	

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; s.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; ut. for unexpired term; p.a. for per annum; y.a. for years; l.a. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; c.r. for crescent; at. for avenue; g.s. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for office; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

* * * Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.	£ s. d.	£ s. d.
Best Stocks. Per 1000 Alongside, in River.	1 13 0	
Picked Stocks for Facings	2 7 0	
Per 1000, Delivered at Railway Depot.		
Flettons	1 10 6	Best Blue Pressed
Best Fencham	3 12 0	Stadfordshire
Red	3 12 0	Do. Bullnose
Best Red Pressed	5 0 0	Best Stourbridge
Blackburn Facing	5 0 0	Fire Bricks
GLAZED BRICKS		
Best White	13 17 6	Double Headers
Ivory, and Salt	17 6	One Side and Two Ends
Glazed Headers	10 17 6	Two Sides and One End
Quoins, Bullnose	18 17 6	Splays & Squints
and 4 in. Flats	16 7 6	
D'ble Stretchers	16 17 6	
Second Quality	£1 10s. per 1000 less than best.	
Thames and Pit Sand	s. d.	
Best Portland Cement	5 6 "	6 9 per yard, delivered.
Best Ground Blue Lime	19 0 "	50 per ton, "
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.		
Grey Stone Lime	13s. 0d. per yard delivered.	
Stourbridge Fireclay in sacks	7s. 0d. per ton at rly dpt.	

STONE.	Per Ft. Cube.	Per Ft. Cube.
BATH STONE—delivered on road wagons, s. d.		
Paddington Depot	1 6s.	
Do. delivered on road wagons, Nine Elms Depot	1 8s.	
PORTLAND STONE (30 ft. average)—		
Brown Whittled, delivered on road wagons, Paddington Depot, Nine Elms Depot, or Fimlico Wharf	2 3	
White Banded, delivered on road wagons, Paddington Depot, Nine Elms Depot, or Fimlico Wharf	2 4s.	
Per Ft. Cube, delivered at Railway Depot.		
Ancoaster in blocks	1 10	Closeturn Red
Beer in blocks	1 6	Freestone
Greenhall in blocks	1 10	Red Mansfield
Darley Dale in blocks	2 4	Freestone
2 4 Talcorn & Gwysyr		
Red Corshill in blocks	2 8	Stone
2 3		
YORK STONE—Robin Hood Quality.		
Per Ft. Cube, Delivered at Railway Depot.		
Scappled random blocks	2 10	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	
6 in. rubbed two sides ditto	0 11	
3 in. sawn two sides slabs (random sizes) to 2 in. to 2½ in. sawn one side slabs (random sizes) 0 7		
1½ in. to 2 in. ditto	0 6	
HARD YORK—		
Per Ft. Cube, Delivered at Railway Depot.		
Scappled random blocks	3 0	
Per Ft. Super., Delivered at Railway Depot.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8	
6 in. rubbed two sides ditto	1 2	
3 in. sawn two sides slabs (random sizes) to 2 in. self-faced random flags	0 5	

SLATES.	£ s. d.	£ s. d.
For 1000 of 1300 at Railway Depot.		
In. In. 20 x 10 best blue	15 17	20 x 10 best blue
20 x 10 ditto	13 6	unfading green 15 17
20 x 10 1st quality	13 17 6	20 x 12 ditto
ditto	13 0	18 x 10 ditto
20 x 12 ditto	13 15 0	16 x 8 ditto
16 x 8 ditto	7 5 0	20 x 10 permanent
22 x 10 best	13 10 0	green
Portsmouth	12 12 6	18 x 8 ditto
16 x 8 ditto	6 12 6	16 x 8 ditto

TILES.	£ s. d.	£ s. d.
At Railway Depot.		
Best plain red roofing (per 1000)	42 0	Best "Hartshill" brand, plain sand-faced (per 1000)
Hip and Valley (per doz.)	3 7 0	Do. pressed (per 1000)
Best Bursley (per 1000)	50 0	Do. Ornamental (per 1000)
Do. Ornamental (per 1000)	52 6	Hip and Valley (per doz.)
Hip and Valley (per doz.)	4 0	Staffords (Hansley)
Best Bursley (per doz.)	3 0	Reds or Brindled (per 1000)
Do. Ornamental (per doz.)	57 6	Hand-made sand-faced (per 1000)
1000	60 0	Hip (per doz.)
Hip (per doz.)	3 0	Valley (per doz.)
Valley (per doz.)	3 0	

THE BUILDER

VOL. CI.—No. 3595.

DECEMBER 29, 1911.

CONTENTS.

PAGE		PAGE		PAGE
765	THE ARCHITECT'S CLERK	777	MONTHLY REVIEW OF ENGINEERING:—	786
766	"THE WOMAN IN THE CASE"	777	THE SITTEB VIADUCT, SWITZERLAND.—II. (WITH	786
767	NOTES	777	ILLUSTRATIONS)	787
768	ARCHITECTURAL SOCIETIES	777	L.C.C. REGULATIONS FOR REINFORCED CONCRETE	787
769	SHOREHAM COTTAGE, KENT (WITH ILLUSTRATIONS)	777	BUILDINGS	788
769	THE ÆSTHETIC TREATMENT OF CONCRETE	780	FOUNDATION LOADS.—III.	788
772	HOUSE AT WOKING (WITH ILLUSTRATION)	781	HOMOGENEITY AND IMPERVIOUSNESS OF BETON	789
773	THE LONDON ARCHITECT'S PROCEDURE	781	APPLYING CEMENT MORTAR BY COMPRESSED AIR	790
774	GENERAL NEWS	782	REINFORCED CONCRETE BRIDGE AT UNIVERSITY	791
774	COMPETITION NEWS	782	COLLEGE, CORK (WITH ILLUSTRATIONS)	791
774	BOOKS		THE BUILDING TRADE:—	792
775	CORRESPONDENCE (WITH ILLUSTRATION)	784	THE BUDGET AND THE BUILDING TRADE	
776	EDITORIAL SUMMARY	784	THE EMPLOYMENT OF A SPECIALIST	
776	MEETINGS	784	LABOUR IN THE BUILDING TRADE	
776	NOTES TO ILLUSTRATIONS	785	EDINBURGH MASTER BUILDERS' ASSOCIATION ..	
776	FIFTY YEARS AGO	785	FACTORY AND COMMERCIAL PROPERTY SALES, 1911	
		785	GENERAL BUILDING NEWS	
		785	PROJECTED NEW BUILDINGS IN THE PROVINCES	
			FOREIGN AND COLONIAL	
			LEGAL COLUMN	
			LONDON COUNCILS	
			OBITUARY	
			PATENTS	
			LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN ..	
			TRADE CATALOGUES	
			SOME RECENT SALES	
			PRICES CURRENT	
			TENDERS	

Illustrations.

ROYAL ACADEMY STUDENTS' DESIGNS, 1911:—
DESIGN FOR THE GOLD MEDAL, BY MR. JOHN C. ROGERS.
DESIGN FOR THE GOLD MEDAL, BY MR. ADRIAN BERRINGTON.



Shoreham Cottage, Shoreham, (See page 769.)

Messrs. Moscrop-Young & Glanfield, Architects.

THE ARCHITECT'S CLERK.

WE have already made some brief comments on the papers read at the R.I.B.A. about the responsibilities of architects, pointing out the difficulties these throw in the way of an architect devoting due attention to his functions as a skilled designer and the detrimental influence all these responsibilities must exercise on the quality of his work.

Yet the architect dare not neglect them, being forced in the protection of his livelihood to guard against the liabilities they entail. If his staff is well organised and well chosen some relief will be afforded, but the faculty for carrying organisation to a high pitch is not usually a marked characteristic of the artistic or professional classes; besides, there is the added difficulty of the fluctuating nature of the architect's employment—one year he may have to cope with a large amount of work and the succeeding year with not a quarter the quantity, and his usual method of

dealing with these variations is the employment of a larger or smaller number of assistant in the drawing office, relying on himself for the conduct of the business side of his professional work. Many an architect must have felt that he would be much better off with a capable business assistant than with one or more draughtsmen, whose work he would prefer to do himself had he the time, knowing that he could carry his ideas further with the pencil in his own hand. Some few have been able to put such a system in operation in their offices, but these are in a minority owing to the lack of assistants qualified to undertake this side of office work. Now, as we all know, there is a large surplus in the supply of architects' draughtsmen, and the less skilful find it uphill work to make a living. It does not follow that a lack of the facilities of artistic perception and imaginative design carries with it any disability to appreciate the practical conduct of building operations, and if

attention were concentrated on these there is nothing to prevent many a relatively incompetent assistant becoming a very competent and valuable "architect's clerk." The qualifications demanded are not so exceptional but that with steady and concentrated application many a level-headed youngster could master them; and if he can be induced to realise that he will really be rendering more valuable service than as a designer it would be to the advantage of all concerned.

There is a real need for a supply of competent architects' clerks specially trained for this position. They would not be required to have any artistic skill, but should understand drawings and all matters involving legal responsibility, such as Building Act regulations, London County Council or other similar requirements, building by-laws, party-wall notices and awards, all matters connected with contracts, certificates, dealings with sub-contractors, etc., the

preparation of accounts and numerous other questions not as a rule presenting especial difficulty, but sometimes apt to be handled carelessly amid the pressure of more interesting work. A training as quantity surveyor or as a clerk of works, supplemented by the other studies referred to, would provide the right kind of qualification, but the knowledge of quantities and of materials, though useful in a small office, would not be essential in a large one, where there would be quite enough to tackle without any duties in respect of these.

We feel sure that many architects would welcome the possibility of being able to engage a qualified clerk to relieve him of all the details that are unconnected with the practice of architecture as an art, and to protect him from careless phrasing that has often resulted in serious misunderstandings. Thus, for example, an architect may say to his assistant, "Smithson will do the wrought-iron work at So-and-So's"; and the assistant may write to the builder, "We have instructed Mr. Smithson," etc. The architect's clerk would write, "We have approved Mr. Smithson's estimate for wrought-iron work; please arrange your contract with him for this work, including the necessary guarantees as to time, payment, etc." Comparison need hardly be made between these two forms of letter in regard to the risk of a dispute cropping up in the future.

Again, a knowledge of architects' charges will often save hours of worry in abstracting diaries and making up accounts, work that is rarely within the province of the usual type of architect's assistant, but which can well be undertaken by the confidential clerk.

Probably we have said enough to prove that there is a fair opening for the special type of "architect's clerk" as distinguished from the assistant, and that if a proportion of those interested in building operations qualified for this position they would materially improve their chances of advancement, while the architect in practice would be to some extent relieved of the bugbear entitled "the newer responsibilities."

"THE WOMAN IN THE CASE."

WE have heard much lately of the contemplated attack on the profession of architecture by the educated woman. We, for our part, feel no inclination to discourage such an attempt. Indeed, the more really competent aspirants there are in any profession the more healthy is its condition; it is only the dilettante and inefficient that lowers its status, and the woman who is prepared to bring the full force of her intelligence and ability to bear on the mastery of this art might conceivably take rank as a competent exponent of it. We think the claim that the physical requirements of the active practice of architecture render the profession unsuited to women hardly carries the weight that has sometimes been given to it, and, putting aside the question as to whether the modern tendency towards the suppression of sex differences is a good one, a question too wide to be

argued here, there seems little reason why architecture should not be as open as any other profession to both sexes.

As matters are the woman has indeed exceptional opportunities for proving her ability. There is nothing to prevent her from submitting a competitive design for a town hall or a hospital, and if it obtained the award, what a triumph!—and what purgatory for any unfortunate public body who might be so ill-advised as to put obstacles in the way of her carrying out her design!

However, the woman is as yet but feeling her ground, and has not so far attempted to make good so large a claim; she cautiously and ingeniously points to the long experience she has had in the domestic sphere and to the probability that she is much better qualified than mere man to deal with the problems of the home. Very well, let us take her, for the moment, at her own valuation, and *à propos* of this, imagine a short interview between the accomplished lady and a prospective client.

Omitting the preliminary negotiations between Mr. Brown and Mrs. A., whom he has now decided shall design the house he and his wife propose to build, we will plunge straight into the middle of their first business discussion.

Mr. B.: "Now, by this schedule you will see the accommodation we think we should get for the 2,000*l.* we propose to spend: Two servants'-rooms, day and two night nurseries, with bathroom and nursery pantry attached. Our own bedroom with large dressing-room and bathroom *en suite*, two double guests'-rooms and two single ones, with one or two bathrooms conveniently placed. Dining-room, drawing-room—large enough for dancing—billiard-room, top lighted. Pantry, which would also do for service-room, and a small servants' sitting-room, with all the usual kitchen offices, spacious and not cramped; the coal cellar to hold a truckload."

Mrs. A.: "Do you keep a motor?"

Mr. B.: "Oh, yes, a small run-about! But still, we are thinking of a larger one. We should want a garage about 20 ft. by 10 ft., and I should like a small workshop attached, as I amuse myself with a lathe and other little carpentering jobs."

Mrs. A.: "What was your idea of the sizes for dining-room, drawing-room, and entrance hall?"

Mr. B.: "Well, our present dining-room is 20 ft. by 16 ft.; a little larger than this would do. But our drawing-room is only 17 ft. square; we should like our new one at least 10 ft. more each way. Of course, we should want a hall we could sit in comfortably."

Mrs. A. (after a pause): "3,000*l.* might just cover the cost of your house, but I doubt it. I could promise that north or east of London it could be built for 3,500*l.*—only, of course, in a simple fashion."

Mr. B.: "Oh, but—oh, no! Jones said he thought— You know Robinson's house is quite as big, and he only gave 2,800*l.*, with three acres of ground. I have to live in Surrey, and the ground I want will cost 800*l.*"

Mrs. A. (severely): "I do know Robinson's house. Did you know he is trying to sell it?"

Mr. B.: "Why on earth should he want to sell such a charming old house? The Georgian front was just the kind of thing I was going to suggest for ours."

Mrs. A.: "Yes, delightful, isn't it? But I met Mrs. R. in town the other day and heard all about their troubles. Did you know they had to spend 700*l.* when they went in?"

Mr. B.: "No; he only spoke of a little decoration."

Mrs. A.: "I fear he was not quite candid. But as Mrs. R. was not responsible for the purchase she was very much more explicit. The first snowstorm found out all the weak points in the roof, which, even after an expenditure of 160*l.* still gives trouble at times; the servants' wing had no dampcourse—a wicked way those old Georgians had; and the garden, being clay, was often a swamp until they drained it; two bits of underpinning ran away with 90*l.*, and altogether the first year was a troublesome one. Then the position of the house, so far from anywhere, while ideal for the master and mistress, with their motor, is regarded in a very different light by the domestic staff. A servant can rarely be persuaded to stay for more than six months, and, as they have to employ five as against three at their old place, Mrs. R., with perhaps a little pardonable exaggeration, says that most of her time is occupied looking for new maids. No wonder they got the house for less than half what it must have cost!"

Mr. B.: "Yes, I see. I suppose it is hardly fair to expect to get a new house on quite that scale for the same money. But, of course, as the site I have in view is within half a mile of the station we should not be in quite the same fix as the Robinsons."

Mrs. A.: "Don't be too sure. Didn't you say that it was open common nearly all the way?"

Mr. B.: "Yes, and a large park beyond, so that we should be two miles from the village; but we do nearly all our shopping in town."

Mrs. A.: "You must take the risk. After all, you cannot be expected to make your staff the sole consideration. By-the-bye, what number do you employ?"

Mr. B.: "Cook, house-parlourmaid, and nurse, gardener two days a week. That would do, would it not?"

Mrs. A.: "Yes. I should have a poor opinion of my capacities if I could not devise a 2,000*l.* house to be run by this staff. But, of course, we have not yet settled whether the house you are going in for is to cost 2,000*l.* or 3,500*l.*"

Mr. B.: "Well, 2,500*l.* is the outside limit. I don't know what we can cut out."

Mrs. A.: "If you will leave your schedule with me I will go carefully through it and make my suggestions."

Mr. B.: "Anyway, I suppose the billiard-room would have to go?"

Mrs. A.: "We might get it in the roof, or make the hall big enough; but unless your wife is very keen on it she will probably say 'No' to the latter scheme."

Mr. B.: "Yes, I must talk that over with her."

We will drop the conversation at this point and leave it to our readers to decide how far such a discussion would indicate a special feminine faculty in the practice

of domestic design. The purely architectural side of the question has been intentionally ignored, as it would be going over ground that has been traversed again and again. Whether the feminine mind possesses an imaginative faculty in the fine arts only needing the necessary education to develop it is a matter on which the evidence is too conflicting to justify a definite decision; but as we have not enough really imaginative geniuses to undertake the work of providing comfortable homes for all who are prepared to build them this question may fairly be disregarded in considering the claims of women in domestic work.

It has been argued that the woman who takes up a profession must of necessity do so in the same whole-hearted way as a man to the neglect of any domestic training, and that she would in that case be on exactly the same footing in regard to domestic experience, and therefore her claim to superior capacity in this respect would fall to the ground.

If all our procedure were governed by strictly logical rules this argument is quite sound, as, given a man and a woman of equal ability, they must both, to achieve an equal degree of professional skill, devote the same proportion of their time to professional studies; but as no two persons are of exactly equal ability, and as very few have no interests outside their professional work, the contention we have referred to is inconclusive. It is quite likely that the man is giving part of his energies to some civic duty or some favourite sport, and the woman may recognise to a similar extent the claims of domestic duties. Thus, we may yet see the domesticated woman practising as an architect.

NOTES.

London University.

THE fourth Report of the Royal Commission on University Education in London deals with the question of housing London University. In the opinion of the Commissioners it is essential that no scheme can be put forward unaccompanied by a proposal to provide a site and buildings more convenient than those now occupied. Regarding the University as a great public institution it demands for its headquarters permanent buildings appropriate in design to its dignity and importance, and specially constructed for its purpose. The Imperial Institute does not fulfil these conditions and lies too far west; besides having never been associated with the University in the minds of the public, it possesses no dignified public hall such as the McEwan Hall, in Edinburgh, or the Whitworth Hall, in Manchester, nor has it suitable accommodation for the Senate, for Committees, the principals, and the headquarters staff. Neither does it provide for meetings of Convocation and the graduates and officers attending them. In addition, accommodation is desirable for a Union Club house, headquarters for the Officers' Training Corps, and rooms for professors, graduates, and students. The question as to whether a central library is desirable is left open, but in regard to this and provision for more advanced studies it is felt that

something beyond that provided in the various constituent institutions ought to find a place in the central buildings. Taking all these points into consideration, it is definitely recommended that immediate steps should be taken to find a suitable site of sufficient size to allow a large measure of freedom in determining the nature of the building to be erected, and the production of the Report has been accelerated in view of the limited opportunities for obtaining such a site in a central position. No particular district is indicated; possibly the Surrey side of the river might afford such a site as is foreshadowed in the report.

The Wellington Monument in St. Paul's Cathedral.

THE monument to the Duke of Wellington will shortly be completed by the erection of the bronze equestrian statue which Mr. John Tweed has sculptured from a model he prepared a few years ago, based upon Alfred Stevens' original sketch-model and pen-and-ink drawing preserved in the Victoria and Albert Museum. In our issue of May 28, 1910, we published illustrations of the monument as it then appeared with the trial model in position and contrasted with this a sketch of the original design used by Mr. Rickards in his paper, when comparing the more plastic treatment first intended by Stevens, which was subsequently abandoned in favour of the less satisfactory one with its four pediments that we now see. Our number of January 6, 1894, contains a view of the monument taken just after its removal, mainly at the instance of Lord Leighton, into the second bay of the nave arcade (north) from what is now the Chapel of the Order of St. Michael and St. George.

The Guildhall Improvement Scheme.

PLANS have been prepared by Mr. Sydney Perks, City Surveyor, for rebuilding, at a computed cost of some 50,000*l.*, the offices on the east side of Guildhall-yard, including the Irish Chamber (1826). The intention is to provide better accommodation, upon a site which extends as far as the "Guildhall" Tavern, by means of three galleries, each 70 ft. long, with several smaller rooms, for the Art Gallery in the upper floors of a new block to contain the Lord Mayor's Court, Irish Chamber, and other business departments. The entire scheme embraces the west side of the yard as well, where are now the Guildhall Justice Room and the offices of the Remembrancer and the City Solicitor above. The buildings on the east side occupy the sites of the collegiate church of St. Mary Magdalene and All Saints (north), and the adjoining Blackwell—more correctly Bakewell—Hall (south). With the Hall was incorporated the library—the first free library founded in England—which Richard Whittington's executors built on the south side of the church. Rebuilt in or about 1588 and again, after the Great Fire, Bakewell Hall had a west façade 105 ft. long, with a bold, overhanging cornice and pediment supported by carved modillions. In 1820 the Hall gave place to the (old) Bankruptcy Court, designed by William Fowler. In 1823 William Mountague, City Architect, built

the (old) King's Bench (Lord Mayor's Court) and Common Pleas, the former taking the site of the Guildhall Chapel, between which and the Guildhall lay Cut-throat Alley (see a plan in the *Builder* of June 4, 1910). The chapel was built by the Frowykes as London College, and dedicated to St. Mary Magdalene and All Saints in 1299. It was rebuilt in 1451 as the Church or College of Guildhall; it served latterly as a Court of Requests.

The Architectural Problem.

MR. SYDNEY PERKS, who is responsible for the restoration of Dance's front on the north side of the courtyard, has set himself no easy problem in respect of the treatment of the east and west façades. The existing front has, of course, an historical interest, which excuses much that can hardly be regarded as admirable from any other point of view, and one would scarcely desire to see two more façades of Dance's "Batty Langley" Gothic. At the same time, some sort of harmony should run through and link up the three façades, in order clearly to indicate that they belong to one and the same building. Perhaps this could best be done by keeping the general treatment on broad and simple lines, introducing an echo of Dance's fanciful conception in terminal features at the south-east and south-west corners. We shall look forward with interest to the architect's solution of this exceptionally difficult problem.

The Care of Art Treasures.

MR. EDW. HAMILTON BELL writes to the *Times*, in answer to the customary "outcry" concerning the removal of works of art to the U.S.A., to point out that really from the point of view of civilisation as a whole it is perhaps a good thing, as they are so much more zealously guarded—and, we may add, displayed—in that country. He animadverts on the management of Hertford House, instancing the wiring for electricity of the great chandeliers and the wanton exposure of the Jasper perfume-bearer of Gouthière, known as "La belle coupe." And certainly it seems as though this and other objects of "virtu" might suitably be enclosed in airtight cases to guard them from too appreciative fingering and the corrosive effects of our deplorable atmosphere.

Our Next Issue.

OUR New Year's issue will be, as usual, a special one, and it will be as attractive as its predecessors. Suggestions will be given for an "Imperial London," supplementing to some extent the drawings published in our first number this year. The development of the Surrey side of the Thames will be a feature of the scheme. Otherwise the issue of January 5 will be important. With illustrations by Mr. Henry C. Brewer, Mr. W. Walcot, Mr. Adrian Berrington, and Mr. A. C. Conrade, the pictorial side will be well represented; while reproductions of the work of Signor Angiolo Zanelli, the Italian sculptor, will give further interest to the beginning of our seventieth year.

ARCHITECTURAL SOCIETIES.

Nottingham Architectural Society:
The Law Relating to Building Schemes.

A GENERAL meeting of this Society was held on Tuesday, December 12, at the rooms. Mr. L. Y. Harris was elected an Associate.

Other business being disposed of, Mr. W. H. Taylor, Fellow of the Surveyors' Institution, Licentiate of the Royal Institute of British Architects and Barrister-at-Law, read the following paper, entitled "Some Notes on the Law Relating to Building Schemes":—

"There are several factors at work at the present time which may eventually give an impetus to the development of land for building purposes, namely:—

1. The Finance Acts of recent years.
2. The Housing and Town Planning Act, 1909.
3. The Garden City movement.

In districts where the balance between supply and demand is favourable.

And, although the second and third of these factors will doubtless tend towards the production of more comprehensive schemes in the future than have been projected in the past, owing to certain restrictions being removed which hitherto have retarded the work of development, yet I think architects and surveyors in whose hands the actual organisation of the work of development will lie may possibly be in some danger of overlooking the fact that notwithstanding that the conditions under which development will take place are changing, yet the law relating thereto is in many directions stationary, and more particularly on points which have a deterrent and hampering effect.

The broad general principles of the law affecting development schemes are quite well known and understood. It is when one descends to individual cases that one not infrequently finds these general principles difficult to apply; and also that they are often of a seemingly hampering and vexatious character, restricting the natural rights of the owner and circumscribing the range of the designers' scope; and when one is confronted with such cases one is tempted to a feeling of outraged liberty, forgetting that what appears to be a hardship on the individual is generally for the benefit of the community.

I propose to put before you a few points in relation to development schemes and the erection of buildings which have often been a source of trouble to the architect in the past, and most of which will again and again turn up in the future, despite the trend in modern methods of development and building and in legislation relating thereto.

One is apt to be so obsessed with the general lay-out of the work in hand as to overlook the small points which not infrequently render the whole scheme abortive, or at any rate involve an entire recasting after much work has been done and time spent.

These points may be considered under three heads, viz.:—

1. Laying out new streets.
2. Building lines.
3. Air space.

1.—Laying Out New Streets.

Where land is brought into the market and laid out in plots for building purposes, it may or may not be necessary to form new roadways where never before the public had any right of passage, but it would be safe to say that in every case there exists on or adjoining some part of the land an existing roadway used by the public; such roadway may be a "street," in the common meaning of the term, or a main turnpike road, a narrow country lane or even a mere occupation road; and, generally speaking, any such road affords building frontage of which the owner is not slow to avail himself and is consequently looked upon as an advantage, when in fact it may turn out to be a source of trouble and expense, for when buildings come to be erected abutting on such old roadway, the owner and his architect are often confronted with an objection by the local authority to the intended use of the frontage on the score of turning the old roadway into a "new street," which new street does not comply to the local regulations as to width and construction, etc.

This question as to when an old roadway becomes a "new street" has given rise to a great deal of litigation, all of which seems to me to have ended with no satisfactory results, for one cannot even now say with any degree

of certainty when an old lane becomes a "new street."

Barton v. Eccles Local Board was for a long time the leading case on the point, and seemed to establish the rule that an old highway repairable by the inhabitants at large became a "new street" within the meaning of the Public Health Acts when buildings were erected along it; so that where local by-laws required new streets to be 36 ft. wide, and building operations were commenced along a road, say, 24 ft. wide, the owner must throw sufficient land into the road to make up the width to 36 ft., and form and make up the added portion in accordance with local regulations; but, in effect, this case left the question as one of fact to be decided in each instance by the local bench of magistrates.

Following this, in some cases magistrates convicted owners of not complying with the local by-laws, which convictions in some cases were quashed by the Divisional and Appellate Courts, who sought to draw a distinction between cases where there were buildings on the opposite side of the roadway in question and where there were not.

The case of Devonport Corporation v. Tozer appears to overrule the doctrine enunciated in Barton v. Eccles Local Board, and to decide that the ordinary by-laws as to new streets do not apply to the case of building operations along an existing highway where the latter is not interfered with. It should be noted, however, that this cannot be taken as settled, for this case was really decided against the Corporation because they had omitted to obtain the consent of the Attorney-General to the proceedings.

The case of Smith v. Chorley Rural District Council decided that where a local authority have honestly considered plans submitted to them and they have decided that the proposed works amount to laying-out a new street no action for a mandamus to compel them to alter their decision will lie.

The result of this crop of litigation seems to be that where new buildings are being erected at the side of an old road repairable by the inhabitants at large, and there are no buildings on the opposite side, such building operations do not amount to laying-out a new street; but that if there are already buildings on the opposite side, the reverse may be the case, though this has not been definitely settled. A building owner is, therefore, left somewhat at the mercy of the local authority, for if they decide that what he proposes to do amounts to laying-out a new street, and he is convinced it is not, his only course is to proceed and to allow the authority to take the first step towards what may prove to be an endless piece of litigation, or to fall in with their requirements.

This is eminently a case where the surveyor to the authority could be consulted with advantage as to his views on the point, where there is any doubt, before much progress is made with a scheme, and so avoid waste of time and labour.

Another by-law relating to new streets in force in most districts runs as follows:—"Every person who shall construct a new street shall provide at one end, at least, of such street an entrance of a width equal to the width of such street, and open from the ground upwards."

To the "man in the street" this by-law means that every new street must have at least one end abutting on some other roadway, and that the line of abutment must be of the full width of such new street. And yet this, which is to me a very plain by-law, has been the bone of contention between authorities and owners in several cases, the former having attempted, and not unsuccessfully, to put upon it a strained, and, to my mind, an utterly ridiculous meaning.

The earliest leading case appears to be that of Hendon Local Board v. Pounce—commonly known as Pounce's Case—where the local board contended that by "entrance" was meant "means of access," and that the roadway on to which the new street joined must be also of the by-law width; so that a new street could not be joined on to an old road or street unless the latter was of the width required by the by-laws or was widened to comply with them. Unfortunately the judge in this case adopted this view.

It practically ties up the greater portion of land in country districts served by narrow lanes, if the local authorities so will it.

Fortunately few authorities appear to be taking up an unreasonable attitude on the point, and, in passing, I may remark that the

Corporation of this city have a similar by-law so worded that the absurdity does not arise.

Taken in its liberal and proper meaning I do not suppose there is any reasonably-minded person who would object to it, but even then it may in some cases cause great hardship owing to the change in other requirements as to new streets.

2.—Building Lines.

The next point in connexion with building schemes which almost every architect must run up against at some time or other, and which often requires very careful consideration, is the matter of the building line.

In entirely new districts where no building has yet been done the building line may generally be at the will of the designer, subject to compliance with any special local by-laws in force. But where buildings are already in existence the architect may find that the building line is already fixed for him, and that such line is in his case a particular nuisance, often restricting the general lay-out and sometimes rendering parcels of land more or less waste and valueless.

Most of the cases which occur in this connexion arise under powers conferred upon Corporations or urban authorities to define the building line, or under the Public Health (Buildings in Streets) Act, 1888, which applies only to urban districts.

With respect to the exercise of the former, any person aggrieved by the action of the authority is generally entitled to compensation, and, although in individual cases the prescribed building line may be obnoxious and detrimental to the owner, still he gets a solatium, whereas the powers conferred by the 1888 Act, especially where they are exercised in an arbitrary manner by the withholding of consent to the building line proposed by the owner for no apparent reason, may result in great inconvenience and loss to him; and should he seek to test the legality of the authority's decision, he will probably learn to his sorrow the really peculiar interpretations which can be put upon the provisions of this Act.

It is commonly thought that any question arising under this Act is one of fact to be determined by the magisterial bench; but when one comes to look into cases one finds some very puzzling results.

One point is that the existing buildings and the new one must be "in the same street" within the meaning of the Act, and it has been held in Ravensthorpe Local Board v. Hinchcliffe that for the frontage of two buildings to be in the same street they must be "in some degree of proximity."

This point came up for view in Warren v. Mustard, where the justices decided that the two buildings were in the same street, and convicted, and on appeal the Divisional Court upheld their decision. Mr. Justice A. L. Smith saying that with regard to the "question of the buildings being in the same street that was a matter of fact for the determination of the magistrates, and in this case they had determined that the frontage formed by the line of cottages was in sufficient proximity, and whatever he might think of their decision and however much he might regret it and regret the hardship it might cause to Mr. Warren, the court must (please note the word) adopt it."

Compare this with the case of Leyton Local Board v. Causton, where the magistrates refused to convict, but the Divisional Court reversed their decision.

In the first case it was decided as a *fact*, and being so decided was held not to be open to review, that the building did infringe the Act; whereas in the second case, which would appear to all ordinary persons a clear case of infringement, the magistrates decided as a fact that it was not, and then the High Court interfered with that finding.

In connexion with the question of the building line, I should like to draw attention to a case recently reported in the *Manchester Guardian*, and also in the *Builder*, which touches the architect very closely—in fact, touches him in his tenderest part, viz., his pocket.

Shortly, the facts were these. An architect was suing in the County Court for fees for preparing plans for the erection of some shops. He prepared the usual copies for depositing with the Corporation, who, after keeping them six weeks, intimated they could not pass them, as they intended widening the street by 15 ft. The defendant owner had seen the plans and had approved them.

Owing to the decision of the Corporation as to

the widening the plans were rendered useless, and the defendant refused to pay for them, contending that the building line was one of the most important points an architect had to comply with, and that it was the architect's duty to ascertain definitely where that line was before proceeding to draw the plans, and that if he neglected to do this he proceeded with the plans at his own risk; in the end the judge adopted this view.

At first sight I was tempted to regard the result as unjust, but when it appeared that the architect knew beforehand that a widening was in contemplation but not definitely decided upon, my sense of injustice was lessened, as any careful man would have endeavoured to have arrived at a definite line with the Corporation before proceeding with the complete plans, and would have obtained his client's instructions to negotiate, for which, of course, he could have claimed payment.

3.—Air Space.

Having successfully negotiated the obstruction known as the "building line," an architect may in ninety-nine cases out of a hundred fire away with his building without encountering further obstacles, but on the hundredth occasion may be unlucky enough to be caught in a trap with respect to air space. There is no necessity for me to detail the usual regulations as to air space about buildings, for they are pretty straightforward and seldom give rise to much difficulty. Unfortunately, however, the man who first drafted this rule would appear to have belonged to the fraternity of those who believe the world is flat in the literal sense, and to have been unaware that buildings are at times erected on a hillside.

Some years ago I had to deal with the question of air space in connexion with a building erected on a hillside. The circumstances were as follows:—

Plans of the house were submitted to the local authority, on which a level space of about 7 ft. was to be excavated at the back, and then a retaining wall about 4 ft. high erected to uphold the garden. The authority refused to pass the plans unless the hillside were excavated for 15 ft. from the back wall of the house, the latter being of such a height that an air space of 15 ft. wide was required by the by-laws.

This contention appeared ridiculous, and after considerable delay, filled up by argument with the Council's surveyor, the Council eventually gave way, and I for a long time was under the impression that the Council were legally wrong in their contention. In 1907, however, the case of *Holroyd v. Healy's Breweries* was fought out, where the circumstances were somewhat similar, except that the back wall butted up to the hillside and that the building was a suite of offices.

The magistrates convicted the owners of a breach of the by-laws; on appeal by a majority of the Court this decision was upheld. It is curious to note that all three judges described the result as ridiculous, Mr. Justice Darling remarking that as the by-law stood he did not see any use in the air space at the back, as a privy and ashpit might be erected on it, and there was nothing prohibiting these erections covering the whole space.

I believe the constructions put upon the by-law as to air space I have just described are not generally adopted on the one hand by the Councils, and on the other by owners, and I hope nothing I have said will incite anyone present to attempt to put such construction into practice."

A number of interesting points were brought up in the discussion, in which most of those present took part, and at the close Mr. Heazell proposed, and Mr. Gill seconded, a vote of thanks to Mr. Taylor for his instructive paper. Mr. Maylan supported this on behalf of the visitors, and also thanked the Society for their invitation.

WHITECHAPEL ART GALLERY.

Mr. Gilbert A. Ramsay has been appointed Director of the Art Gallery *vice* Mr. Charles Aitken who was recently appointed as Keeper of the National Gallery of British Art, Millbank. Mr. Ramsay was a pupil of Mr. William Leiper, R.S.A., and of the Glasgow School of Art. He was elected Master of the Junior Art Workers' Guild, 1911-12. In 1910-11 he was assistant to Mr. Aitken, and acted as Director in 1911.

SHOREHAM COTTAGE, KENT.

The design of the alterations and additions now being carried out has been influenced by the existing portion of the house, which was built in the latter part of the XVIIIth century, and is a good example of the quiet and unobtrusive type of house of the period.

The limitations of the site and the accommodation required for the additions necessitated a practically square plan. All the reception-rooms and best bedrooms have been planned to face south-west, with an outlook over the small River Darent (which runs through the grounds) and across to the neighbouring hills.

In order to keep the existing line of roof (a condition stipulated by the client) a large flat, carried out in reinforced concrete, is to be built, supported on 9 in. walls, and cantilevered over to hold the ends of the rafters of the tiled roof.

The hall is to be panelled with some genuine old Jacobean panelling, the property of the client, while the corridor leading from hall to dining-room is to be carried out in a similar manner, with a groined vaulted ceiling. The floor joists over the dining-room are to be of light oak moulded. All the mantelpieces have been designed by the architects in character with the house.

The walls are of stock brick covered with 14-in. cement rendering, while the cornice is of wood painted white; the tiles are partly taken from the old portion of the house which has been pulled down, and partly old hand-made sand-faced tiles. The exterior woodwork of the dormers, cupola, and windows is to be painted white.

The general contractors are Messrs. Holliday & Greenwood, Ltd., of Brixton, the ferro-concrete roof on the Indented Bar System; electric lighting and plant by the Edmundson Electricity Corporation, Ltd.; heating by Messrs. Cannon & Co.; strong-room fittings by the Bramah Lock Company; and lift by Messrs. Waygood.

The architects are Messrs. Moscrop-Young & Glanfield, Licentiate and A.R.I.B.A., of 20, Brook-street, Bond-street, W.

THE ÆSTHETIC TREATMENT OF CONCRETE.

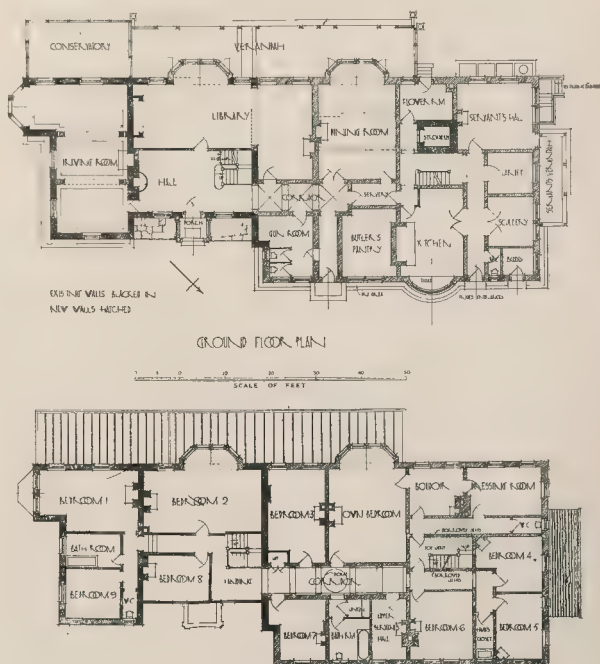
At the seventeenth ordinary general meeting of the Concrete Institute on June 7, in the Lecture Hall, at Denison House, No. 296, Vauxhall Bridge-road, S.W., Professor Beresford Pite read the following paper on "The Æsthetic Treatment of Concrete."

"I suggest, without any intention of humour or hypercriticism, and at the present stage in the study of design for concrete one can only venture to suggest, fearing to dogmatise that the simplest and directest royal road to ultimate artistic and architectural success in this material will be to eschew the process implied by the title of my paper. To this end, which is of course by way of preliminary caveat, I would beg you to endeavour, first, to remain in practical ignorance as to the proper meaning of the word "æsthetic"—this will not be difficult—and then to persuade you, if you possess a glimmering of its implication, together with a fuller comprehension of the almost limitless possibilities of constructive form attainable in reinforced concrete, that to relate so abstract a term as "æsthetic" with anything like "concrete," by means of the process at once mental and physical, which is implied by the word "treatment," had best be avoided, if it is at all possible under the circumstances in which you, as a constructor, may be placed.

That artistic satisfaction and ultimately an architectural development upon settled principles wait upon the honest and direct expression of constructive purposes and forces should not need demonstration. The construction of any direct and serviceable machine or building may be beautifully achieved without invoking consciously, in the slightest degree, the operation which we call æsthetic treatment.

Abundant illustrations have been offered of admirable accomplishments of difficult and novel constructive feats in reinforced concrete which are satisfactory without provoking artistic or critical consideration.

Such sensations of pleasure produced by mechanical skill are closely allied to the presumed æsthetics of beautiful design, though



Shoreham Cottage, Shoreham.

Messrs. Moscrop-Young & Glanfield, Architects.

unconsciously and necessarily free from all academic standards or canons of architectural style.

Surely not far removed from the success of a gigantic reinforced concrete silo or culvert is that of the ancient fireproofing by means of a stone vault on a great scale of our English cathedrals. A small and deeply interesting early example, to which aesthetic purpose cannot legitimately be imputed, is the plainly constructed Norman chapel of St. John in the Tower of London. The constructive steps thus attained are simple but pregnant developments of building skill, which developed without a break in four centuries into the elaborate aesthetic treatment of the vault of Henry VII.'s Chapel at Westminster.

If it were possible we would gladly surrender the necessity of discussing the aesthetic treatment of concrete and rely upon the common practical sense, which is Palestine to the uttermost, and knows only art as the contents of picture-frames and pedestals. If reinforced concrete design could be left to the artistic ignorance of engineers, rather than to their imitative instincts, such a development of concrete design might come to us in as few generations as came through the masters of the mason's craft throughout North Western Europe during the four centuries which succeeded the Norman Conquest.

But we do not live in the past, though upon it; and are necessarily part of the world to which an architectural or æsthetic semblance has importance. Architecture in her styles is a harmonic treatment of form, and whether there is recognisable music in the expression of natural forces or not, the note around us is contagious, and we cannot but echo it, parrot-like, until gifted with a mental perception of the meaning and purpose of the forms we repeat. To the architecture or æsthetic treatment of concrete we must therefore give heed.

For some considerable time the æsthetically minded have desired an original style of architecture. They feel sure that those antiquarian reproductions which by so many are called designs incessantly fetter true artistic inventiveness.

This longing it at once natural and unreasonable, because repeated features and ornaments do become tiresome, and because, do what we will, we cannot be otherwise than ourselves, and that is to say be original.

To the faded architectural imagination the advent of a novel system of construction in a practically new material suggests an opportunity for that freshness of design which will fulfil the hope of seeing an original style spring into being.

Welcome to the new constructional motive and material is at any rate secure amongst these progressive artists. Has not their opportunity at last come?

But the question immediately arises whether the provision of a new material and the application of novel methods of construction are in themselves sufficient to produce original æsthetic design, fresh in any refreshing sense, having attractiveness and elemental beauty.

We will grant at once that the new building will be strictly true to its principles, and unmistakably express itself as having the thinness of reinforced concrete with unaffected realism. It shall be built in truth, but the problem remains to design it with beauty. Truth as to material, by which we have learnt to mean without imitiveness of any other material such as marble or brickwork, and truth as to the structure of its design, by the avoidance of unreal features of constructive import. Both may be present in all simplicity and sincerity, but it may be confidently prophesied that an æsthetically affected and backward-looking generation will refuse to be satisfied with such unadorned veracities, and will repeatedly demand beauty until something sweet, with the taste of which it is thoroughly familiar, has been stirred into this simple fare, like sugar with mortar in winter to prevent freezing.

This sweetness to the eye of the world is the subject for our present consideration. No artist can exist, and the architect as little as the musician, in any other character than that of a public nuisance who does not tune his harmonies for the public approval, and appreciate his unremunerated responsibility to the community when building his personal imaginations for the public gaze and common weal.

The architect, therefore, sets about his task of producing pleasantness of aspect, and, guided

by an instructed instinct, he collects ideas bee-like out of the material of precedents and motives in the world around him. This collecting, observation, and reproductive design are closely connected, for variation of design is related to quality and quantity of observation almost though not quite always.

But before we further consider the most practical aspect of the subjects for students, namely, from what fields can these precedents and motives for the æsthetic treatment of so novel a construction as reinforced concrete be collected, we must briefly state a few conclusions involved. The premise must be first made that over all building which assumes nobility or claims permanence the laws of the mistress of these two qualities of high appeal and of endurance are sacrificed—and it cannot be that any concrete building need be at once mean and temporary—no exception can be pleaded to those laws or principles of architecture which are manifested as imperative from the Great Pyramid onwards through the building history of the world.

This assertion of high aim, coupled with permanence, is perhaps the more necessary to-day to deliver us from the consideration of the fascinating and practical subject of exhibition buildings. It is difficult, extremely so, to judicially settle the claims of a great class of constructions purposely endowed by æsthetic treatment with a wide popular appeal to consideration as works of architecture. This task cannot be enlarged upon now—reasons for judgment on the White City are deferred—but the rule holds for all our constructive work that permanence is a vital quality to real architecture, and that ephemeral building aiming at merely pictorial or historic ends must justify itself on shallower grounds than permanent concrete building.

I. There is no common artistic sense or experience which will enable the educated and cultivated world of to-day to accept the native and naked facts of a reinforced concrete building of ordinary purpose, such as a warehouse or office block, as anything else but barbarous, apart from some harmonious relation to and reflection of traditional architectural forms and proportions which by long usage and historic meaning have established themselves as alphabets and symbols of artistic expression in the building art.

Proportion in the abstract as good or bad is easy to talk about; it may be poetical, but is difficult to embody and unpractical. It would be idle—and this subject is a delightful *corpus vile* for exemplification—to direct an architect that his reinforced concrete building must be simply true to its material and purpose, and rely only on good proportions for success and artistic effect. There is a good deal of professional and critical cant to the tune of efficiency and pre-eminent importance of good proportion. Let us suggest a simply corrective question. What is the canon of proportion that the prescriber specifically has in his mind's eye? If it is an indefinite perceptive sense of fitness please apply it forthwith to this concrete case, wherein the height of every floor and practically the size and shape of every opening in the walls is settled by canons of use and practicability—whether warehouse, hospital ward, or mammoth residences.

Queen Anne's Gate, Mansions, Westminster, may, with all due respect to its inhabitants, be suggested as a sufficient example of proportion settled by practical canons without reliance on architectural style or ornaments.

II. Therefore, in the absence of artistic power to educe beauty out of the utilitarian factors of reinforced concrete building, we are compelled to adopt and adapt those past architectural forms which have canons of proportion and have attained by long acceptance a force of expression. These architectural forms are of age-long growth and development, and though they come to us in stone and brick, and therefore seem unsuitable and unreal if applied to a novel artificial material, we have none other with which to make that public appeal for sympathy which is the basis of the artistic sentiment.

To put it crudely, the classic forms of Greece and Rome, the Gothic forms of England, the Renaissance treatments of Italy are, after all, the staple of the only possible architectural treatment of the reinforced concrete architecture to-day.

III. A third brief conclusion is that the

application of colour, whether in simple tones or various patterns, to the surfaces of concrete buildings, though such treatment may be purely æsthetic, will not suffice as a satisfactory or as an architectural solution of the problem.

The concrete mass necessarily has colour of some sort, whether perhaps the grey of a cement or the pink of an aggregate. This colour quality, which may be said to be native, may be modified for æsthetic purposes, but it really appertains to the texture of the building, and belongs to another branch of this subject. The propriety of securing an even consistency of tone or a clean contrast between applied cement dressings and the general surface of the wall is, however, to be mentioned here. The application of colour implies a direct intellectual exercise in æsthetics of considerable range. It also involves differences of colour material, though essentially between the red and white colour-wash bands of a sunlit Oriental front and the marble veneers of a mediæval Venetian palace there is little difference of æsthetic treatment. Each method is obviously applicable to walls of any core, from Babylonian earth mounds to reinforced concrete partitions.

The æsthetic treatment of concrete would soon be settled and its practitioners assigned positions in schools of painting and decorative art if a superficial treatment were sufficient, whether in economical distemper or costly marble and ceramics. Imagination will soon fly to the Baghdad markets for tile and to Byzantium for mosaic, and neither association nor scope will be lacking.

But how in any scheme of superficial decoration shall we deal with the new problems of plastic form and design? Colour may be a palliative, an enrichment of surface, in that it accepts, and does not control, the forms of the building to which it is applied. Its application does not deal with the greater principles and factors of architectural effect, those of proportion, of light and shade, of grouping, and of ornamental detail.

IV. A fourth conclusion is that in texture alone, that is, in the quality of the surface, lies the ultimate differentiating quality of the æsthetics of any building material, and especially of ferro-concrete. The architectural elements of a style may all be simulated in stucco as if of stone, even to the reproduction of pseudo-constructive jointings and of such originally economic mason-craftiness as rustication. The vital æsthetic difference is that of the texture. The simulation may extend to the superficial elements, but when detected, as it inevitably will be, under the stress of natural forces, the æsthetic value is sensibly lessened, and with the repulsion of artistic sense and sympathy condemnation follows.

The texture of native materials has a special beauty; that of artificial materials, as of brick-work acquired by craftsmanship, both of manufacture and of laying and bonding, also has intellectual interest.

It is to this essential or native character in concrete that we must look for its expression of texture. Though there is a touching interest in the impress of the timbering on the concrete work of the Roman Emperors, modern fancy shattering cannot be suggested, for there will be no lasting result from mere sporadic impulses of imagination. The creation of rusticated joints by sinking moulding fillets, or such like methods of creating a surface design, need not be even proposed, for texture is that element which is solely necessary to, and therefore indispensably connected with, a certain material, and by which you may identify and appraise it. It applies not merely to the detailed description of smooth, joined, or rusticated treatment of a cement surface but to the character of the area, its extent, and the necessary absence or presence of jointings, and other evidences of construction.

The influence of texture is mainly felt in the design and treatment of ornamental detail. The relation of material to design compels attention in such ornamental details which involve consideration of facility or difficulty of execution. A hard and intractable material naturally restrains the mouldings and carvings which are designed for execution in granite, while the surface of a pliant, easily-wrought brick or stone wall suggests enrichment and delicacy of moulding.

The suggestiveness both of modelled or cast mouldings and enrichments in plaster is also of a different character, and this difference is the texture.

Modifications of form in the drawing of detail owing to increased ductility of the material should be welcomed and insisted upon as emphasising a characteristic which it is foolish and timid to disguise.

The absence of building up joints is alone sufficient to afford a fine speciality to concrete design. The jointing of stonework, originally a painful necessity, as the ancient use of monoliths shows, has become an artistic resource of great value, artificially rusticated joints bearing evidence to this fact. The value to scale of such jointings is primary, but their relation to texture is certainly not to be forgotten.

In concrete we have now monolith walls, and this is fact and texture at once. The other quality of scale, lost through the absence of jointing, will have to be recovered by other architectural factors of detail.

The summary of the brief conclusions that we have stated on this subject of unusual magnitude is negatively that:

I. We have found no instinctive guidance towards an unbiased and fresh originality in the æsthetic treatment of both a novel building material and principles of unusual application.

II. That invocations of good proportion or of other abstract principles, though useful as weapons of criticism, are similarly of no assistance in creating a system of design.

III. That superficial colour treatments are insufficient for architectural expression, though valuable in assisting æsthetic effect.

IV. Positively that the texture of concrete surfaces modifies and imparts special character to any forms employed for architectural purposes.

Therefore, while modern considerations of utility and of novel constructional methods determine the proportions and may spontaneously, or subconsciously, if this may be proposed, develop qualities which require an æsthetic character, the only method by which definite progress in an architecture of concrete will be possible to us is by the scholarly and critical employment of the traditional plastic forms of architecture modified by and adapted to execution in concrete; and this is its æsthetic treatment.

We must, therefore, undertake a short review of the development of some of these traditional forms, and note the sources and purposes of their origination.

Encouragement in our researches will await us. There are enough flowers in the world-wide garden of architecture for any collector of æsthetic motive or effect. But to extend the field in any universal way is both needless and unwise. The flowers are around our feet, familiar enough and offering ample material both for imaginative design and popular comprehension. The current architectural detail of stone or brickwork which finds expression in spite of translation from native into artificial building materials is all we need if we will face the problem, really one of the perception of artistic adaptability and of refinement, of texture, that is of the essential relation of the material to the forms into which it is moulded.

Egypt and Greece will furnish us with architectures in stone the æsthetic elements of which are derived indirectly and idealised from other materials. Rome will show us the application of merely architectural forms for æsthetic purposes, while in the mediæval building alone in stone and the kindred crafts shall we find a direct æsthetic development coinciding with constructive progress.

Egypt.

It is of singular interest that one of the earliest known architectures of the world, that of the Nile Valley, has in constructive principle a reinforcement of a weak concrete walling. The original Egyptian dwellings were built of mud strengthened by a systematic reed structure.

The sloping surface of the thin walls, the placed reinforcements at the angles and at the crown of the wall exemplify in a crude form the principles upon which we depend in the design of reinforced concrete.

Then the salient forms of this reed and mud architecture of between five and six thousand years ago in the course of generations crystallised by means of painted representations into an idealised system of design having sacred associations and acquiring an æsthetic quality which was not present to its originators.

These forms are ultimately employed probably after more than a thousand years, frankly to condition the structure and decoration of that most opposite of building material, Egyptian granite, and under structural conditions and by methods which are a subject of wonder and admiration to moderns. In the result of historic action the non-æsthetic reed and mud architecture becomes, in a material foreign to its constructive conditions, the standard and source of a grand architectural style.

A translated future may thus await the unabashed directness of non-æsthetic concrete building, an aspect of the subject excluded by our title.

Greece.

A similar transmigration from a utilitarian construction of wood into an æsthetic architecture of marble evolved itself in the progress of Greek building art. The crude and practical modern post and lintel structure of the pre-Mycenæan age, with its necessary framings, templates, and panels develop, when translated into the more enduring but less ductile marble, into the graceful order of column and entablature, having triglyphs and metopes, abacus and echinus.

The attainment of perfectly artistic craftsmanship spontaneously generated a sense of æsthetic system in the age-long development of the Ionian and Dorian architecture of the Greek world seems to be evident.

The original constructive system becomes idealised in Egyptian architecture, probably through the medium of painted representations of the original types, and in Greek building through the development of a singular and pure power of drawing—that is, of perception of abstract beauty in form. The original method grows crude and barbaric as the refined representation of it develops, and slowly the world becomes possessed of definitely original types of architecture, both having this common element, that they are æsthetic treatments by translation into an alien material of an originally non-æsthetic system of building.

Rome.

Rome seems seemingly nearer to us in her likeness to the general conditions of our own building life. Her genius is expressed in vast works of engineering skill, such as the great Thermae, the Flavian Amphitheatre, and the Pantheon. It is, of course, to the point, though time does not permit for its thorough discussion, to instance the Roman system of reinforced construction of vaults as containing and illustrating the principles of a concrete architecture. The elucidation of the æsthetic quality from this architecture will illustrate the unconscious æstheticism of gigantic masses and of curved lines of great scale; this I would venture to define wholly as engineering. The conscious æsthetic treatment—which we may assign to the artist—is in Roman work of a superficial and unrelated character, and upon the discernment of this the architectural critic exercises his vivid and forked lightning. This superficial treatment consists in the non-functional application to the concrete building of foreign, to wit, a Grecian order of architectural expression. The relation, or want of it, between these æsthetic treatments and the building, both as to mass and material, is exemplified with singular completeness by a state wedding-cake. The internal mass is of concrete, the external adornment of a white cementitious material, sweet to the taste, in which ornamental forms are created, often taking a direct architectural and Roman semblance. Our title as a phrase exactly describes the result both of Roman architecture and of this confectionery as an "æsthetic treatment of concrete."

The development of the Grecian method of covering wrought stonework with a thin coating of plaster into the system of plaster work decoration employed, originally for interior by the Romans, opened the way to the reproduction of architectural forms entirely divorced from constructive obligation; and later on, through the Renaissance of Roman architecture in the XVth and XVIth centuries of our era, this became a popular and economical means of æsthetic treatment.

The Roman reliance on a foreign type of architectural ornament detached from its constructive purport may seem in the light of the "Seven Lamps" to be unworthy and vain, but it continues even to-day to dominate universal civilisation, and the entablature cornice and typical capitals employed by

ancient Rome are still the ensigns of her architectural empire among the northern barbarians throughout the colonies of their descendants and the world which learns from them.

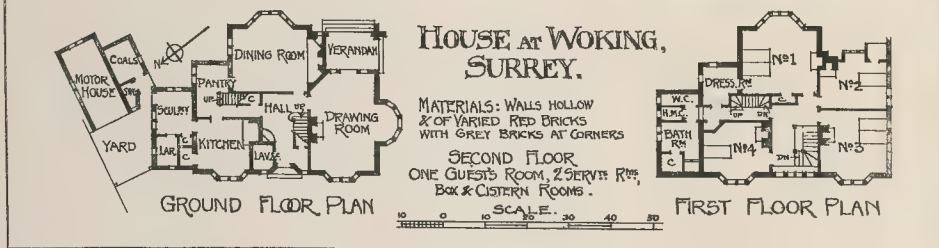
The alienation of material and construction from æsthetic development and use is illustrated by these three national architectures of Egypt, Greece, and Rome; in the first two by an idealised looking backward to ancestral habits, and in the last only by a recognition, almost as unintelligent as it is unrefined, of the need of a popularising element which shall sweeten essential constructive utilitarianism—the confession of this need being both interesting and important to us and our subject.

Gothic.

The development in Gothic architecture of a purely constructive system of design in stone gradually and surely developed its own æsthetic quality. This truth in the last century demanded a recognition denied to it during the generations of the Renaissance art. The attainment of architectural beauty in the mediæval building crafts is a subject fraught with high importance to the modern constructor. The simple ignorance of classic antiquity, and consequently the unaffected confidence in themselves which characterise the Gothic builders, may also generally be said to sum up the relation of the civil engineer and designer of steel structures to-day to æsthetics. So long as these men are blind to the light of antique art, so long, therefore, they are free from error, their ignorance is bliss, and the direct accomplishment of many utilitarian purposes by them has created a Gothic architecture in iron and steel as virile and pregnant with spontaneously æsthetic effects as the early mediæval constructions of stone vaults and flying buttresses. If a sober ornamentation were possible, emphasising in metal, as the mediæval masons did in stone, or the carpenters in half-timbered construction, their artistic pride in the craftsmanship of their material, these would be angels; but they are men after all, and can afford us but little leading in our study of the future treatment of reinforced concrete. We have yet to attain that distant mount of vision from which the Forth Bridge, a gasometer, or a reinforced concrete silo will appear as works either of æsthetic value or intention.

But in each of the mediæval crafts as exercised by men of artistic sense trained only in the manipulation of one material we may find abundant instruction in the adaptation of accepted form to materials of varying texture. Long before any architectural grammar was established upon the orders the pointed Gothic arch and incipient tracery of stonework provided the staple for the only decoration added to woodwork, as a multitude of English church doors and screens will show, and similarly buttresses, pinnacles, and spires, severally constructive features developed in stonework, create a forest of decorative fancies in the wooden canopies of choir stalls. Another remarkable adaptation of prototype design by texture is afforded by the ornamental plastered ceilings which attained such richness, artistic vigour, and naturalness in the later Elizabethan time, being developed from the elaborately ribbed pendant stone vaulting of the latest Tudor period; a movement short enough to be covered by one long life. This æsthetic treatment of a plastered surface might suggest that we have arrived at some final illustration of the possible direction for concrete façades, but though yielding suggestions for ornamental freedom, I would point out that, like colour, it is a method of decoration which has æsthetic qualities and charms under architectural conditions, such as fitting the panel or soffit of a room, and offers no substantial guidance for the establishment of a system of design. But this instance affords a valuable example of the influence of material on practical design in the resulting appreciation of the quality of the texture.

It is in complete grasp of the æsthetic quality of any fine work of architecture in its achievement of satisfactory proportions by traditional standards, in its own movements towards a higher progressive originality in the design and employment of detail, in its essential relation to the purposes of the building which it expresses, and its grasp of the higher qualities of monumental and poetic design that the pathway to an æsthetic treatment of concrete lies. The newness or constructive motive, the wide possibilities of extent and achievement,



Messrs. Marshall E. Walker, A.R.I.B.A., & Arnold W. Harwood, Architects.

the freshness of opportunity in textural adaptation are all incentives of great value to the architect, but not one, two, or all the newer qualities will justify him in neglecting the pursuit of a higher analysis of the true developments of architectural beauty or justify him in expecting that the path to glory in concrete architecture will be gained by any shorter route than that of the most earnest application and appropriation of the message of all the great architecture of the past. Till this has been seriously and perhaps slowly undertaken the path of least resistance, of safety and modesty, has been, and still is, to mask the concrete quality by a surface treatment of stone or brickwork in which only those æsthetic problems arise with which experience has qualified us yet to deal. The effervescence and haste to demonstrate the elastic possibilities of the new method and material of which many examples are provided by our Continental confrères have interest and are characteristic, but I hope, and am sure, that the great and lasting future of the concrete architecture that is now taking root downwards amongst us

will bear fruit of permanent charm, and that being our anticipation it certainly will embody and express a due appreciation of those great principles the fruits of which are offered to us by the historic monuments of architectural art."

HOUSE AT WOKING.

This house was designed by Messrs. Marshall E. Walker, A.R.I.B.A., and Arnold Harwood. The walls are built hollow, and of red bricks of varying shades, with the corners of dark grey brick. The roof is of dark tiles of uneven surface, and the external woodwork is stained; the windows are fitted with iron casements.

The front entrance leads through a small lobby into a square hall with panelled dado and angle fireplace in 2-in. grey bricks and basket fire. The drawing-room is 23 ft. 3 in. by 15 ft. 9 in., with a bay in addition overlooking a small stone-paved garden. A verandah, 12 ft. 6 in. by 9 ft., is approached

from the drawing-room. The dining-room is 18 ft. by 15 ft., with a large bay and angle (the latter in 2-in. varied bricks) in addition; the ceiling has dark-stained beams and the woodwork is in oak. The offices are carefully planned and roomy, and a back staircase is provided. On the first floor are four bedrooms and a dressing-room, the largest bedroom being 18 ft. by 15 ft. without the bay window; this bedroom has a specially-designed fireplace of Dutch bricks and tiles.

On the second floor are three bedrooms, the largest 16 ft. by 13 ft., with box and cistern rooms. Most of the bedrooms have good hanging or store cupboard leading from them.

NATIONAL PORTRAIT GALLERY.

Amongst the most recent acquisitions are the bequests of a portrait in oils, by John Jackson, R.A., of Samuel Prout (1793-1852), water-colour painter, and a portrait in oils, by George Clint, A.R.A., of Thomas Goff Lupton (1791-1873), mezzotint engraver.

THE LONDON ARCHITECT'S PROCEDURE.

MANY a young architect, starting practice in London, must have felt that his training has left a gap in the knowledge required of him. He is presumably well equipped as regards his qualifications for designing and superintending the execution of his conceptions, but he has not, as a rule, had an opportunity of familiarising himself with the numerous questions of procedure that arise both before and during the carrying out of his work. It is with a view to supplying this deficiency that we have decided to give the following notes on London procedure with the District Surveyor.

Responsibilities of Building Owners.

Conditions under the various London Building Acts affecting the interests of building owners grow more complicated as time goes on and fresh legislation is enacted. Every London architect realises the necessity of keeping all such conditions clearly in mind, so as to leave no loophole for any suspicion of negligence on his part as a professional adviser. It is true that in the majority of cases the immediate legal responsibility attaches not to the owner, but to the builder. But, apart from the fact that the builder's responsibilities may, in the event of his bankruptcy, for instance, devolve upon the owner, cases are rare in which the expense consequent upon any infringement of the Acts can be fixed upon the builder; and there are many responsibilities attaching directly to an owner after his building is completed and in occupation.

Acquiring a Building Site.

Amongst various questions affecting the choice of a site are those arising under the Act of 1894. Before advising his client to acquire a site the architect will naturally consider what can be put upon it. He will ascertain if it is situated in a street formed after August 7, 1862, as affecting the height of his building, or if in a street formed after January 1, 1895, as affecting the position of the open space required at the rear; and with regard to these questions he will read especially sects. 41, 47, and 49. If there are old buildings existing on the site, he will probably prepare plans of these to be certified by the District Surveyor.

Such plans need not show the internal arrangements of the old buildings. It should be remembered that the District Surveyor's certificate applies only to the extent of the buildings. It does not, for example, apply to the positions of windows; so that, in the matter of ancient lights, however valuable certified plans may be to establish the rights of a servient owner, they are of little use for purposes of a dominant owner.

The right to rebuild to an old frontage line which is nearer than 20 ft. from the centre of the street must be maintained by means of certified plans; and, although this is not compulsory when the frontage is more than 20 ft. from the centre, the District Surveyor's certificate affords valuable evidence.

Notice to District Surveyor.

The notice which the builder is required to serve upon the District Surveyor should first be perused if not drawn up by the architect. Whether in the case of a new building or of alterations to an existing one the intended use of the building must be stated in the notice, otherwise the District Surveyor will not know how the rules of the Acts are applicable; and, although the architect may feel very sure of having complied with all rules, he should fix due responsibility upon the District Surveyor by making him fully cognisant of the facts of the case.

A prudent architect will obtain from his client written instructions as to the intended use of the proposed building. Sometimes the future use is dependent upon uncertain opportunities of letting or selling the property, and in such cases the building must be so designed that it may lawfully be used for any purpose for which it may be

required. A building, for instance, that may be let either for purposes of wholesale or retail trade must be constructed as a warehouse, and must also have the open space at rear required for domestic buildings. In such cases the alternative user should be stated in the builder's notice to the District Surveyor.

The importance of close attention to all such questions as the above will be realised when it is remembered that an owner is liable to penalties if he allows his building to be used for purposes other than those for which it is legally adapted; and it is extremely desirable that, in the event of a prosecution, an offending owner should not be able to impute negligence to his architect. In the Act of 1894 rules for habitable rooms under sects. 45 and 70, rules for the separation between the trade and dwelling-house portions of a building under sect. 74 (2), rules as to conversion of buildings under sect. 211, and the various penalties provided under sect. 200 may be studied with advantage.

Every building notice is deemed to be evidence as against the builder of the nature of the proposed work; but it is also evidence that the District Surveyor has been duly apprised of certain facts. In order, therefore, to be prepared to prove service of such a notice the architect will insure its being sent by registered letter, and he will, of course, retain a copy of it.

Deposit of Plans with District Surveyor.

In the case of the alteration or erection of a public building, plans showing the proposed construction are required to be deposited with the District Surveyor. They should accompany the building notice, and the latter should contain some reference to them, such as "erection of a public building to be used as a concert hall, in accordance with plans herewith sent," etc.

Except in the case of metal-framed buildings plans of buildings other than public are not required to accompany a notice, though there are cases where it is convenient to illustrate a notice by means of plans.

With metal-framed—usually steel-framed—buildings the architect should supply the plans and copies of calculations of loads and stresses which are required under the London County Council (General Powers) Act, 1909, to be furnished to the District Surveyor. It will be observed that when notice is served in respect of the proposed work a preliminary fee equal to one-fifth of the whole fee chargeable, has to be paid. There is no difficulty in calculating the amount payable upon a new building. Upon additions or alterations, however, the amount has to be calculated upon the portion of the building structurally affected, and this is a matter requiring the architect's attention.

Certificates by District Surveyor.

A builder should not be authorised to cut away any chimney-breast in a party wall unless he can produce the District Surveyor's certificate that this may be done without injury to any building. Such certificate may be of value in the event of complaints by adjoining owners of damage to their property, and the architect should therefore not allow such works to be done upon mere verbal permission of the District Surveyor.

Upon the completion of any public building or of any alterations to one, the architect should obtain the District Surveyor's certificate approving of the construction; and the owner should be warned that, in the absence of such certificate, the building cannot lawfully be used. His attention should be drawn to this rule under sect. 78 of the London Building Act, 1894, and to the penalties for its infringement provided in sect. 200 (11) (j). Of course, in the event of any dispute with the District Surveyor a certificate of approval might be obtained from the Tribunal of Appeal.

Cases of Difference with the District Surveyor.

Preliminary discussions with the District Surveyor upon proposed works are, of course, quite unofficial, but they are often of great assistance to an architect, who learns by them that in different districts different views upon some points prevail. It may happen

that the architect finds himself at variance with the District Surveyor about some particular work which his client wishes carried out. Of course, it is possible to carry out the work in dispute, leaving the District Surveyor to take whatever proceedings he may think necessary. But a prudent architect will hesitate to risk his client's money by carrying out work which may have to be altered or taken down. The best course is for the architect to serve the District Surveyor with a separate notice, clearly specifying the intended work in question. On receipt of this the District Surveyor, if he objects, will serve upon the architect a notice of objection, which he could not do if the matter in dispute did not appear upon the face of the notice, but was only discoverable from the plans. Within fourteen days after service of the notice of objection the architect may appeal to a magistrate to overrule or confirm the decision of the District Surveyor.

If any requirements of the District Surveyor with respect to steel-framed buildings seem to be unreasonable, an appeal to a magistrate may be made within fourteen days from the Surveyor's notice of such requirements.

When a structure is condemned by the District Surveyor as being dangerous, and the owner is served by the London County Council with a notice requiring him to take down or repair the structure, it may happen that he wishes to dispute the necessity of such requisition. When this is so he may, within seven days from receipt of the notice, write to the Council, requiring that the subject be referred to arbitration. It will rarely happen that an architect can advise his client to take this course, but he should warn him of his position before allowing the seven days to elapse.

Altered Conditions in Buildings: District Surveyor to be Notified.

Few building owners are aware of certain responsibilities attaching to them under the Building Acts in circumstances where few would think of consulting a professional adviser.

Rules as to the uniting of buildings formerly contained in sect. 77 of the London Building Act, 1894, were repealed and re-enacted with some modifications in the London County Council (General Powers) Act, 1908. Sect. 18 (3) provides that when buildings which have been united cease to be in one occupation the owner or owners shall forthwith give notice of this fact to the District Surveyor, and shall cause all openings made in walls for the purpose of uniting the buildings to be stopped up and all timber in the walls not in conformity with the Act to be removed. A penalty of 5*l.* attaches to the infringement of these rules, but it may be further remarked that, should loss of life occur by access of fire through openings unlawfully remaining in a wall, a far heavier responsibility would rest with the building owner.

Fees to District Surveyors.

The fees payable by the builder to the District Surveyor upon completion of the work should, of course, be included in the contract sum, but the owner is legally liable to pay them in the builder's default. Hence he might, in certain circumstances, pay them twice over; to avoid which contingency the architect should, before granting his final certificate, demand production of the District Surveyor's receipt.

KING EDWARD VII. MEMORIAL, DELHI.

The full amount, 33,300*l.*, has been subscribed for the All-India Memorial at Delhi. Sir Thomas Brock, R.A., is appointed as sculptor of the equestrian statue, which will be erected on a site between the Alexandra Gate of the Fort and the Jumma Masjid.

SIR WILLIAM Q. ORCHARDSON MEMORIAL.

The memorial to the late Sir W. Q. Orchardson, R.A., will consist of a reproduction of the bust of the artist, which was sculptured by E. Onslow Ford, R.A. Mr. W. Reynolds-Stephens has been asked to make a design for a tablet to be set in the "Artists' Corner" of the crypt of St. Paul's Cathedral.

GENERAL NEWS.

Professional Announcements.

Mr. Thomas Sladdin, F.R.I.B.A., architect, of Salisbury, Rhodesia, has changed his address since 1910 to P.O. Box 103, Salisbury, Rhodesia.

The partnership between Mr. A. E. Cogswell, architect and surveyor, Prudential-buildings, Portsmouth, and Mr. J. E. Rake having been dissolved, Mr. Cogswell has commenced practice on his own account.

Royal Academy of Arts.

The Keepership rendered vacant by the death of Mr. E. Crofts, R.A., has been filled by the election of Mr. A. C. Gow, R.A.,

Lecture Theatre, Royal Institution.

An extensive scheme of improvement and decoration has been carried out, *ex impensis* Sir James Dewar. The scheme comprises the substitution of mahogany for most of the painted deal work, a new plaster-moulded ceiling, the widening of the staircases, and additional electric lighting. The apartment is famed for its acoustical properties—Faraday said it was "almost perfect as a lecture-room." It was constructed in 1800 from the plans and designs of Thomas Webster, Professor of Geology, University College, who was then employed by Sir Joseph Banks and Count Romford as clerk of the works for adapting the premises in Albemarle-street for purposes of the Royal Institution. The Classic façade was added by L. Vulliamy forty years afterwards.

Waterloo Terminus Improvements.

On December 18 was opened to the public the new approach for vehicular traffic which forms part of the extensive scheme which is still in progress at the Waterloo terminus of the London and South-Western Railway. A broad and spacious roadway from Westminster Bridge-road supplants the old steep approach to the main line from York-road. The new road affords a direct access, with an easy gradient rate, to the platform level in front of the enlarged South Station. The former ascent from York-road is now closed, and all vehicles will leave the terminus by a spur-road to the Lower Marsh exit. The new road will ultimately be extended along the entire length of the station frontage now being made in Waterloo Bridge-road.

Cope and Mitre for the Bishop of Chichester.

A presentation has been made to the Bishop of Chichester, by parishioners in the diocese, of a cope and mitre made in the School of Embroidery, St. Margaret's Convent, East Grinstead. The cope was designed by the Rev. F. Geldart, of Woking; it is of cloth of untarnishable Japanese gold upon a white silk ground; the hood is worked upon white damask having a blue border; the orphrey is worked upon blue and green shot silk in elaborated tracery of green, red, and gold. The mitre is on white silk, edged with a blue border, in which is a running design of green and gold leaves with red insets. The mitre and the clasp of the cope are richly jewelled with sapphires, garnets, topazes, amethysts, emeralds, and moonstones.

More Diaries.

We have received from Messrs. Charles Letts & Co., Southwark Bridge-buildings, S.E., a parcel of some of the many excellent diaries which they publish. The reputation of the firm for the variety and suitability of their productions is well established, and it is evident, judging from the diaries before us, that Messrs. Letts can satisfy any ordinary—and often unusual—requirements in diaries. There are the kind of diaries with which most people are familiar, and in addition we notice the "Schoolboy's Diary," which has met with general acceptance, many of the large public and other schools, we are informed, having their own editions. A similar diary, the "Schoolgirl's," is issued for girls. Then there is the "Boy Scout's Diary," a new issue for 1912, and published under the direction of the Chief Scout; the "Gardener's Diary" is another new diary for 1912. The firm's diaries contain as usual the "Self-Opening Tablet," and also the 1,000*l.* insurance. This year the firm have made it possible for the public to register the insurance coupon with the stationer at the time they buy the diary, a convenience

and saving of trouble which the public will no doubt greatly appreciate.

The "City Diary and Almanack, 1912" is a useful work of reference to the City man, for it constitutes an up-to-date and reliable guide to the City in its many ramifications. It contains in particular a complete list of members of the Corporation; the names and addresses of the Clerks of the Guilds; particulars of the City Churches; and full information as to the personnel of the various municipal and parochial organisations of the one square mile. The "Diary" proper gives three days to a page, and is interleaved with blotting paper. The price is 1*s.* It is published at the *City Press* Offices, 148 and 149, Aldersgate-street, E.C.

The Post Office London Directory.

The Post Office London Directory for 1912 (Kelly's Directories, Ltd., 182-4, High Holborn, W.C.) made its appearance as promptly as usual and as much up to date as any previous issue. The remarkable accuracy of such a stupendous work, and the painstaking care which must be taken in its production, are the salient facts relating to a volume which may fairly be called indispensable, and which, it is difficult to realise, our forefathers, prior to some 113 years ago, were without the help of; and while London remains what it is one cannot think of a time when the Directory will cease to be published. In addition to the well known divisions of the streets, commercial, trade, and Court, there are others containing legal, Parliamentary, official, postal, clerical and parochial, conveyance and banking information. The Directory, with London county suburbs, can be obtained in one or two volumes, and it includes two excellent maps. The London Directory may be had in the following forms: Complete Edition, 32*s.*; Small Edition, 18*s.*, containing the Official, Commercial, Court, Parliamentary, Postal, and Banking; Commercial only, 12*s.*; Trades, 12*s.*; Streets, 12*s.*; Court, 5*s.*; Banking, 3*s.*; the London Directory and the County Suburbs Directory may be had, printed on fine paper, bound together in one volume, at the price of 40*s.*, or, printed on the usual paper, in two volumes, price 43*s.* 6d.

COMPETITION NEWS.

Parliament Buildings, Winnipeg.

H.M. Trade Commissioner for Canada (Mr. R. Grigg) reports that the Provincial Government of Manitoba intend to obtain plans at once for new Government buildings at Winnipeg, estimated to cost over 2,000,000 dollars (about 411,000*l.*). It is stated that the Minister of Public Works will invite sketch designs from prominent architects in the United Kingdom. Of these about five will be selected, and the competitors submitting them will be invited to make out full specifications and plans, from which a final choice will be made. The conditions may be seen at the office of the High Commissioner for Canada, 17, Victoria-street, S.W.

BOOKS.

Church Study. By M. M. PENSTONE. (National Society's Depository, Westminster. 4*s.*)

This book is intended for the school teacher and the amateur rather than for the architect, and must be judged from that point of view. It deals with the building, its furniture, and its officers, and does so very thoroughly.

It is one of the most satisfactory signs of the times that teachers are trying more and more to arouse the interest of their pupils in the world in which they live. Only by teaching the children can we hope to raise the artistic feeling of the nation.

As in most modern teaching, the author intends that the parish church should be visited and, if possible, lessons actually given on the spot.

The book deals with the history of the officers and rites of the church, as well as with the architectural details. With the former we have no concern here, except to say that the author is fair, tolerant, and historically accurate.

The book is remarkably thorough, and profusely illustrated with photos and drawings.

The latter are by Mr. John T. Lee, F.R.I.B.A. In the next edition we hope that certain defects will be remedied. Where illustrations of buildings or parts of buildings are given the name of the place should be mentioned. Where types of windows are shown this is not essential, though desirable, but drawings of church towers and a photo of a crypt lose greatly in interest when the name is not given. Illustrations are included of examples of later work, often neglected. Thus the fine view of the XVIIIth-century oak gallery and the fine three-decker pulpit at Whitby is especially interesting. The view of Baker's tomb at St. Bartholomew-the-Great is good, and should interest all Londoners.

The author states that the legs of a Crusader are crossed, and does not make it clear that any great benefactor of the Church might have the same privilege accorded them. There is abundant evidence that many men who never went on a crusade are shown with their legs crossed. Often it will be found that he built or enlarged the church.

The author mentions that in the reign of Edward VI. the Crown confiscated great numbers of chalices and patens, but does not state that Elizabeth ordered that these should be replaced. Though it is probably that the cost of replacing them had to be borne by the parish, yet it shows that the Queen had no sympathy with the plundering propensities of her predecessors. Similarly she dissociated herself from their iconoclasm by ordering the restoration of those monuments which had been damaged.

When modern work is shown it should be stated, and when old the approximate date. In the drawings of lecterns, stained glass, etc., it is not always easy for those who have not made a deep study of the subject to be sure whether the work is copied from old or new work. Of course, those who have studied these subjects much can tell at once, but it is not for them that the book is intended.

In dealing with the church plate some attention should have been given to the XVIIth and XVIIIth century patens, chalices, and flagons which still exist. It is far more likely that the children will see them pre-Reformation ones.

The author points out that church towers were used for defence; the following instances might have been given to help prove the statement. In 1010, after the disastrous rout of the East Angles, the Danes ravaged the countryside. At Balsham, Cambridgeshire, they slaughtered man, woman, and child. One man alone escaped by holding the narrow, winding stairway of the tower. Though these early towers had not the thick walls of the later Norman ones, yet they were strong enough to give some shelter to the inhabitants. The Danes were usually bent on plunder, and so "travelled light." They had no heavy war engines to batter down the walls.

The photo of the tower at Clymping, Sussex, showing one of these fortress towers, is of great interest.

The book is well arranged and accurate. It is based on modern methods of teaching, and should be of the greatest use in spreading a real appreciation of architecture past and present.

The Composition and Strength of Mortars.

By W. J. DIBDIN. (London: The Royal Institute of British Architects. Pp. 54, with forty-five diagrams and many sheets of tables. 5*s.* net.)

This is virtually Mr. Dibdin's report on the series of experiments upon lime mortars which he was commissioned to make in 1907 by the Science Standing Committee of the R.I.B.A., and forms a most valuable contribution to architectural empirical science. The greater part of the book comprises tabulated results of the various tests, together with a comprehensive series of diagrams.

The observations made, over 1,700 in number, deal with the following subjects:—

The tensile and compressive strengths of mortars when composed of white chalk, Dorking greystone, and blue lias limes mixed with five different aggregates in varying proportions.

The adhesive properties of stock and Fletton bricks and of various aggregates.

The composition and durability of ancient mortars.

The experiments under the first of these heads were made one month, three months, twelve months, and two years after mixing, and it is interesting to notice that in many cases both tensile and compressive

strengths sensibly depreciated between the last two tests, this depreciation being most marked in the case of poor mortars containing too large a proportion of aggregate, and being probably due to the loss of capillary attraction with the drying-out of the moisture. Another interesting result of the experiments is the refutation of the theory that in mortars of the same ingredients proportions of one to three may be depended upon to give the best results; as regards both tension and compression, and in one case has nearly three times the crushing strength of a similar mortar in the proportion of one to three. The selection of the best variety of sand for a particular matrix will, in many cases, be greatly facilitated by reference to the results of these tests, and the advantage or otherwise derived from the presence of clay is made clear in respect to the mortars tested.

Exigencies of circumstances forbade the carrying out of the intended tests upon brass, but German Government engineers supplied the necessary information from the extensive experiments which have been made in that country, and a very interesting chapter on the subject is included, which clearly shows that exceedingly powerful mortars result from a proper use of this material.

Tests for adhesion were applied to stock and Fletton bricks and five different aggregates, the lime used being uniform. The Flettons show greatly superior results in each test, their average adhesive strength being double that of the stocks.

In examining ancient mortars, samples were obtained from various localities and of representative periods, and the results of their analysis shows the weathering properties of a given mortar with greater certainty than the most careful laboratory experiments upon recently-made mortars can afford. The examination of these mortars strikingly confirms the deduction already made that the one-to-three rule in mortar making is by no means a reliable one.

One lesson among others this book must impress upon the minds of all who read it—the necessity for very careful reference to previous tests before the ingredients and proportions of a mortar for important works are specified. The wrong aggregate, or the proper aggregate in wrong proportion, may mean a mortar of very inferior quality to one just as easily obtainable.

CORRESPONDENCE.

Decoration of Chelsea Town Hall.

SIR.—The first article in your issue of December 22 has a heading which led me to hope that at last a real "Scheme of Decoration" was under consideration for a public hall.

I find, however, on reading it that the article related solely to the subjects and treatment of pictorial panels, and throughout the article these only are referred to when "a controlling scheme" is spoken of.

It therefore seems worth while to point out that a series of quadrangular panels, even when occupied by masterly paintings, do not by themselves constitute the decoration of an interior. The most passing acquaintance with the decorative works of the great Italian painters would show that in no circumstances could they think of dealing in this way with paintings intended to be decorative. They knew too well that detached pictures, however harmonious with each other, do nothing for the building itself. They knew that if the pictures were to perform a "decorative" function their colours must not stop abruptly at the edge of a panel, but must be also used to express the architectural forms, and extend the harmony beyond the confines of the picture to the building itself—of which it then became a part—possibly the most admirable part.

No artist of note, from Giotto and his school onwards to Michelangelo, or even to Correggio and Pordenone, treated decoration as a question of separate pictures. The pictures were the most interesting and beautiful part of the decoration in which the accessory features played the important part of connecting them with the building which they helped to adorn. This is a fact which the painter of to-day seems to ignore. J. D. CRACE.

The Policy of the R.I.B.A.

SIR.—With reference to my motion for Associates having equal representation on the Council to that of Fellows, I have postponed bringing it forward at the meeting at the Institute on January 8 next, inasmuch as the great pressure of other business at that meeting will prevent its proper discussion and adoption.

I shall, however, bring this motion before the business meeting at the R.I.B.A. on March 4 next, when I still hope that all Associates interested in the subject will attend and support it.

Your correspondent "Swallowite," in his letter published in your last week's issue, is quite wrong when he says that I termed the Licentiates "no class." I have never used such an expression, neither have I ever referred to any "back door" as a means of entrance to the Institute. I have always aimed for far higher ideals than this, nor do I think it advisable to talk about any "line of attack" as he does; but we must all endeavour to strengthen our forces and bind them together, and so obtain our just demands by constitutional and logical methods.

HORACE T. BONNER, A.R.I.B.A.

SIR.—I have read with considerable interest the recent letters of complaint by various Associates, and from the tone of them and from the views expressed by many men in conversation it seems to me there is a deep-rooted feeling of discontent which is not confined to Associates, and it is hoped that a large number of members will attend the business meeting on January 8 and voice their complaints against the suicidal policy of the Council in no uncertain manner. At the same time I wish to offer a protest against the attitude of certain Associates; they seem to wish to join together with common complaint, excluding the Fellows. This dividing of class from class is not only regrettable, but it is quite unnecessary; the object in view is the same for Fellows and Associates—we wish to preserve the status of the Institute and to defend it from attacks from without and within. F.R.I.B.A.

Architectural Assistants and the Office of Works.

SIR.—Mr. Dudley Ward, as representing the First Commissioner, in his answer on the 15th inst. to Mr. Noel Buxton in the House of Commons, when asked to "state the classes and the total number of architects employed in his Department," and "what number of them are Associates or Licentiates of the Royal Institute of British Architects," makes no mention of the class numbering forty termed "Architectural Assistants," of whom nineteen are Associates or Licentiates.

This omission is all the more curious seeing that Mr. Dudley Ward had his attention drawn to this class very distinctly by Mr. Philip Snowden in the House of Commons as recently as the 24th ult., and he then stated he would consider establishment for "a number of professional men engaged in the Office of Works termed 'Architectural Assistants,' who possess their Board's certificate of technical efficiency, some of them being members of the Royal Institute of British Architects, Surveyors' Institute, and allied societies." And, more recently still (on the

7th inst.), he replied to Mr. Philip Snowden in the House that "the desires of each member of the 'Architectural Assistants' class should be ascertained, so that all of the class shall have the opportunity of being placed upon the established list."

Of course, the reply under review was furnished by those in office under the First Commissioner, and upon whom he relies for all his facts, and the list thus supplied to him being incomplete, was incorrect, and, therefore, may we not assume that the cost of the staff in salaries, therein stated to be 534 per cent., to be also equally incomplete, and, in fact, has been so stated to be, to the extent of another 3 per cent., by the President of the Royal Institute of British Architects?

THE WHOLE TRUTH.

The Statue of Achilles.

SIR.—As Mr. E. Swinfen-Harris rightly remembers, the Achilles statue was standing before the Crimean War. The mistake arose from a confusion of military heroes, the statue having been erected to the Duke of Wellington in the year 1822. From a public advertisement soliciting subscriptions from the ladies of England towards erecting a monument to the Duke of Wellington one learns it was intended that this would take the form of "a facsimile of a statue by Phidias, representing Alexander the Great taming Bucephalus." This was a trifle unfortunate, as Phidias must have been dead quite a hundred years before Alexander the Great saw the light. The Committee got out of the difficulty by putting the Duke's head on the statue and introducing him to the public as Achilles. The author is unknown, but Westmacott stuck on the sword and shield. It was cast from cannon taken from the French, but when brought to the Park on June 18, 1822 (the anniversary of Waterloo), it could not pass the gates, and about a month elapsed before it was properly placed. It was uncovered on July 14, and met with the usual outburst from the public; a certain celebrity of the day going so far as to inform the shocked readers of the *Morning Herald* that "if his mother, who was a Newcastle woman, had caught any of her children looking at such an object she would have soundly whipped them." What the ladies who subscribed for the statue thought may be better imagined than described, for it is said that from the day it was uncovered the Wellington Drive was abandoned.

HERBERT SHEPHERD, A.R.I.B.A.

Suburban Gardens.

SIR.—As an artist who for some years has studied with much interest the question of the beautifying of the innumerable small and ugly suburban gardens the monotonous type of which exists in thousands I have been greatly encouraged by the many letters of appreciation I have received of my book, "My Old World Suburb." Since you were kind enough to notice it favourably on its publication last year many of the public have adopted my plan of reform in their small gardens, and I have just received a typical letter from a lady enclosing a photograph of her small town garden which she has reformed (last autumn) on these lines. One point strikes me—that were the garden-owner to consult an expert at the outset the result would undoubtedly be better still.

G. HILLYARD SWINSTEAD, R.I.



Garden in Bedford.

EDITORIAL SUMMARY.

The leading article, "The Architect's Clerk," is suggested by the papers and discussion at the Royal Institute of British Architects on the 18th inst. on the "Newer Responsibilities of Architects."

A second article, entitled "The Woman in the Case," deals with the possibilities of architecture as a profession for women (p. 766).

In "Notes" columns (p. 767) will be found observations on: "The Guildhall Improvement Scheme"; "The Wellington Monument in St. Paul's Cathedral"; "London University"; "The Care of Art Treasures"; "Our Next Issue."

A report of a meeting of the Nottingham Architectural Society appears on p. 768. A paper was read by Mr. W. H. Taylor entitled "Some Notes on the Law Relating to Building Schemes."

At a meeting of the Concrete Institute in June last Professor Beresford Pite read a paper on "The Aesthetic Treatment of Concrete." The paper is printed in full on pp. 769-772.

An article entitled "London Architects' Procedure" appears on p. 773.

Book notices (p. 774) are: "Church Study"; "The Composition and Strength of Mortars."

In Correspondence columns (p. 775) will be found letters on: "The Decoration of Chelsea Town Hall"; "Architectural Assistants and the Office of Works"; "The Policy of the R.I.B.A."; "The Statue of Achilles"; "Suburban Gardens."

The monthly illustrated review of Engineering (p. 777) contains: "The Sitter Viaduct, Switzerland"; "L.C.C. Regulations as to Reinforced Concrete Buildings"; "Foundation Loads"; "Homogeneity of Beton"; "Reinforced Concrete Bridge at Cork"; and "Applying Cement Mortar by Compressed Air."

The Building Trade Section (p. 784) contains: "Factory and Commercial Property Sales, 1911"; "The Employment of a Specialist"; "The Budget and the Building Trade"; "Edinburgh Master Builders' Association"; "Projected New Buildings in the Provinces."

In "Legal Column" (p. 787) will be found some remarks on "Water Charges."

MEETINGS.

FRIDAY, DECEMBER 29.

Junior Institution of Engineers.—Visit to the factory of Messrs. Otto Mondel, Ltd., margarine manufacturers, at Southall. 3 p.m.

WEDNESDAY, JANUARY 3.

Institute of Builders (Koh-i-noor House, W.C.).—Mr. A. W. Gattie on "How to Cheaper Transport," with reference to the Building Trade. 4 p.m.

THURSDAY, JANUARY 5.

Junior Institution of Engineers.—Presidential Address by Commandatore G. Marconi, on "Engineering Considerations in Wireless Telegraphy," has been postponed.

ILLUSTRATIONS.

Royal Academy Schools.

LAST week we illustrated the designs of Mr. Binning and Mr. Bucknell, submitted in the Gold Medal and Travelling Studentship Competition, and this week we reproduce the drawings of Mr. Adrian Berrington and Mr. John C. Rogers. The article in our issue of December 15 should be read in connexion with the work of these and other Royal Academy students.

Since Mr. Berrington's design for an "Open-Air Bath," drawn when he was a student of the Liverpool School of Architecture, was reproduced in the *Builder* (1906) his work has become familiar to our readers. His design for a "Loggia in a Public Garden" obtained for him the Travelling Studentship (60*l.*) of the Royal Academy last year, and his sketches made during his tour in Scotland were much admired when shown recently in the Exhibition of Students' drawings. His unsuccessful design for the Gold Medal, 1909—"A Nobleman's Mansion"—was illustrated in the *Builder*, April 14, 1911.

Last year Mr. John C. Rogers obtained the Silver Medal for his Measured Drawings, "The College at Westminster School"; these were illustrated in the *Builder*, May 19, 1911.

FIFTY YEARS AGO.

From the *Builder* of December 28, 1861.

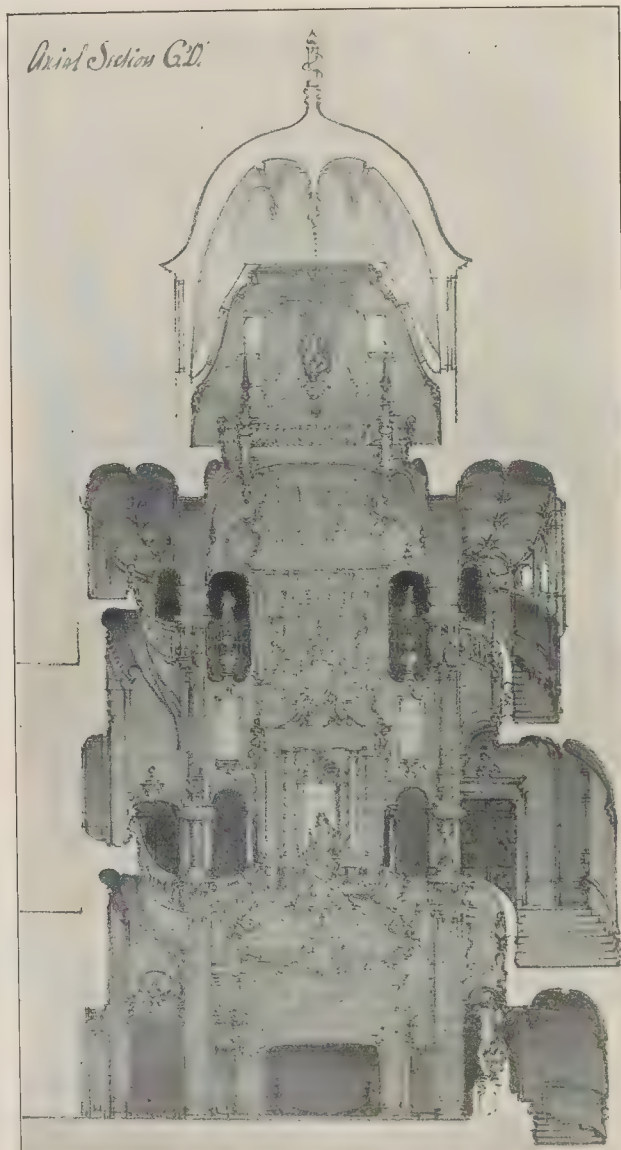
Metropolitan Improvements Hopeless.

LONG though it be since complaints have been made of the numerous straits and incongruities of the London thoroughfares, but little has been done to remedy the palpable evils which obstruct traffic. Grand things are projected, such as the stupendous sewage scheme and the embankment of the Thames; but great improvements might be made by only attending to small matters; and important easements might be afforded to the incessantly rolling multitude by only opening small straits and removing obstacles from the causeways of ancient intercommunication.

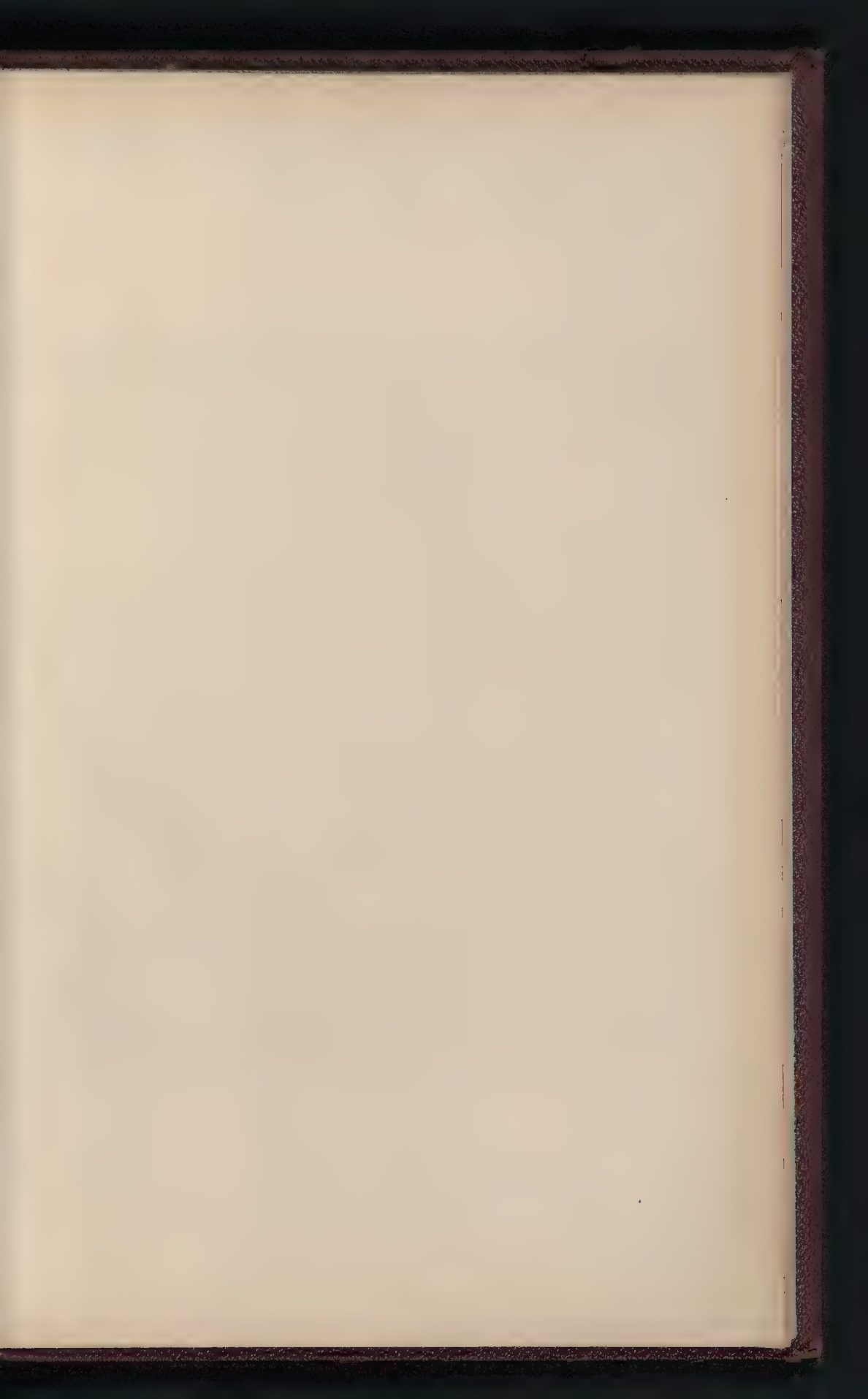
If alterations were turned to improvements

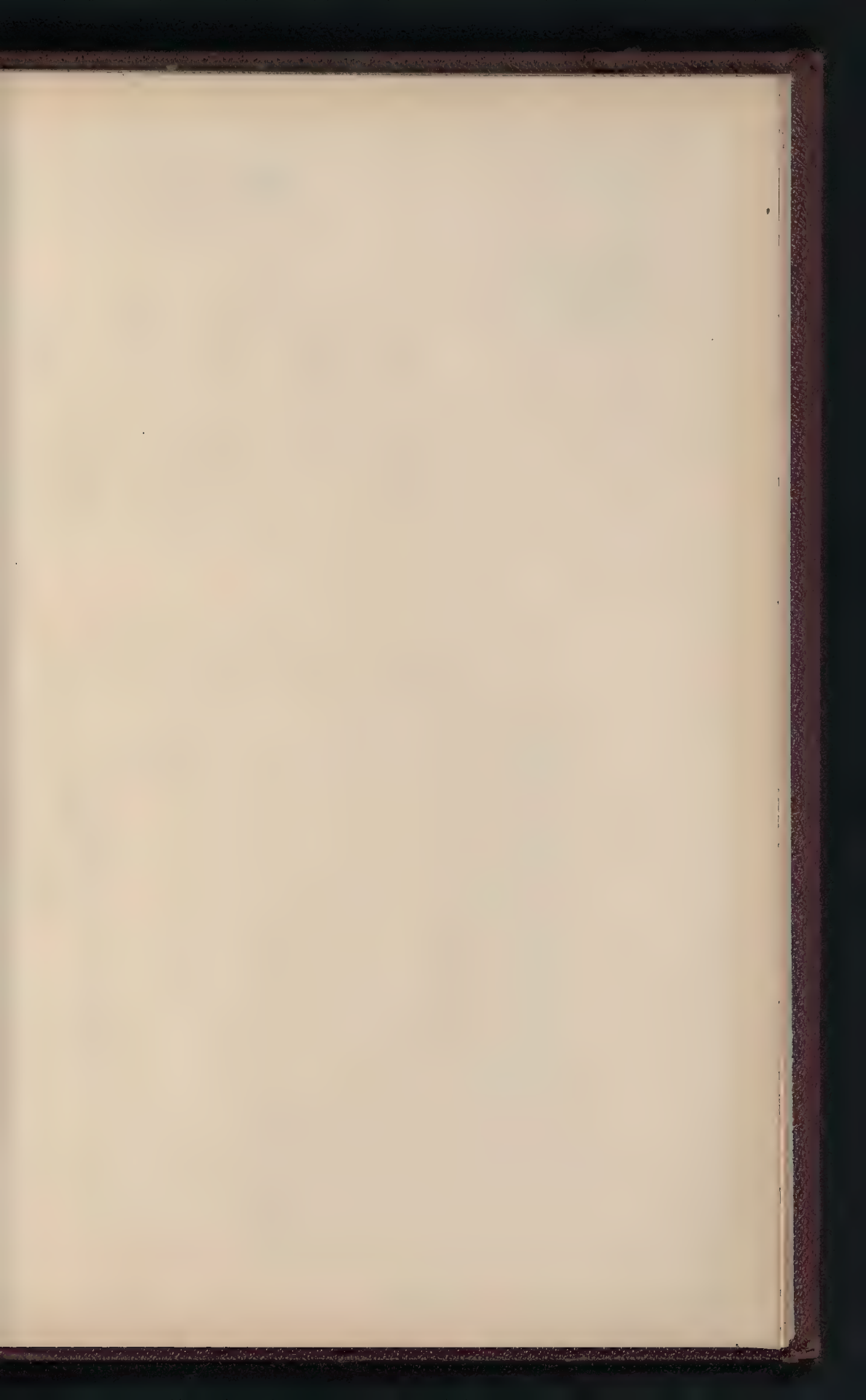
in the old thoroughfares—to abating nuisances where they exist, to widening the choked gorges of such routes as Holborn, Chancery-lane, the Strand, clearing an opening northward, from Clement's Danes, by Russell-square, to Hampstead-road; striking out a leading line from London-bridge, on the south side, to Westminster (giving vent to all the intermediate bridges); then Londoners would acknowledge that some *real regard* was shown for improvements, and that the expense of the Board of Works was not wholly thrown away.

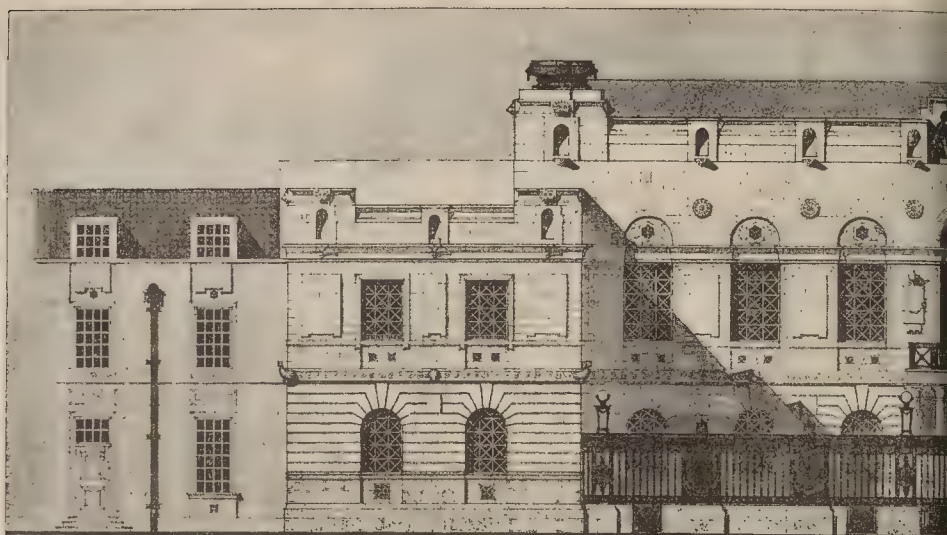
The localities susceptible of improvement within a City range of 50 square miles are very numerous; the means for amendment are without stint: the requirements should not then be thought beneath the care of a minister who could easily find a modern Æmilius to illustrate the office of Ædile.



R.A. Schools, 1911: Design for the Gold Medal, by Mr. Adrian Berrington.





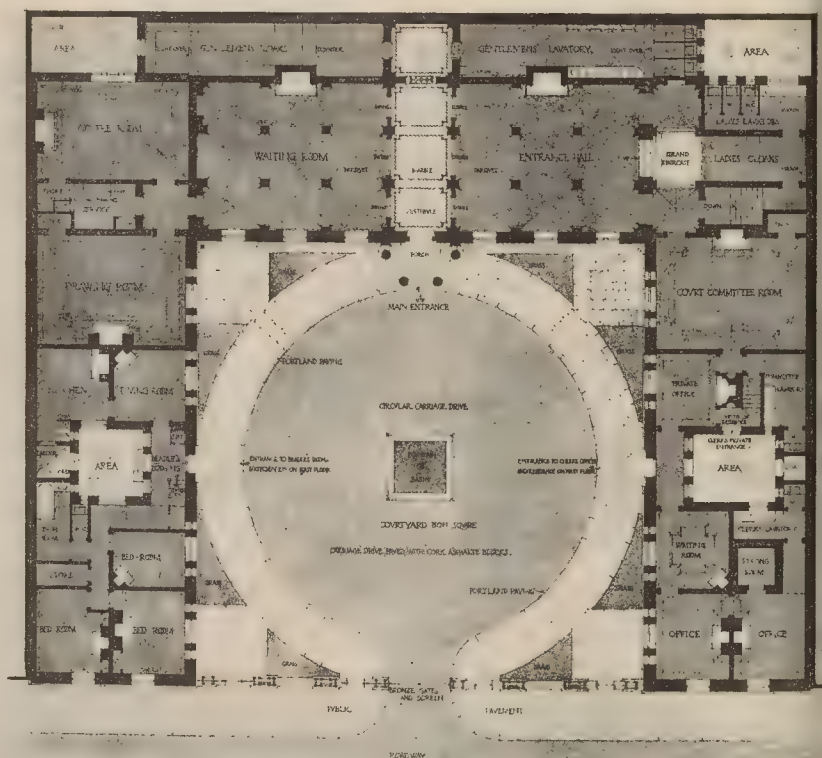


OLD HOUSES ABYTTING

FRONT E

10 5 0 10

SCALE



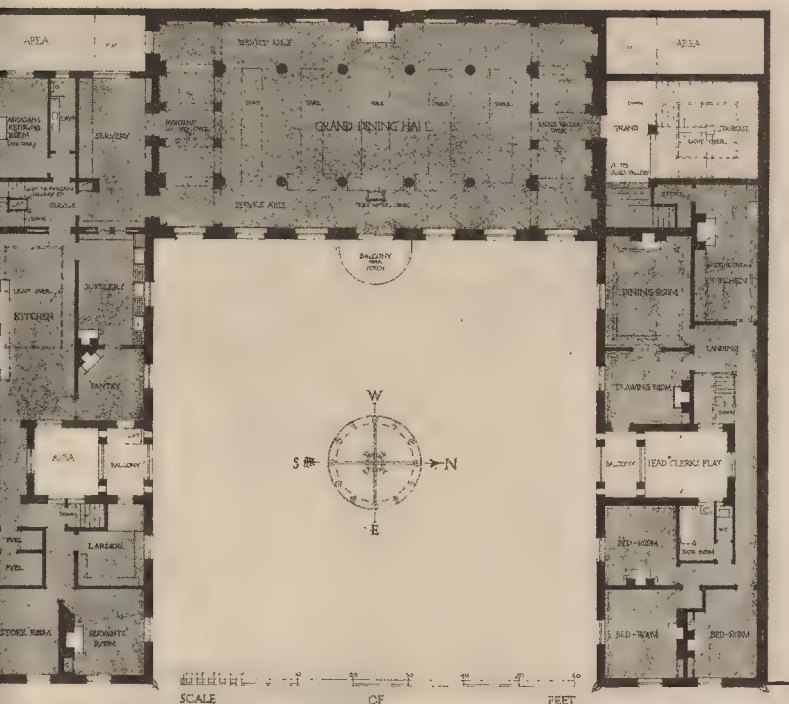
GROVND FLOOR PLAN



OLD HOUSES ABUTTING

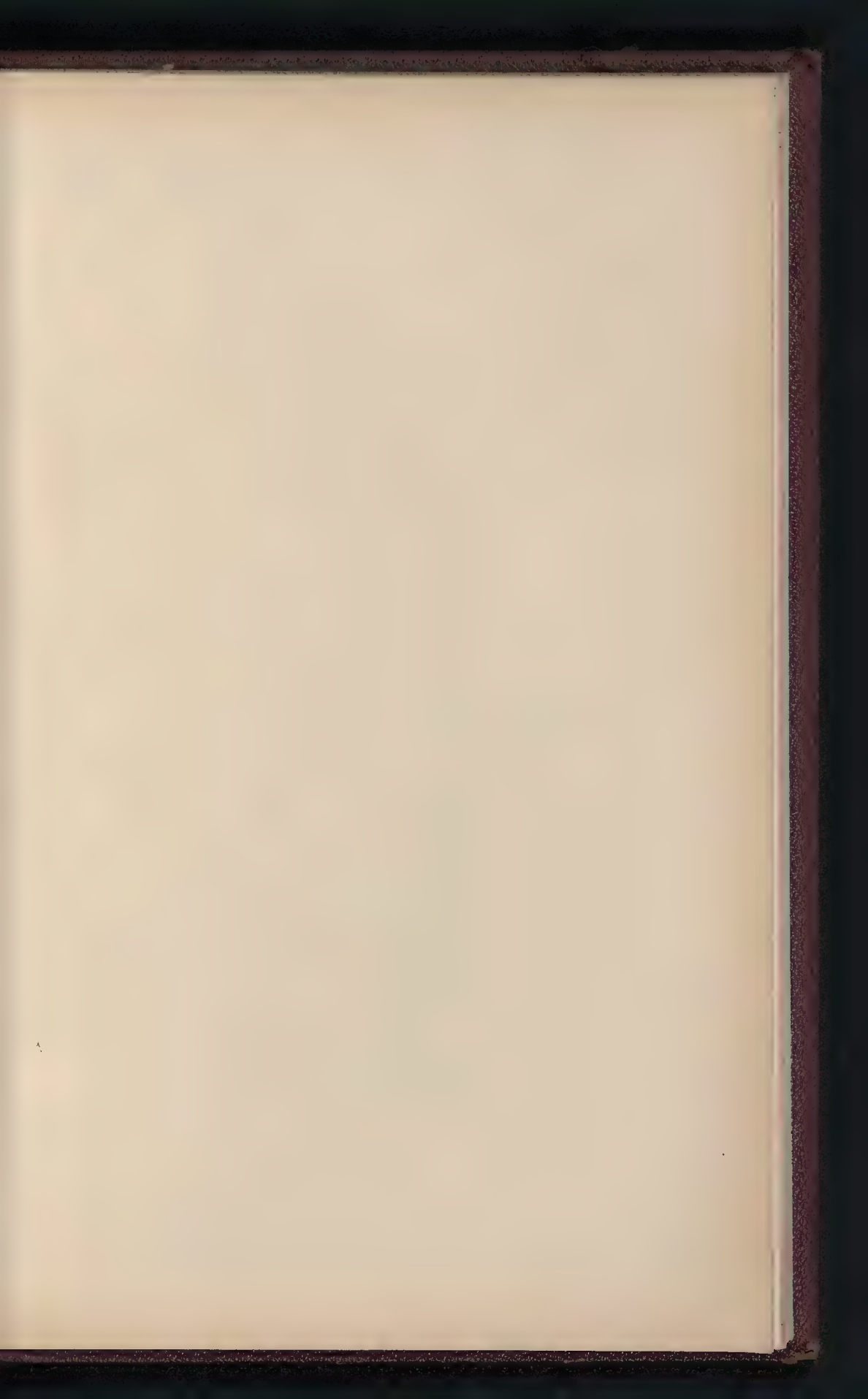
ATION

ET.

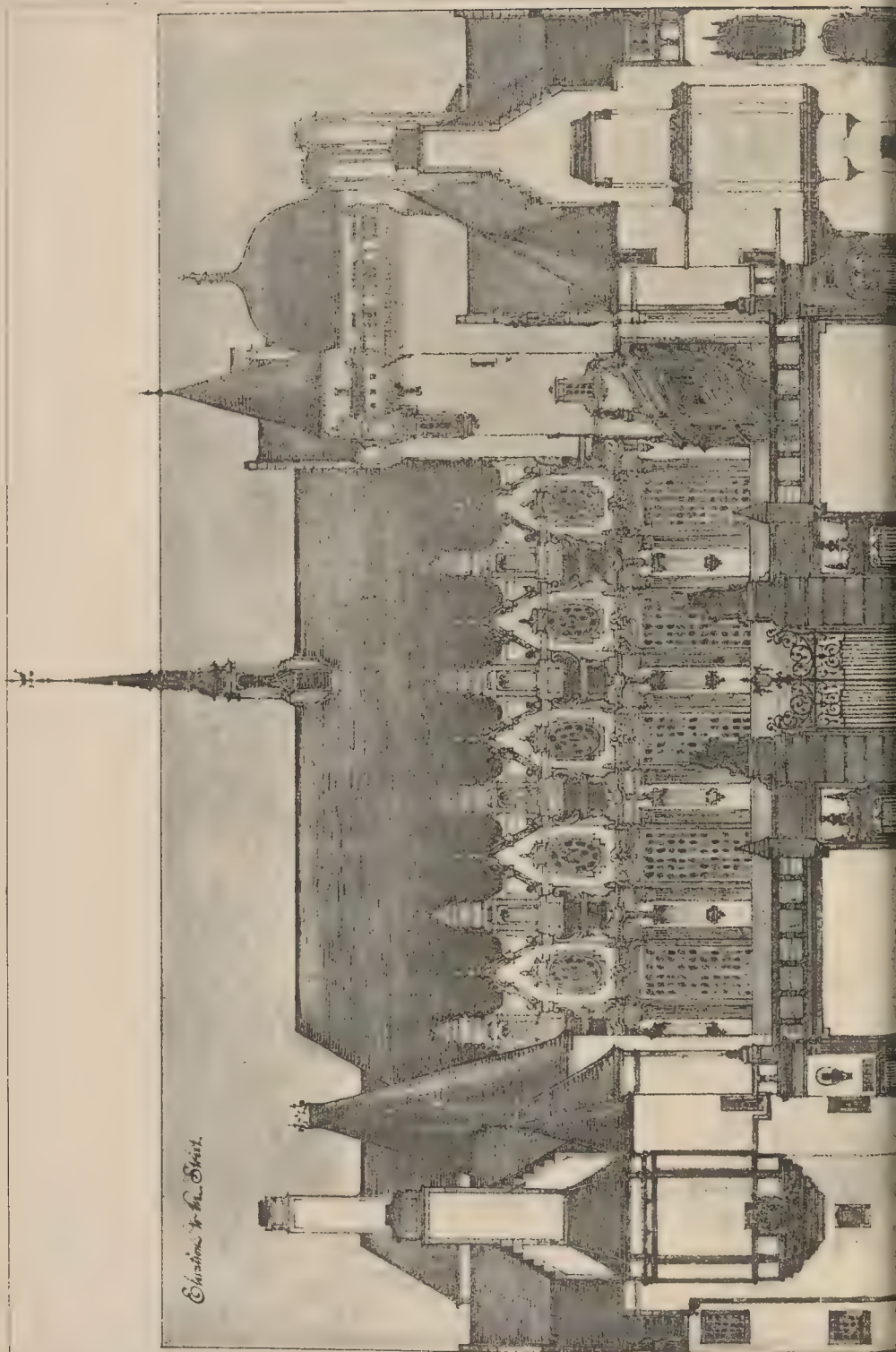


FIRST FLOOR PLAN

"NK-PHOTO" SPRAGUE & CO. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

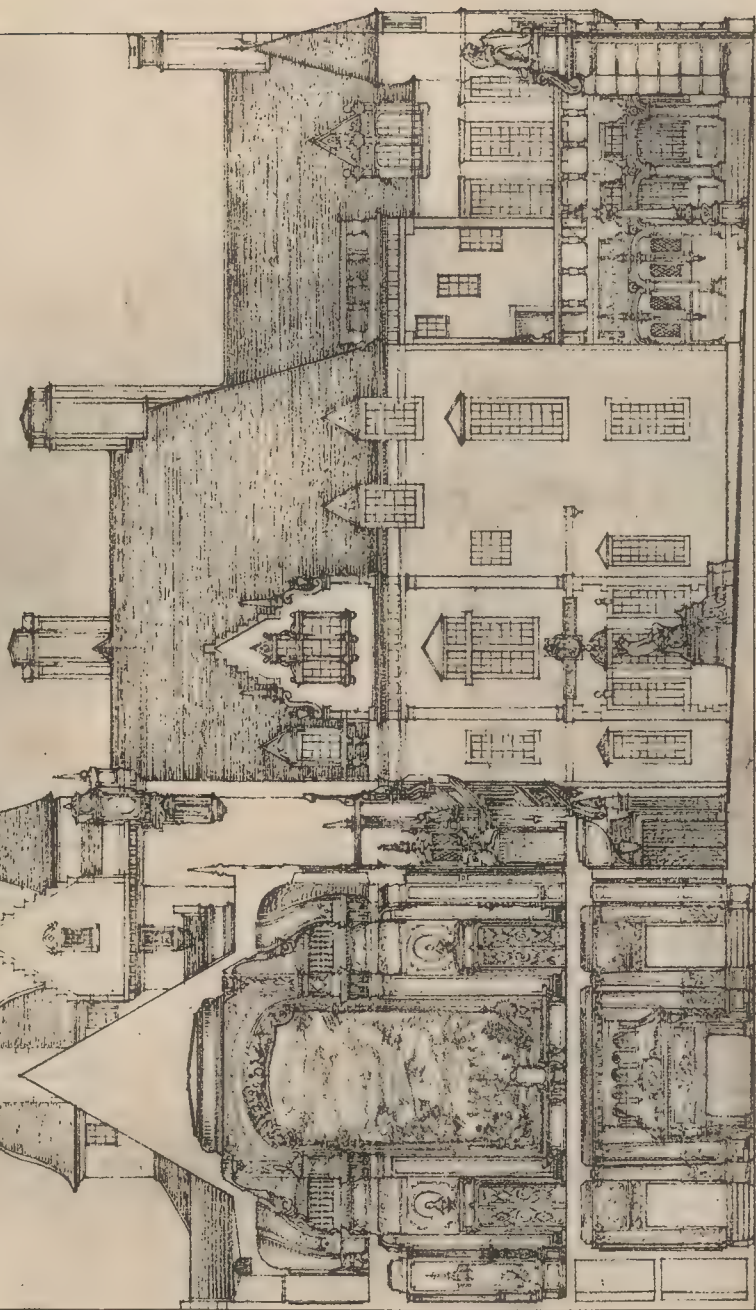


THE BUILDER, DECEMBER 29, 1911



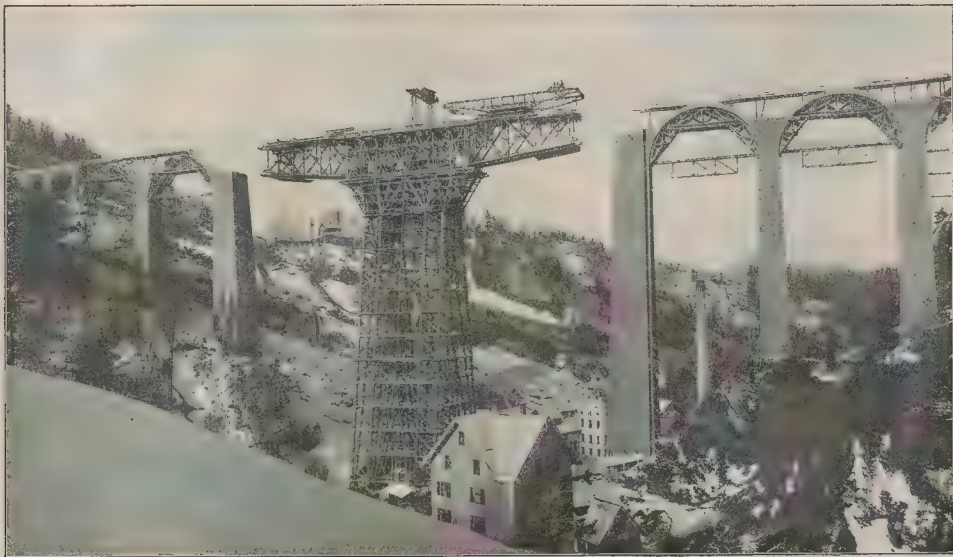
Station of city.

Entrance to Forecourt leading West.



R A SCHOOLS, 1891: DESIGN FOR THE GOLD MEDAL.—By MR. ADRIAN BERRINGTON.

MONTHLY REVIEW . of . ENGINEERING.



Sitter Viaduct : Erection of Girder Span.

THE SITTER VIADUCT, SWITZERLAND. II.

[Continued from page 578.]

Timber Construction Tower.

AS the girder span, described in our previous article, had to be erected at the height of 98 metres above the bed of the river during the construction of the masonry piers, continuous staging could not be used economically; neither was it economically practicable to erect staging for half the span and to complete the work by building out on the cantilever principle. After having considered various alternatives, Messrs. Theodore Bell & Co. decided to build the large construction tower which drawings are given on page 778, and from this to erect the steelwork in the form of a double-armed cantilever, as represented above.

The tower is a noteworthy example of timber work, 97 metres high, and, including contractors' plant and appliances, weighed 2,500 tons. As the wind pressure, taken at 150 kilograms per square metre, involved a maximum force of 400 tons it was necessary to inquire very carefully into the stability of the structure.

Timber was adopted instead of steel, for the reason that the material could afterwards be utilised more readily in other works. But the designers had to encounter the difficulty that no precise records were available, showing the distribution of forces on a framed structure of such unprecedented dimensions, and, besides, it was very important to keep to the minimum movements of the working platform, in order that the erection of the steelwork could be conducted with the required degree of precision.

With the laudable desire of leaving nothing to chance, the firm constructed large models of the principal elements and tested them under hydraulic pressure. This investigation furnished interesting data on the deformation and the limits of resistance of the framework, and from the results so gained were deduced the fundamental data of the calculations for the tower.

Briefly described, the work comprises a tower 74.80 metres high, surmounted by an enlarged head, carrying at the height of 98 metres a working platform equipped with a travelling crane and other machinery. The eight main uprights of the tower were securely anchored into masonry foundations, four of which were in the bed of the river. As an additional precaution, the summit of the tower was guyed by eight 30-millimetre cables anchored to the foundation of the viaduct piers.

The construction of the tower required 3,500 cubic metres of timber, 42 tons of bolts, and 7.6 tons of steel plate in the form of washers.

At the base of the tower was a platform, 30 by 23 metres, for assembling steelwork and where a lift was installed for raising material to the upper working platform and a second lift for men employed. One lift with the vertical height of 98 metres was capable of hoisting a load of 12 tons, and the other, with the vertical height of 78 metres, was capable of conveying ten to twelve men. The upper and lower platforms were in telephonic communication.

In order to guard against fire risks the tower was provided throughout with water pipes and numerous hydrants, and was watched during the night.

Erection of Steelwork.

The first operation was the assemblage of the middle portion of the span, the lower members of which rested on cast-iron sand boxes. Upon the upper booms a travelling crane, weighing 80 tons, was erected. This crane, with the horizontal overhang of 36 metres, was moved forward as the work of building out the cantilever arms advanced, its weight being counterbalanced by steel bars stacked at the opposite end of the work.

Thanks to the sand boxes employed by the contractors, the ends of the girder span could

readily be adjusted as necessary, and they were particularly useful when the span had been completed and only required to be lowered upon the supports, one of which was 2 metres higher than the other. The four sand boxes with the effective height of 1 metre gave full latitude for this regulation. The only precautions requisite were to keep the sand thoroughly dry and the two parts of each box well lubricated, so as to facilitate their movement when sand was allowed to flow out for lowering the span.

The ends of the girders rest upon four enormous granite seats, each weighing 13,500 kilograms.

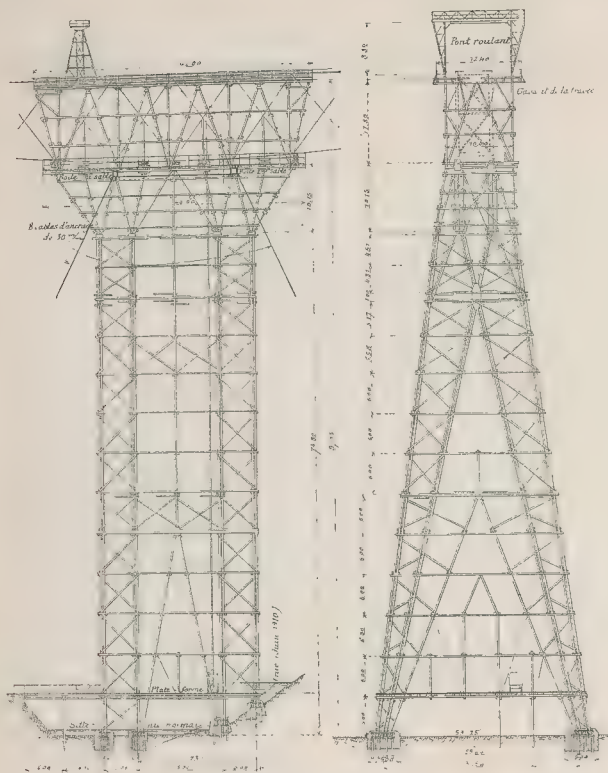
The total cost of the viaduct, which has been in service for several months, was 1,513,000 francs, representing 78 francs per square metre of surface.

We are indebted to Messrs. Theodore Bell & Co. for the photograph reproduced above.

L.C.C. REGULATIONS FOR REINFORCED CONCRETE BUILDINGS.

IN pursuance of the powers conferred by Parliament in 1909, the London County Council are about to make regulations with respect to the construction of buildings wholly or partly of reinforced concrete, and with respect to the use and composition of reinforced concrete in such construction.

At present the position of the matter is that the Building Acts Committee have prepared a draft code, embodying some of the alterations proposed by the Surveyors' Institution, the Institution of Civil Engineers, the Royal Institute of British Architects, and the Concrete Institute. This amended draft was brought before the Council on November 13 last, but was not then passed.



Sitter Viaduct: Timber Construction Tower for Steel Girder Span.

(From *Génie Civil*.)

After having come before the Council again for approval, the proposed regulations will have to be sanctioned by the Local Government Board and the four institutions mentioned above will have a second opportunity of putting forward any amendments they may consider to be necessary.

Unlike the purely optional recommendations of the Royal Institute of British Architects' Committee, the London County Council regulations will be rigidly enforced by law, for by the London County Council (General Powers) Act of 1909 they will become equivalent to an Act of Parliament.

Hence it is of the utmost importance to architects, building contractors, and the public that the nature and effect of the regulations should be very carefully examined and considered before the new code is brought before the Local Government Board for sanction.

Experience shows, especially at the present time, that it is not always an easy thing to make laws; but it shows that the amendment of existing laws is very much more difficult.

Two examples of the second case will serve our purpose. One is that of the unfortunate and short-sighted law which forbade any mechanically-propelled vehicle to be driven on the public highway at more than walking pace and without the attendance of a man in front waving a red flag to warn the public of possible disaster. For a generation this absurd law was in force, much to the delight of foreign nations and the injury of British industry.

The other example is that of the Building Regulations made at the instance of the Metropolitan Board of Works and perpetuated almost without alteration by the London Building Act of 1894, an enactment which has continued its harmful influence by prohibiting improved methods of building, until the

present year, and still bars the way of reinforced concrete construction.

All credit is due to the London County Council for their various efforts to remove obsolete and vexatious restrictions, and for their obvious desire to place steel-frame and reinforced concrete building construction upon a sound and reasonable basis.

So far as the latter method is concerned, it is particularly desirable that the draft regulations now awaiting approval should be of scope sufficiently wide to permit the introduction of improved materials and improved methods without involving the tedious delays invariably accompanying any effort to amend existing laws and regulations.

As we show later, there are some clauses in the new regulations proposed by the County Council which indicate an undesirable lack of foresight and elasticity, and we hope that the instances mentioned will receive attention not only by the technical advisers of the Council, but also by the professional societies cited in the Act.

In the subjoined notes we follow the order of the draft regulations as printed for consideration by the County Council.

Part I.—General.

The definition of reinforced concrete in paragraph (1) states that the reinforcing metal shall

(a) Be sufficient to take up all the direct tensile stresses;

(b) Assist in the resistance to shear;

(c) Assist in the resistance to compression where necessary."

Line (a) should be amended by omission of the word "direct," for direct tensile stress is rarely contemplated in reinforced concrete design, and the Council should provide for all tensile stresses, and not merely one very unusual variety, to be taken up by the

reinforcement. Our amendment would make the definition cover tensile stresses due to direct pull, to flexure, and to the combination of flexure and shear.

Line (b) suggests that the Council have fallen into the common error of confusing shear with tension on diagonal planes in beams. Whether they have done so or not is not perfectly clear.

Paragraph (3) states that "all floors and staircases (together with their enclosing walls) shall be constructed throughout of fire-resisting materials, and be carried upon supports of fire-resisting materials." This paragraph appears to have been transferred from the regulations for steel-frame buildings, where also it is stipulated that the construction shall be "throughout of fire-resisting materials," the phraseology clearly forbidding the use of structural steel or reinforcing steel in floors, staircases, staircase walls, and their supports. This cannot be intended, and the paragraph ought to be worded properly so as to convey the true meaning of the Council. Why not simply say that the structural details in question shall be of fire-resisting construction?

Part II.—Data.

The paragraphs applying to floor and roof loads are similar to those in the regulations for steel-frame buildings and require no comment, and the same remark applies to the paragraphs concerning wind pressure, but in paragraphs (19) to (46) we have various rules affecting computations for reinforced concrete structures.

Weights.—An opportune reminder is given to the effect that the dead weight of material must not be forgotten, the weight of reinforced concrete being stated at the reasonable average of 150 lb. per square foot.

Ratio of Span to Depth of a Beam.—Three paragraphs under this head amount to the somewhat ineffective stipulation that the ratio shall not exceed 24, but may exceed that value if the calculated deflection is less than $\frac{1}{250}$ of the span. Since the limitation of the ratio cannot in itself assume stiffness, it would be better to omit the point and to adopt instead a minimum proportionate deflection in terms of the span.

Bending Moments.—A clearly-expressed statement of formulae for the bending moments of beams under different load and other conditions will be found very convenient to all making use of the regulations. Another excellent feature is constituted by the simple and reasonable rules proposed for computing the bending moments in slabs differently reinforced and supported or fixed. The treatment of this section is far more practical and helpful in every way than the corresponding recommendations of the Royal Institute of British Architects' Report.

As an instance we may point out that while the latter says the bending moments in slabs are not to be taken at less than $Wl/12$, unless determined by exact calculation, the London County Council regulations allow values up to $Wl/24$, according to circumstances.

We do not overlook the fact that the rules given are necessarily quite empirical, for the simple reason that there is no reliable theory for the calculation of bending moments in reinforced concrete slabs, supported or fixed along all the edges.

Working Stresses.—This is an important section, the values applying to all structural members, with the exceptions provided for under the subsequent head of pillars. The working stresses allowed are as given in the tables which appear in full on the next page.

There are several points in these demanding comment. First, by "Direct compressive stress" we presume the reader is to understand what the word "direct" actually means, namely, the stress due to a direct push, and not what the same word is wrongly used to denote in Part I., line (a), in connexion with tensile stress.

Second, the expression "Extreme fibre stress" is loose, and should read *extreme fibre stress in compression*.

Third, the shearing stress of 60 lb. per square inch is absurdly low for simple shear, since it is now well known that concrete is quite capable of withstanding shearing stress intensity up to about half the permissible working stress in compression. But shearing stress is usually taken as the measure of indeterminable tensile stress on diagonal planes, and the fact is, as we have previously stated, that it is not safe to allow more than 25-30 lb. per square inch,

Stresses on Concrete.	Proportion by Volume.			Stress in pounds per square inch.		
	Cement. 1	Sand. 2	Coarse Material. 4	Cement. 1	Sand. 1½	Coarse Material. 3
Stress in pounds per square inch.						
Direct compressive stress.		600			700	
Extreme fibre stress.		600			700	
Frictional stress between concrete and steel.		100			100	
Shearing stress on plane section.		60			60	
Tensile stress.		Nil			Nil	
Stresses on Mild Steel Complying with the British Standard Specification.						
				Pounds per square inch.		
Direct compressive stress = mc , where m = modular ratio and c = safe working compressive stress (in pounds per square inch) on concrete surrounding the steel.				mc		
Direct tensile stress on mild steel in longitudinal members.				17,000		
Tensile stress in web-reinforcement.				12,000		
Shearing stress on mild steel.				12,000		

expressed in terms of shearing stress, as the working stress for diagonal tension. A still safer and more logical provision is to allow something for the tensile resistance of the concrete by demanding that the calculated shearing stress (representing tension on diagonal planes) shall be taken up by suitable web reinforcement. If the Council are wise they will make clear that the next line, "Tensile stress . . . nil," is to cover both longitudinal and diagonal tension by inserting the requisite words.

Fourth, it is not made clear whether the stress for mild steel denoted by the expression, "Direct compressive stress = mc ," is intended to apply solely to pillars and struts or to pillars and struts and beams, the uncertainty being due to the previously-mentioned misunderstanding on the part of the Council as to the proper use of the word "direct."

So far as pillars and struts are concerned, the values given by mc would be in accord with the elastic theory as accepted by many authorities in all parts of the world. But the values will not apply to the compressive stress c , on steel in beams until they have been qualified by a factor representing the relative levels of the neutral axis and the axis of the steel employed as compressive reinforcement; or unless the value for c has previously been qualified in a similar manner. For example, assuming the axis of the steel to be coincident with the compressed surface of the concrete, we should have: $c_s = mc \times 1$; while, assuming the axis of the steel to be coincident with the neutral axis, we should have: $c_s = mc \times 0$.

Fifth, the limitation of tensile stress in web reinforcement to 12,000 lb. per square inch is a matter requiring explanation in view of the admitted capacity of mild steel to withstand the safe working stress of 17,000 lb. per square inch. If proper methods of calculation are adopted there is absolutely no justification for this anomalous restriction.

In paragraphs (36) to (38), following the tables, there is further uncertainty following the ambiguous use of the word "direct." It is very desirable for this to be cleared up.

Grip Length.—With the exception of the points stated below, this section is judicious, particularly in requiring that "additional security shall be provided by fish-tailing the ends of the bars or by bending the ends of the bars into a J form or by mechanical bond."

The points against which an emphatic protest must be entered occur in the following sentences:—

"In the case of a bar having mechanical bond the least diameter of the bar may be measured from outside to outside of the transverse projections, provided—

(a) That the transverse projections are not further apart centre to centre than twice the normal diameter of the bar;

(b) That the height of such projections above the normal surface of the bar shall be at least $\frac{1}{4}$ in. on all bars exceeding $\frac{1}{2}$ in. in diameter, and $\frac{3}{8}$ in. on all bars not exceeding $\frac{1}{2}$ in. in diameter."

While (a) limits the spacing of projections, it does not say whether the limits are to be applied longitudinally or transversely, or both

longitudinally and transversely. Assuming the last alternative to be a correct interpretation, it would be quite open for anyone to employ a circular bar with three continuous ribs of any desired thickness projecting from the main body of the bar, and if the bar were of $\frac{1}{2}$ in. diameter the ribs could be made according to (b) to project to any distance exceeding $\frac{1}{16}$ in. Thus, taking the case of a $\frac{1}{2}$ -in. diameter bar with three ribs $\frac{1}{16}$ in. thick each, projecting $\frac{1}{2}$ in. from the body of the bar, the least diameter according to (a) could be measured at $1\frac{1}{8}$ in. We cannot see why the regulations should suggest so misleading a method of measurement. It serves no useful purpose and can only lead to confusion.

Moreover, the case we have assumed of a very undesirable kind of bar, complying with the terms of paragraphs (a) and (b), shows that, in addition to specifying minimum heights of projections, the regulations should also state minimum thicknesses and maximum heights for projections. They should also make clear the meaning of paragraph (a) and denote the main body of the bar by words more expressive than the somewhat inappropriate word "normal."

Modular Ratio.—In this section the ratio (m) of the elastic modulus of steel to the elastic modulus of concrete is arbitrarily specified at the value of 15, on the assumptions that the elastic modulus for all kinds of steel will always be approximately 30,000,000 lb. per square inch, and that the elastic modulus for all varieties of concrete will always be approximately 2,000,000 lb. per square inch.

There is no doubt whatever that for mild steel complying with the British Standard Specification, and for concrete made in accordance with the provisions of the proposed regulations, the value $m = 15$ is a very fair average. But in view of the fact that the alteration of existing laws is a very difficult and tedious operation, we should like to have some provision for altering the arbitrary ratio, $m = 15$, to suit any special qualities of steel that may hereafter be introduced, and to comply with any well-authenticated data that may be forthcoming to justify the acceptance of higher or lower values for the elastic modulus of ordinary or special qualities of concrete. By reserving power to exercise a little elasticity the Council will be able to avoid possible harm to an important branch of building construction, and will be placed in the position of being able to keep their regulations up to date in respect of this far-reaching ratio, to which the value now assigned with general consent is nothing more than an approximation, sometimes far below and sometimes far above the value obtaining in actual practice.

Part III.—Beams.

Paragraphs (48) and (49), demanding that "The least diameter or thickness of the longitudinal bars in beams shall not be less than $\frac{1}{4}$ in.," and that all other reinforcements in beams "shall be at least $\frac{1}{4}$ in. in diameter or thickness," are in direct violation of the fundamental principles of reinforced concrete design,

and their tendency will be in the direction of barring the way to improved forms of construction.

In order that the concrete in tension may be enabled to develop its full extensibility so as to make the elongation under stress (even though resulting in part from very minute and uniformly distributed hair cracks) very much greater than that of plain concrete, the steel employed as reinforcement must be in bars, rods, or wires of small section—the smaller the better from the theoretical standpoint. This being the case, it is clearly unwise to make any regulation calculated to shut out some methods and forms of reinforcement already in existence, or that may hereafter be devised to ensure closer adherence to theoretical principles. The same remarks apply also to the subsequent section on "SLABS."

Compressive Reinforcement.—As in the R.I.B.A. Report, no formulae are given for the design of beams with reinforcement in compression. The only guidance afforded is the statement that "the sectional area of the beam in the plane of the reinforcement may be assumed to be increased by fourteen times the cross-sectional area of the steel in compression."

This method of computation by the aid of what is termed an "equivalent section" may be understood by experts, but we are sure it will not be found useful to the average designer. There is far too much left to the imagination and to be ascertained by a special course of study, and a series of readily understood formulae is much to be desired.

Shear Reinforcement.—We have already commented on the misunderstanding repeated in the regulations with regard to shearing stress and tension on diagonal planes, and need only refer the reader to our remarks under the head of "Working Stresses."

Resistance Movements.—Paragraph (64) states the customary assumptions on which are based the formulae afterwards given for the design of beams. The basis is the same as that implied in the R.I.B.A. Report, but the assumptions are more fully stated.

Notation.—Following the example of the R.I.B.A. Committee, the Council have adopted the code of Standard Notation proposed by the Concrete Institute. This is a welcome development, and if the Institution of Civil Engineers also fall into line it may be taken for granted that use of the notation will become universal in this country.

Formulae.—Paragraphs (66) to (78) give equations for rectangular and tee-beams, virtually identical with the formulae of the R.I.B.A. Committee, but differently and more conveniently arranged. A point of considerable importance is the definite and exclusive adoption of this particular series of formulae by the Council. We agree that the straight-line theory, thus legalised to the exclusion of all other theories, is one that has found general favour on the Continent and in America. It gives safe results, and the formulae can be written in and reduced to very simple terms for everyday practice. Still, it must not be forgotten that other theories are in existence, some based on theory and substantiated by careful investigation, and others based on the results of long experience. Consequently, there is some reason in the argument that well-tried formulae should be officially recognised, and we must not lose sight of the possibility that powerful reasons may be forthcoming at a later date for the adoption of formulae interpreting more faithfully than those of the straight-line theory the actual behaviour of reinforced concrete beams. We adopt no partisan view in this matter, and simply propose that the adoption of the straight-line theory and resulting formulae should be qualified by words empowering the Council to accept other theories and formulae which they may approve from time to time. Such a loophole would act as a safeguard against any undesirable obstacle being built up in the way of future progress in design.

Part IV.—Pillars.

In the first paragraph of this section it is said:—"The term 'pillar,' when used in these regulations, shall be deemed to include any pillar, pier, post, column, detached support, or any other vertical compression member." This comprehensive and satisfactory definition covers all vertical compression members, but has no reference to compression members placed diagonally or horizontally. Therefore, the scope of Part IV. ought to be enlarged so

as to cover pillars and struts, no provision being made anywhere else in the regulations for diagonal or horizontal compression members. It is singular that the omission should have escaped the notice of the County Council and the four professional societies to whom the draft regulations were submitted. Our readers will remember that the R.I.B.A. Report is free from the same criticism for the reason that the corresponding section is entitled "Pillars and Pieces under Direct Thrust."

A good provision in paragraph (86) is one specifying a progressive diminution of the working stress with the increase of the ratio of length to the effective diameter, beyond the value $l/d = 18$.

Paragraph (87) determines the proportion of the maximum permissible pressure on pillars fixed in different ways, another useful statement.

The remainder of the section on pillars is very similar to the corresponding section in the R.I.B.A. Report except that it affords no guidance to the design of pillars under eccentric loading. In other respects it is preferable as allowing rather more latitude to designers and being more definite on points of practical detail. It is very much open to question, however, whether the Council have not been premature in adopting the distinctions drawn by the R.I.B.A. Committee as to the relative values of helical, circular, and rectangular, lateral reinforcement. At the present time there are no authoritative independent data which conclusively prove the attitude assumed. We are quite aware of all that can be said in favour of helical reinforcement, and equally aware of practical objections advanced against its theoretical advantages, and prefer to reserve our judgment. If the new regulations are sanctioned as they stand, the effect will obviously be to make all firms who submit competitive designs adopt helical reinforcement. Whether such a result is likely to improve reinforced concrete design is a controversial point. It seems clear to us that the County Council ought to proceed cautiously in accepting theories that are not unequivocally established.

Part V.—Walls.

This is a very welcome section permitting enclosing curtain walls of reinforced concrete to be built not less than 4 in. thick providing they are adequately designed, and enclosing curtain walls of brick in reinforced concrete framework to be not less than 8½ in. thick for the topmost 20 ft. and 13 in. for the remainder of their height. The section includes some necessary stipulations as required to ensure safety and proper construction.

Part VI.—Foundations.

Comment on this section is unnecessary, as it merely repeats the limits of pressure on earth and plain concrete which were given in the regulations for steel-frame buildings.

Part VII.—Protection.

The stipulations here made as to the protection of reinforcement from fire are the same as those of the R.I.B.A. Report, on which we commented favourably a short time ago.

Part VIII.—Materials.

Cement.—The adoption of slow-setting Portland cement in accordance with present and future British Standard Specifications will satisfy all concerned, but the arbitrary establishment of 90 lb. per cubic foot as the weight of cement is both unnecessary and inadvisable for reasons given on a previous occasion.

Sand.—There is nothing objectionable in the three paragraphs here included.

Coarse Material.—Under this head we are glad to find that coal residues, slags, and stone liable to disintegration are rigorously excluded. Another good point is the stipulation that aggregate shall be varied in size as much as possible within the permissible limits.

Concrete.—Although the section entitled "Working Stresses" provides for only two mixtures of concrete, we have a third mixture here in the proportions of 1:1:2, the working stress on which is 900 lb. per square inch if we take the safety factor stated under the head of "Pillars." It would be very inconvenient for users of the regulations to be obliged to search through three distinct sections before finding the information that ought to be collected together in one place, and we hope this clerical defect will be set right.

Paragraph (133), stating that "all three materials should be thoroughly mixed dry and then thoroughly mixed again after wetting," can only be intended to apply to hand-mixing. Nothing is said about the superiority of machine-mixed concrete, the quality of water, and the consistency of concrete.

Despite the statement in paragraph (119) that "the quantity of cement shall be determined by weight," the regulations deal throughout with proportions by volume. It would be far better to adhere to actual weight for cement and volume for sand and aggregate, with due regard to the proportion of voids in the two latter materials.

Steel.—Paragraph (135) says that all steel shall comply with present and future British Standard Specifications for structural steel, or shall be any other structural steel which may hereafter be standardised by the Engineering Standards Committee. This is excellent as far as it goes, but it must be remembered that the object of the Committee is to promote uniformity among similar materials and products in general use, and not to put an official seal upon any new and improved materials and products that may be introduced. Consequently if one or a few steel-makers should succeed in producing metal possessing qualities making it specially valuable for reinforced concrete work, it could not be expected that the Engineering Standards Committee would immediately standardise such metal, and the County Council, being bound by the wording of this paragraph, would be debarred from allowing the employment of the metal even if they believed such a course to be in the public interest. For these considerations we propose that the words "or which may hereafter be sanctioned by the Council" should be added to paragraph (135).

Paragraph (136) supplements the table of working stresses previously given, by stating that "the working tensile stress on such other structural steel which may hereafter be standardised shall not exceed:—

- (a) One-fourth of its ultimate resistance;
- (b) One-half the stress at the yield point;
- (c) Twenty thousand pounds per square inch, whichever is the least."

Regarding (a), we may point out that the ultimate resistance of steel is not a reliable factor in reinforced concrete construction, because for all practical purposes the limit of resistance coincides with the yield point of the reinforcement. Therefore it is more satisfactory to base the working stress on the stress at the yield point, as in (b).

The proposed limit of 20,000 lb. per square inch, stated in (c), is quite reasonable, but if anything somewhat excessive for steel with the elastic modulus of about 30,000,000 lb. per square inch, and for such steel provides an assurance that minute hair cracks in concrete, arising from the inability of that material to stretch to the extent demanded by the stretching of steel under stresses exceeding a few thousands of pounds, shall not develop into cracks of undesirable width.

But as the stipulation refers to future qualities of structural steel, it is impossible at the present time to fix 20,000 lb. per square inch, or any other limit of working tensile stress. For instance, if steel were produced with the yield point of, say, 60,000 lb. per square inch, and the elastic modulus of, say, 40,000,000 lb. per square inch, the working tensile stress of 30,000 lb. per square inch might reasonably be permitted, and we should like to see the County Council in the position of being able to act suitably, instead of tying their own hands by prophetic limitations.

The two sentences (a) and (b) in paragraph (137) refer to the dimensions of transverse projections on mechanical bond bars, and require amendment as indicated under the head of "Grip Length," where the same sentences occur in the regulations.

It should also be stipulated that the sectional area of steel in deformed bars shall be measured on the core, or main body of the bar, and nothing allowed for projections unless the latter are continuous from end to end of the bar.

Part IX.—Tests and Testing.

We are fully in accord with the provisions of this section, the effect of which will be beneficial in every way. There is only one suggestion to be made, namely, that tests should be conducted at the request of the District Surveyor on selected beams or floor bays, even in the absence "of any sign of weakness or faulty work"—see paragraph (143).

Part X.—Centering.

Apart from the American form of spelling here adopted, no comment is needed on the brief but explicit general directions here given.

Part XI.—Workmanship.

Although short, this concluding section conveys a number of useful hints to building contractors on the execution of work in reinforced concrete. It should be noted that paragraph (157) specifies circumstances in which tests, not mentioned in Part IX., must be conducted. This paragraph might conveniently be printed under the special heading devoted to "Tests and Testing."

Conclusion.

Supplementing the foregoing comments, we wish to say that the draft regulations bear evidence of having been compiled with much care and an obvious wish to provide safeguards for the public without placing unreasonable obstacles in the way of designers and contractors. Limits of space have debarred us from mentioning specially all the good points of the code, and we take this opportunity of saying that our suggestions have been made solely with the object of conducting to the further improvement of a draft which reflects much credit upon all who have been concerned in its production.

FOUNDATION LOADS.—III.

THE need for accurate determination of the safe bearing power of soil concerning whose resistance any doubt may exist could be illustrated by numerous examples of subsidence and other movements. We will here refer to only two or three typical cases, showing the undesirable developments which may take place if not prevented by measures dictated by ample information obtained before the commencement of building operations.

One of these is that of a massive structure covering a considerable area and having masonry walls, with footings of ample dimensions for soil of average quality. The site is on sloping ground, the back portion being a few feet higher than the level of the street in front. After completion of the building a crack appeared in one of the main walls, and continued to open until it extended through the full height of the wall and into the roof. This evidence of unequal settlement naturally suggested the desirability of investigation into the nature of the subsoil, as a result of which it was found that below the superficial layer of earth a bed of hard blue shale existed beneath a part of the site, and that the remaining part was supported by decomposed shale absorbing water readily and incapable of carrying considerable loads.

Another case is that of additions to a large church founded on alluvial soil of great depth. The old foundations had gradually settled down and come to rest many years before—a process which was repeated in connexion with the new works. The consequences were the development of various ugly cracks and much anxiety to the eminent architect commissioned by the authorities. The new foundations were doubtless perfectly safe in themselves, and there might have been no trouble if they had not been connected with older work. If careful tests had been made in advance it would have been quite possible to adopt measures for the consolidation of the soil and the distribution of the load so as to reduce settlement to insignificant proportions.

Again, we have in the history of a recent bridge founded on London clay one more proof of the necessity for the investigation of bearing capacity. The structure to which we refer was originally intended to have masonry arches, but after the abutments and river piers had been partly completed some doubt arose as to the advisability of imposing upon the soil the loads at first contemplated. Experiments were then made by the consulting engineer, and the final upshot was the abandonment of masonry in favour of steel arches. Had the tests been made at an earlier stage considerable outlay would have been saved, and the design of the structure would have been at once more graceful and better adapted to navigation.

Nothing elaborate in the way of apparatus is required for testing the bearing power of soil. The first thing to be done is to lay bare, at selected points on the building site, small areas of the bed upon which the

proposed foundations are to be constructed. This means the digging of small test pits, at the bottom of which a bearing surface should be prepared and levelled. The surface can then be loaded in any convenient manner, and careful observations taken of the settlement.

Speaking in general terms, the results given by a very small test area are apt to be misleading unless the operator possesses considerable experience in work of the kind. For instance, while a very heavy proportionate load might be sustained by a small area for a short time without appreciable result it does not follow that a large area would be capable of supporting the same unit load permanently.

We mention this point because load tests are sometimes made on a rather microscopic scale. In the case of the State Capitol of South Dakota, U.S.A., the soil was tested by excavating pits to the depth required by footings at a number of places on the building site. The bearing surface was prepared at the bottom of each pit under the supervision of the architect, great care being taken to dress and scrape the ground to a smooth horizontal surface. The testing apparatus consisted of a 12-in. square post, 6 ft. long, whose ends were cut perfectly square, and at the upper end of which was fixed a horizontal platform 6 ft. square, suitably braced by cleats and struts. Before loading the platform the foot of the apparatus was accurately seated, and levels were taken to ascertain the exact height of the platform. After application of the load observations were made to show the time when the settlement commenced and the extent of the movement. As the computed foundation load was $\frac{1}{2}$ tons per square foot the testing apparatus was loaded up to 3 tons, and the general result was a settlement of 3-16 in., but nothing more after about twelve hours had elapsed.

Even after the tests had shown the ample bearing power of the soil precautions were taken by no means at an end, for during excavation of the foundation trenches the ground was carefully examined with the object of discovering whether any soft places existed requiring special treatment. It was found that in some points the material was not so solid as could be desired, and to guard against any tendency to unequal settlement the footings were made continuous through the main walls, and in addition were reinforced by steel bars.

Another interesting illustration of careful investigation into the actual nature of the subsoil is furnished by the case of a bank building in Toronto, the architects having been informed that the site was on a thick bed of hard clay with almost unlimited bearing power. This estimate of resistance was based on the behaviour of adjacent buildings of no great height, and although these were perfectly safe and free from settlement, it was found that higher buildings with deeper foundations could not be erected with confidence unless special provision was made against settlement. At some remote period the site had formed part of a lake bottom, and consisted of clay hardened near the top to form a very hard crust, below which the clay was quite soft, resembling putty in consistency. In order to obtain reliable data tests were made with simple apparatus of the kind described above. No movement occurred until the load of $\frac{1}{2}$ tons had been imposed on the area of 1 sq. ft., when the measured settlement of $\frac{1}{8}$ in. rapidly occurred, and on the following morning had increased to $\frac{1}{4}$ in. while still under the same load. Nevertheless, the results so obtained were not considered to be conclusive as to the actual capacity of the soil, because the isolated area tested was not under the same conditions as an equal area beneath a large footing. Consequently, a supplementary test was made under conditions reproducing more closely those foreseen in the projected building. The apparatus used this time consisted of a 6-in. diameter pipe with a cutting edge driven about 8 in. into the clay. Inside the pipe an oak piston was inserted, its lower end being squared, the upper end projecting from the pipe was provided with a loading platform guided between pieces of timber. Pig-iron was placed on this platform, and no settlement occurred under the load of 5 tons per square foot. Therefore 4 tons per square foot was taken as the safe uniform load. The foundations were designed on this basis, and since the completion of the building in

the middle of the year 1907 no movement has been detected.

Having ascertained the safe bearing power of the soil in any given place where building operations are intended it will be necessary to take account of local and individual conditions before commencing the work of foundation design. The safe load per square foot for a church tower or factory chimney should obviously be much less than that for a lower structure.

HOMOGENEITY AND IMPERVIOUSNESS OF BETON.

THERE is only one way to make beton impervious, and that is to ensure that the amount of cement used exactly fills all the voids in the aggregates; and this can be attained only by proper calculation of these voids, and by ensuring homogeneity by means of thorough mixing.

Calculation alone will not ensure this result: for if the mixing be not thorough, voids unfilled with cement will remain, as shown by a proportionate excess of the obtained over the calculated volume of beton. Thorough mixing alone may ensure homogeneity, but if there be not sufficient cement to fill the voids empty spaces will result, which will lessen the imperviousness of the completed mass. If some portions of the mass contain too much cement and the others too little, as the result of improper mixing (and as often occurs with continuous mixing machines, with hasty mixing with batch machines or with careless hand-mixing), there will be in the mass spots or stripes which will be pervious to water.

The problem is usually to secure a high degree of resistance to pressure with maximum imperviousness; in beams it is also desirable to attain a good resistance to tensile stresses. Where imperviousness is the main object, this should be secured by a minimum amount of bond; but as usually attempted this desired result is not attained, simply from ignorance of or neglect of the proper proportioning of aggregates.

It is easy to see that if we have a number of incompressible spheres of the same diameter the voids between them will be of the same size, and that the proportion of each void to the volume of the spheres is independent of the diameter of these latter. It is equally easy to see that if we can calculate the size of the voids, we can fill a large portion of each one by a sphere, and that, by calculation or otherwise, we can find out what diameter of sphere will largely take up the smaller and more numerous voids between the two second larger spheres and the larger ones, and with each other.

What is true of spheres is equally true, although to a lesser extent, or to a less practically applicable extent, of all other regular forms, symmetrical about all three axes. It is also true, but in lesser degree, of less symmetrical forms, or of those which are symmetrical about only two axes.

This being the case, we can see that, while calculation of the voids between irregular masses, such as are used as aggregates in beton mixing, would be impossible, we can still obtain the most thorough filling of the voids between the larger pieces of stone by means of a much cheaper material than cement—namely, by smaller pieces of the same material, or by gravel or sand, by separating the various kinds of material and the sizes of each material, and making tests of various proportions of the different sizes and kinds. That particular mixture or proportion which results in the least increase of volume per weight, or in the greatest weight per unit of volume, is the one which leaves the least space to be filled with cement. It is also evident that up to a certain point (to be determined by experiment) the longer the various components are mixed the less the resultant volume will be.

In making these experiments the prices of the various aggregates should be taken into consideration.

An exact test of the voids in each kind of aggregate alone, or of each successive mixture, may be made by determining the volume of water required to fill all the voids in a measured vessel, full of the aggregates in question, but this will underestimate the amount of smaller aggregates or of cement necessary.

It will pay every contractor who has much to do with beton to measure out a cubic foot or a cubic yard of each material which he employs as

aggregate, and to determine, by the water test, the amount of smaller aggregate requisite to fill the voids therein. These tests should include not only each kind of aggregate and each size thereof by itself, but various combinations of different sizes of the same aggregate, and of two or more different materials of different sizes.

From the data thus tabulated (and which will, of course, be in volumes only) there should be made one of weights only, and of percentages of volumes and of weights, and these should enable the contractor to effect the most economical and the most satisfactory mixtures.

APPLYING CEMENT MORTAR BY COMPRESSED AIR.

WHEN concrete or cement mortar is applied as a protective covering to structural steelwork, the ordinary method is to surround the steel members with wooden forms and pour the wet mixture into place, some form of wire mesh or metal lath being employed as an anchorage; but a radically different arrangement is adopted in covering the steel work which forms an important feature of the reconstruction of the Grand Central Terminal yards of the New York Central and Hudson River Railroad in New York City. The essential parts of the "cement gun" there used consist of superimposed steel tanks forming two compartments, from the bottom of which a dry mixture of sand and cement, entirely under the control of the operator, is ejected by compressed air through a hose line carrying a nozzle at its discharge end. To this nozzle a second and smaller hose delivers a supply of water under pressure. The mixture of sand, cement, and water shoots out of the nozzle orifice with considerable force and impinges upon the surface of the steel work at which it is pointed. The mortar issuing in the form of a spray adheres to the surface of the steel and forms a coating which may be made as thick as desired. The discharge of the cement and the sand is regulated by varying the speed of a large feed wheel at the bottom of the lower compartment, which has deep notches around its entire circumference. This wheel is revolved by a small compressed air motor, and the small charges of the sand and cement mixture collected in the notches or pockets around the periphery of the wheel are fed successively into the rapidly-moving stream of air which issues from the inlet connexion. The material is blown through a curved outlet and passes thence into the hose line supplying the discharge outlet of the gun. The quantity of air required for working the gun depends upon the conditions under which it operates and the nature of the work to be done, and this is also true of the water used to hydrate the cement. The nozzle through which the mixture is discharged is designed to secure the thorough hydration of the cement, and that portion of it which is exposed to the abrasive action of the sand is lined with a composition that can be readily replaced as wear takes place. The water comes in contact with the mixture of cement and sand just as it passes through the nozzle, which is furnished with an annular chamber from which the water is sprayed under pressure from a series of carefully-proportioned orifices, and the hydration is begun there and continues until the surface to be covered is reached. The mixture issues from the gun nozzle at a velocity of about 350 ft. a second, and when it strikes the steel surface the large and coarse grains of sand rebound until the thin film of fine cement mortar which immediately adheres to the steel offers a plastic base in which the coarse particles become embedded; the mixture then builds up to any desired thickness upon this film. It is apparent, therefore, that when the swift moving stream of material hits the steel surface, and between that time and the instant when the mortar cover begins to build up, there is a tendency for the sand grains to clean off any rust after the manner of an ordinary sand blast. The deposition of the thin film of cement against the steel is advantageous as it secures an excellent bond and makes an efficient protective covering over the metal. As the cement is literally shot upon the steel a coating of great density is secured, while the force of the impact drives out all superfluous water and the concrete takes its initial set in a very short time, all possibility of voids or air pockets being avoided.—*The Times*.

REINFORCED CONCRETE BRIDGE AT UNIVERSITY COLLEGE, CORK.

SPANNING a branch of the River Le passing through the grounds of University College, Cork, a reinforced concrete bridge has lately been built from the designs of Mr. J. H. de Warrenne Waller, an old student of

the college now occupying a responsible position on the construction of the new bridge at Waterford. The new bridge is 72 ft. long over all, 68 ft. between abutments, and provides for a roadway 16 ft. wide.

The work is interesting, not because of the size or importance of the undertaking, but rather for the reason that its construction presented a problem commonly encountered

in practice—the construction of a bridge at moderate cost and of pleasing appearance.

The question of economy is answered by the statement of Professor C. W. L. Alexander to the effect that tenders had shown the cost of a steel bridge to be much greater than one of reinforced concrete, and to this there was to be added the cost of painting—probably 6*l.* or 8*l.* a year.

The aesthetic question is best answered by the view reproduced at the head of this article, where it will be seen that the bridge is of the girder type, with panelled sides and simple but effective latticed parapets. An arch would certainly have been more effective, but was impracticable owing to the low level of the ground at either side and the necessity for allowing ample clearance for the flow of water under the bridge.

The former structure on the site was constructed of Oregon pine and had been in service about twenty-seven years. Frequent repairs were necessary, the cost of maintenance having been 17*l.* a year, and finally the bridge became so decayed as to be beyond repair. The governors of the college then invited tenders from four steel firms, and alternative tenders to the design prepared by Mr. J. H. de W. Waller.

The subjoined particulars relative to the latter are taken from a paper read by the designer to the Institution of Civil Engineers of Ireland, to which body we are indebted for the illustrations reproduced in the present article.

Of the four steel firms invited, two sent in designs, one for a single span at the cost of 452*l.*, erected on foundations to be prepared by the owners and exclusive of masonry and road work, and one for two spans at the cost of 283*l.*, excluding cartage from the quay, foundations, centre pier, and road work. The reinforced concrete bridge cost 235*l.* 12*s.*, exclusive of the items omitted from the tenders for steel, thus effecting an initial economy of about 12½ per cent. and an annual saving of at least 6*l.* for maintenance.

System.—In this bridge the design and construction do not follow the lines of any patented system, but are based upon what the designer believed to be the most desirable features in several systems. Figs. 1 to 3 are an elevation, half-section, and half-plan, respectively, of the bridge.

The reinforcement consists of plain round steel bars, most of them bent and some straight, the ends of all being crooked for anchorage. Special bars were introduced over the centre support to provide resistance to stresses caused by continuous beam action. The bottom layer of bars are made to overlap 6 ft. at the support, to provide against tensile stresses that may arise if settlement of the central pier should take place.

The vertical spacing of the main bars, as shown in Fig. 2, is worthy of attention. The two sets of bars are not placed close together, as is sometimes done, but are kept separate by one inch of concrete to make provision for the transference of stress from the steel to the concrete, in accordance with the recommendations of many independent authorities.

The form of stirrup used in the main beams is one adopted by Mr. A. L. Johnson, a well-known reinforced concrete specialist in the United States. The stirrups are made from ¾-in. round steel rods, the upper ends being bent down so as to rest upon the upper edge of the beam mould (see Fig. 2) during the deposition of concrete, and therefore not only receiving support itself, but affording excellent means of holding the main bars in position.

The stirrups in the outer beams are a modification of those in the two inner beams of the bridge. In these only one side of the stirrup rested on the beam mould, and the other side was supported by means of a plank fixed temporarily, so that the cranked end of the stirrup hooked over it.

Both varieties of stirrup have the

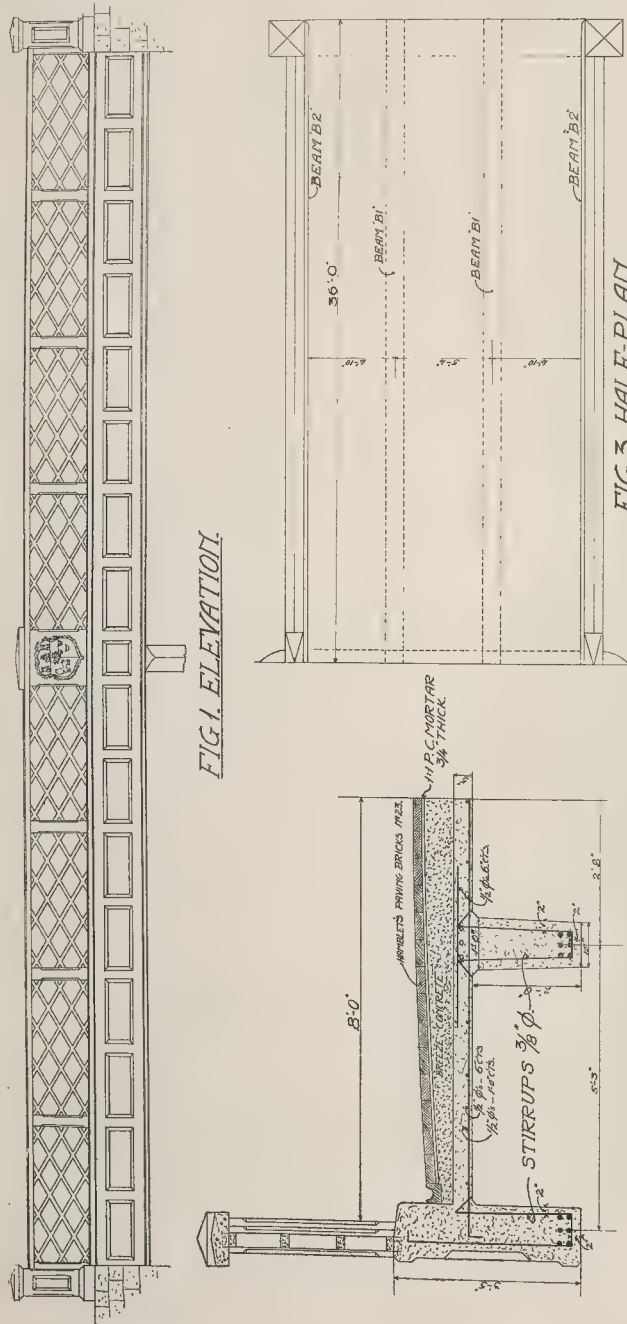


FIG. 1. ELEVATION. FIG. 2. HALF-SECTION. FIG. 3. HALF-PLAN.

A Reinforced Concrete Bridge, University College, Cork. (From the Transactions of the Institution of Civil Engineers of Ireland.)

disadvantage that the ends penetrate through the outer surface of the concrete, thus leading to the creation of rust spots and affording loopholes for the entrance of moisture to the interior of the construction. These drawbacks are sufficiently serious to make the form of stirrup in question undesirable for adoption.

The last matter for mention under the present head is the question of the formation of joints between concrete already set and fresh concrete laid after the temporary suspension of work. The specification required the concreting of the deck slab to be done with only one vertical joint over the centre pier, but before the work was commenced the contractor undertook to concrete the whole in one operation, so as to avoid the joint altogether. In a small bridge such as that at Cork the alteration offered no difficulty.

Calculations.—After the bending moments had been accurately determined, the beams and connecting-slabs were computed by formulae based on the straight-line theory, and therefore essentially the same as those adopted by the R.I.B.A. Committee.

Considerably more web reinforcement was provided than the amount required by the formulae in order to bind the upper and lower parts thoroughly together. As the total cost of the stirrups was under 3*l.*, it is evident that little is to be gained by attempts at economy in web reinforcement, the proper course, in our opinion, being to allow nothing for the resistance of the concrete to web stresses, because the most important of these is tension on diagonal planes.

The bending up of the main bars was effected as near to the ends as was permitted by the reduction of bending moment towards the middle of the span, the angle of the inclined portions being 30 deg. to the horizontal.

Ornamentation.—The decorative treatment of the bridge is found mainly in the panelled sides of the outer beams and in the balustrade. The diamond-shaped lattice panels might certainly have been improved upon, although, as may be judged by the photograph, they have a rustic appearance by no means inappropriate to the surroundings of the bridge. On the middle pier of the parapet are placed the arms of University College, which were modelled in clay by Mr. J. J. O'Brien, of the Cork School of Art, and cast in neat Portland cement.

Concrete.—Subject to modifications governed by the actual percentage of voids in the aggregate, the concrete was mixed in the proportions of 1:2:4. The aggregate consisted of one part stone broken to 1 in. gauge, and two parts river gravel, from $\frac{1}{2}$ -in. to $\frac{3}{4}$ -in. gauge. Sand was supplied from the Ballinacree pits near Middleton, and cement was supplied capable of passing the standard tests, and in addition a tensile test on briquettes at the end of three days, and the usual pat tests for soundness.

By the addition of sufficient water the concrete was mixed so that it would flow slowly when agitated. It was poured into the moulds and worked into place with pieces of batten sharpened to a chisel point at one end.

In the central pier the concrete under water was deposited by the aid of a 6-in. square timber shoot. The concrete was put in dry at the top, the lower end of the shoot was then gently lifted off the bottom, allowing the concrete to flow into place, the shoot being kept well filled so that no concrete could fall directly into the water.

The lattice panels of the parapets were cast separately and afterwards fixed in position. They were formed in moulds made in halves, each half having a bevel of $\frac{1}{4}$ in.

towards the middle, so as to permit of ready withdrawal. The concrete for the panels consisted of crushed limestone and sand in equal proportions, and the reinforcement consists of $\frac{1}{4}$ -in. round rods placed near both faces of the work.

Each of the balustrades was cast in one operation, the lattices and ornamental shield were placed in position, the moulds for the piers, posts, and top rail were fitted closely around them, and the whole concreted up.

Foundations.—The two end supports of the old bridge were quite capable of carrying the vertical load of the present bridge, and needed little alteration. The river supports were cast-iron columns and unsuitable for the new design, but, being well founded, were left in place and incorporated in the central concrete pier. Between the cast-iron columns were driven ten 10-in. square pitch-pine piles, as shown in Fig. 8.

Road Surface.—Before laying the road bed the top of the deck slab was covered with three coats of coal-tar, thinned with petroleum. Then was added a layer of coke-breeze concrete, and over this paving of blue Staffordshire brick.

Cost.—The total cost of the structure was as follows, including fees for the design:—

Central pier, including 10 piles and 3 cubic yds. of concrete	£33 0 0
Bridge beams and decking concrete at 50s. per cubic yard	114 0 0
Reinforcement (total) at 14 <i>l.</i> per ton, including labour	55 0 0
Balustrade, 144-ft. run, excluding ornamental shields	42 8 0
Road filling and paving	52 0 0
Other items	84 17 0
Total cost	£401 6 0

The contractor was Mr. Antony Gaul, of Cork, who carried out the works to the satisfaction of all concerned.



Reinforced Concrete Bridge, University College, Cork.

(From the Transactions of the Institution of Civil Engineers of Ireland.)

THE BUILDING TRADE.

THE BUDGET AND THE BUILDING TRADE.

IN the recent debate on the Finance Bill the Chancellor of the Exchequer conceded that "sooner or later" there would have to be an inquiry into the system of land valuation. This is a course the necessity of which we advocated in a recent article on "Increment Value" (the *Builder*, September 8 last), and we can only hope that the inquiry may be granted sooner rather than later. In our article on the original Budget resolutions, May 1, 1909, we pointed out that it was the small householder who would be the chief sufferer under the new departure in taxation, and now that the taxes have been in operation for nearly two years abundant evidence is forthcoming that our opinion was justified. Increment value duty is levied upon an uncertain basis, and those who can ill afford to contest the Government valuations are those who have to bear the heaviest burden of taxation. Building development is also seriously hindered. The expressed intention of the promoters of the new taxes was that the increment value duty should only represent an improvement in the value of property apart from the enhancement by any act on the part of the owner. Even if this principle were strictly adhered to the assessment of the tax involves an expensive and vexatious inquiry where a building estate has been laid out, and thus not only is the demand for house property lessened, but building development is hindered. The attitude of the Chancellor of the Exchequer towards the building trade does not appear to be wholly consistent. When he introduced the new taxation he assured his hearers that it would stimulate the building trade and throw open land which was being "held up." In his speech in the House, however, on December 13 last, he is reported as having said that "he had great hopes of the increase in the valuation of land. The House was told that the Government were ruining the building trade, that nothing was being done in the trade, that speculative building was at an end, and there was no building of houses except on demand. He was not so sure that it was altogether a bad thing that they should only make the supply fit the demand." We have italicised this passage not only because it seems to contradict one of the intentions with which the new taxation was expressed to be introduced, but because it loses sight of the point which we have endeavoured to make clear above, that the demand itself has been checked, and checked severely, by the imposition of the new taxes.

In fairness we must add that Mr. Lloyd George himself denies that the building trade has been injuriously affected. In his Budget statement last May he contended that the figures relating to unemployment showed steady improvement (see the *Builder*, May 26), and again in the House he repeated the assertion. He relies, as we have frequently pointed out, on the figures contained in the *Board of Trade Labour Gazette*. These returns, however (as we showed in our issue for May 26), are only partial, referring to trade union carpenters, joiners, and plumbers, and, as was recognised in the actuarial report on Unemployment Insurance, taking no account of bricklayers, plasterers, painters' labourers, etc., to whom no unemployed benefit is paid.

If an inquiry is granted into the methods of valuation it is important that the position of various industries should be perfectly comprehended, and we have made the above observations because some misapprehension appears to exist as to the actual effect of the taxes on the building trade.

THE WEBB ORPHANAGE, CREWE

This orphanage has been erected in connexion with a bequest made by the late Mr. F. W. Webb, who was for many years the chief mechanical engineer to the London and North Western Railway Company. The building was designed by Mr. J. Brocke, F.R.I.B.A., and the contract carried out by Messrs. Normanton, of Manchester.

THE EMPLOYMENT OF A SPECIALIST.

THOSE who supply electrical and other equipment for new buildings in the course of erection are generally known to the lawyer who draws a building contract as "specialists." So long as his money is safe, the question who employs him is a matter of indifference to the specialist. He may be employed by the architect and paid by the builder without knowing or caring who the building owner is. A cheque for 100*l.*, drawn on the banking account of a solvent builder, is as good as the cheque of any building owner—perhaps better.

But, alas, solvency is not always met with in commercial affairs! Although he may have been solvent at the time he took the job on, the builder sometimes finds that he has grossly under-estimated. In the result, when the specialist sends in his modest bill he is met with the reply: "The builder filed his petition yesterday week." The specialist then casts round to find out whether he cannot pursue a remedy against someone who is solvent; and before doing so he must be able to show that he was employed either expressly or impliedly by that person. What, then, is the relationship created between the specialist and the building owner by the terms of an ordinary contract?

This matter was discussed very clearly and decided very definitely in a recent case tried by Mr. Justice Coleridge in the King's Bench Division. We refer to *Young & Co. v. White* (28 T. L. R. 87), where specialists for the supply of steelwork for a building were held entitled to sue the building owner as the real principal in respect of goods supplied through the building contractor. The facts were briefly these. The plaintiffs, who are specialists in steelwork, were asked by certain architects to tender for the steelwork on a building in the course of erection in Chelsea. The tender, which was to do the work for 229*l.*, was sent in. Subsequently, the architects informed the plaintiffs that they were going to ask the builders to send the order for the steelwork; and on the same day the building contract was signed between the builder and the defendant, who was the building owner. Subsequently, the builder gave an order to the plaintiffs to carry out the steelwork "in accordance with your estimate and drawing sent to the architects dated July 20, 1910." Before the plaintiffs could obtain from the builders the sum of 150*l.*, being the balance due on a certificate, the builder went into liquidation. Consequently, the specialists brought an action to recover the sum of 150*l.* from the building owner. Clause 20 of the contract provided that:—

"All specialists . . . executing any work or supplying any goods for which prime cost, prices or provisional sums are included in the specification, who may at any time be nominated, selected, or approved by the architect, are hereby declared to be sub-contractors employed by the contractor; but no such sub-contractor shall be employed upon the works against whom the contractor shall make what the architect considers reasonable objection, or who will not enter into a contract with the contractor upon terms and conditions consistent with those in this contract, and securing the due performance and maintenance of the work supplied or executed by such sub-contractor."

It was contended on the part of the plaintiffs that when they contracted with the builder he was really the agent of the building owner, and this was agreed to by the court. Mr. Justice Coleridge said:—

"Generally, if the specialist supplies the goods or does the work for less money than the provisional sum allowed for prime cost, the owners get the benefit, and are entitled to a deduction on the whole contract accordingly. If the specialist charges more, the extra amount is added by the builder, and is an extra on the contract. This shows that the owner gets the benefit or suffers the loss of any lesser or greater amount payable in respect of prime cost. This does not affect

the right of the contractor to his profit on the whole contract, which would probably include this item. Here the owner selects the specialist, obtains the tender, fixes the price, and has the real, if not the only, interest in the work that is done. The builder is not interested. If he unreasonably objects to the selection, he may be over-ruled. He may make no discount for himself, and if the owner chooses to pay the specialist direct he can do so. The form of the contract here and there may discover the builder apparently contracting as principal. The substance is that he contracts as agent where specialists are concerned."

It is difficult to overrate the importance of this decision having regard to the enormous amount of work which is done by sub-contractors and specialists in various parts of the country. For a thousand reasons the contractor may find it impossible to carry out the work which he has undertaken for the price named in the tenders and the specialist may be the first to suffer.

Nor does this decision of Mr. Justice Coleridge stand alone. He adopted the reasoning of Mr. Justice Channell in *Crittall v. London County Council* (75 J. P. 203). In that case the County Council contracted with building contractors for the erection of a building, for the purposes of which certain specialities were to be ordered from stated firms. Amongst the specialities were certain casements. Many months after the head contract was entered into, the building owners invited the plaintiffs to quote for the casements according to a specification, which provided that the amount of the accepted quotation would be inserted as "a prime cost item" in building contract; that the plaintiffs would enter into an agreement with the building contractor to execute and complete the casements within a given time under penalty; that the architect of the building owner would have power to vary the work; and that payment for the work should only be made on the certificate of that architect. The plaintiffs having quoted according to this specification, the building owners forwarded the quotation to the building contractors with a request that they should place the order with the plaintiffs. Subsequently, the building contractors informed the plaintiffs that they (the building contractors) had instructions to accept the plaintiffs' estimate for the casements. In an action by the plaintiffs to recover the balance of the price of these casements from the building owners, it was held that, while the contract for the casements was *prima facie* a contract with the building contractors, it was also a contract made, in fact, by the building contractors acting as agents on behalf of the building owners as real principals, because it was to procure something for their benefit, and that on the facts of the case the plaintiffs were entitled to judgment (*Hobbs v. Turner*, 1902, 15 T. L. R. 235, followed).

Of course, it is to be said that these decisions may be overruled by the Court of Appeal. If they are upset, every specialist and sub-contractor will probably endeavour to ensure that when he enters into his contract he has a right both against the builder and the building owner.

LABOUR IN THE BUILDING TRADE.

A JOINT movement for improving conditions of labour in the London district in the wood-working and furnishing trades has been inaugurated as the outcome of private conferences between the following trade unions:—

- Amalgamated and Associated Societies of Carpenters and Joiners.
- General Union of Carpenters and Joiners.
- National Amalgamated Furnishing Trades Association.
- Amalgamated Union of Cabinet Makers.
- Old West-End Cabinet Makers' Society.
- Progressive Union of Cabinet Makers (London).
- Perserverance Cabinet Makers' Association (London).
- Independent Cabinet Makers' Association (London).

A proposed list of new working conditions has been drawn up and presented to the London building trade employers. Although it is hoped to carry through the negotiations without a strike, the societies concerned have decided on a levy of 5s. per member to form a fighting fund. The new proposals include the substitution of a 47-hour week for a 50-hour week during thirty-nine weeks of the summer; the raising of the minimum rate of wages from 10s. per hour to 1s. per hour; the payment of time and a quarter for night work; and the payment of double rates for all overtime. The present practice is to pay time and a quarter for first two hours. It is also proposed that 1d. per hour extra be paid to men employed in fixing joinery which has been prepared outside the district, and that subletting for labour only be prohibited.

The bricklayers, plumbers, painters, and labourers employed within twelve miles of Charing Cross are also preparing programmes of new demands.—*Daily Chronicle*.

EDINBURGH MASTER BUILDERS' ASSOCIATION.

In the Royal British Hotel, Princes-street, Edinburgh, the annual dinner of the Edinburgh, Leith, and District Building Trades' Association was held on the 14th inst. About seventy gentlemen were present, and Mr. David Wilson, J.P., occupied the chair.

After the loyal toasts had been honoured, Mr. Robert Gilchrist, President of the Glasgow Masters' Association, proposed the toast of 'The Edinburgh, Leith, and District Building Trades' Association.' He said there was a great deal of depression in the building trade in the West. He appealed to masters to have regard to the fact that they must work together if they were to protect their interests.

In his reply, the Chairman said they had had during the year no serious trouble with any of the operative's societies. Any small differences which had been brought under their notice had been adjusted by conferences in a most friendly way. It was a matter for regret that they were unable to employ as many men as they should like to employ. The ranks of the unemployed contained many of the building trade employees, and they saw little prospect of improving matters in the near future.

Reports from the different Building Trades Federation showed that the building trade throughout the country was in a worse position than it was in Edinburgh, where they had had a number of public buildings to help them, although some of these contracts, owing to keen competition, were not very remunerative. 'Too many builders in Edinburgh the year had seen the worst of a succession of bad years.

In December last year, and in the following month, property was changing hands freely, and they all thought property was returning. The scheme in the air, House of Commons Bill, Insurance, &c., and the effect of the increment duty, confidence in property as an investment was again checked for a time. It was time the Legislature gave the building trade a rest and let them have a chance of securing a return of confidence and restored security in property. In regard to lost property, they were told that builders were to blame for over-building. That was a mistake. The cause was not over-building; the condition they complained of was the effect of depopulation. The flower of their tradesmen had been driven from their homes abroad to get their daily bread. The effects of the Insurance Bill would be felt by the building trade in a greater degree than by most of the other trades. With regard to the unemployment part of the Bill, he said that section had been inadequately discussed. When framing the Bill the Chancellor of the Exchequer had consulted the employees' organisations, but no organised body of employers had been consulted. Their Committee had urged that workmen's compensation should have been included in the Bill as a contributory measure.

Along with the English Federation an endeavour was being made to get the Government to make an inquiry into the working of the Workmen's Compensation Act. That inquiry had been increased fourfold since the introduction of the Act, and it was a very heavy item in the cost of production. Malingering was responsible for much of the increase, and only by a contributory scheme would that be avoided.

Mr. J. B. Forrester, in proposing 'Kindred Societies,' said the building trade was suffering more from lightning-speed legislation on any other trade. He thought they were at the end of their tether, and they were and assert themselves. He appealed to the building and allied trades to unite together as to form one huge federation.

Replies were made by Mr. James A. Baxter, President of the Glasgow Master Wrights' Association; Mr. Arch. Watson, Vice-President of the Glasgow Master Plumbers' Association; and Mr. R. J. Henderson, Vice-President of the Edinburgh, Leith, and District House Factors' Association.

FACTORY AND COMMERCIAL PROPERTY SALES, 1911.

MESSRS. LEOPOLD FARMER & SONS, factory specialists and surveyors, of Gresham-street, E.C., report that the year under review has shown better results than was the case in 1910 in the disposal of factory property, wharves, land, etc. Values have been maintained and sales transacted at good times prices. The prices realised would not convey to the reader that the standard of values has been kept up, as hardly two factory properties are alike. The tendency, however, is for the price to rise consequent on the improvement by development in certain manufacturing districts, which have special advantages in rail, waterside, and other facilities. There is a migratory movement amongst manufacturers to districts outside large towns where the lowest possible cost of manufacture can be obtained. The Budget taxation of 1909 has not to any great degree affected the values of industrial properties, but as regards other securities, landed property a shrinkage is noticeable. There are many inducements affecting industrial operations, and the development of commercial enterprise.

It is difficult to say which branch of any particular manufacture more than any other has progressed in the year 1911: one, however, perhaps, being very noticeable is the manufacture of electric filament lamps, and several companies interested in the business have acquired factories and are carrying on large businesses.

Acquiring of factories, etc., and building of works, consequent on reorganisation and extension in many trades, are always in progress; those in the engineering, milling, chemical, and spinning trades having been well to the front in development in the year under review.

The effects of the Patents and Designs Act are still well to the front; foreign holders of English patents still being on the look-out for factory property to comply with its requirements.

In looking ahead to further deals, Messrs. Farmer & Sons are confident of good sales, as there is every likelihood of a great amount of prosperous activity in the industrial world.

GENERAL BUILDING NEWS.

PROPOSED CHURCH, CHESTER-LE-STREET.

Plans for proposed Congregational Church have been prepared by Mr. Albert H. Fennell, architect, Chester-le-Street, Co. Durham. The front facade will be of stone in late Gothic style. The scheme is to cost about 3,250l., exclusive of site and manse. Church seating 510, schoolroom seating 250, vestries, cloak-rooms, cellars, etc.

NEW CHURCH, STEPPS.

The Building Committee of Steps United Free Church has decided upon erecting a new church, and plans have been prepared by Mr. Andrew Balfour, F.R.I.B.A., architect, of Glasgow. The estimated cost of the work is 5,000l., and the seating accommodation is for 650 people.

NEW CHURCH SCHOOLS, HESLE.

The extensions to these schools are being erected by Mr. M. Harper, contractor, at an estimated cost of 1,500l. The extensions include three new classrooms, besides considerable internal alterations. The architect for the work is Mr. J. Bilson.

NEW BUILDINGS IN LONDON.

Laboratory buildings at University of London. Strand, W.C. (5,000l.); Professor F. M. Simpson, architect, 63, Gower-street, W.C. Block of office buildings, Aldwych, W.C.; Mr. A. Burr, architect, 85, Gower-street, W.C. Additions to offices of the City of London Board of Guardians; Mr. A. E. Pridmore, architect, 2, Broad-street Buildings, E.C.

NEW MILL, BELFAST.

Mr. Samuel Stevenson is the architect for the new spinning mill which is being erected for Messrs. Jaffe Brothers. The contractors are Messrs. M'Laughlin & Harvey, Ltd.

MONEYRA MASONIC HALL.

Messrs. Watt, Tulloch, & Fitzsimons are the architects for this new hall, the founda-

tion-stone of which was laid last week. The contract is being carried out by Mr. W. J. McClurg.

WORTHINGTON HOSPITAL.

The new outpatients' department of this hospital has been erected at a cost of 2,620l., from the designs of Mr. A. Morris Butler, architect. The contractor for the work is Mr. George Baker, jun., and the building will probably be opened in February.

TRADE NEWS.

Messrs. Hayward Brothers & Eckstein, Ltd., engineers and ironfounders, 187 to 201, Union-street, Borough, S.E., supplied sixteen large circular glazed terrace lights for lighting the rooms of the Museum below, in the King Victor Emanuel Memorial, Rome.

Under the direction of Mr. Arthur C. Bloomfield, M.A., Boyle's latest patent 'air-pump' ventilators have been applied at the Bank of England, Threadneedle-street, E.C.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDEEN.—Church halls for Albion-street Congregational Church (22,000l.); Mr. R. G. Wilson, architect, 18A, Union-street, Aberdeen. Alfreton.—Parish room (1,000l.); Vicar, St. Martin's Church, Alfreton.

AMESBURY AND DEVIZES.—Police-stations (7,750l.); Messrs. W. Parsons & Sons, builders, Westbury.

AYR.—Byre accommodation and mart for Messrs R. Dewar & Sons (1,000l.); Mr. J. Young, Surveyor, Ayr Town Council.

BARTON.—Addition to boys' school (370l.); Mr. G. F. Quinlan, builder, 1, Carisbrook-road, Newport, L.O.W.

BLYTH.—Forty houses; Mr. R. Groves, Surveyor, Blyth Urban District Council.

BOATHEN (Stoke).—School (7,000l.); Mr. B. R. Ashworth, Town Hall, Hanley.

BRIDLINGTON.—Sunday-school; Rev. J. E. Evans, pastor, Trinity Congregational Church, Bridlington.

BRISTOL.—Laundry depot for Bristol Co-operative Society; Mr. Ashley, manager, Building Department, Co-operative Society, Bristol.

BRIXHAM (near Paignton).—School; Mr. P. Morris, architect, 1, Richmond-road, Exeter. Brownhills.—Enlargement and improvement of Walsall Wood School (1,900l.); Messrs. H. Gough & Son, builders, 550, Dudley-road, Wolverhampton.

CADISHEAD (Manchester).—Thirty-one houses off Albert-street; Messrs. Brew Bros., builders, 3, Moss-lane, Cadishead, Manchester.

CARDIFF.—Technical institute, Cathays Park (3,000l.); Messrs. Ivor Jones & Percy Thomas, architects, 18, St. Mary-street, Cardiff.

CASTLEDYKES.—School (400 places); Mr. S. M. Grant, Secretary, Education Committee, Lindsey County Council, Lincoln.

COLD NORTON (Essex).—School (4,000l.); Mr. Frank Whitmore, architect, 73, Duke-street, Chelmsford.

DARLINGTON.—Schools, Hollyhurst and Houghton roads; Mr. G. Winter, Surveyor, Town Hall, Darlington.

DARWEN.—Kiosk and villa, Darwen Park (2,000l.); Mr. J. S. Seville, Council Offices, Darwen.

DEARNLEY (Rochdale).—Extensions to St. Andrew's Church (3,000l.); Mr. F. B. Oakley, architect, 5, Cross-street, Manchester.

DENBIGH.—Block of public offices (7,000l.); Messrs. Parker & Elock, architects, Estate Offices, Colwyn Bay.

DEWSBURY.—Warehouse and offices (1,700l.); Messrs. Holton & Fox, architects, 7, Corporation-street, Dewsbury.

DONCASTER.—Lecture hall, etc.; Mr. C. Stevenson, architect, 6, St. Vincent-avenue, Doncaster.

DURHAM. Chapel; Messrs. T. & S. Pott & Son, architects, 37, John-street, Sunderland.

EASTBOURNE.—Methodist Church (2,500l.); Messrs. Geo. Baines & Son, architects, 5, Clements' Inn, W.C.

EDINBURGH.—Shelter at the Cattle Market (3,950l.); Mr. J. Walker Smith, engineer, Edinburgh Town Council.

ELHAM. Catholic Church; Mr. F. J. Bradford King, builder, Richard-road, Leicester.

EVESHAM.—Sixty houses, Broadway; Messrs. Dicks & Waldron, architects, Evesham.

EXETER.—Business premises, Sidwell-street; Mr. T. A. Lucas, architect, Guildhall-chambers.

EXETER. Additions, St. John's School; Mr. Edgar Ware, architect, Radford-circus, Exeter.

EXMOUTH.—Church institute (3,000l.); Mr. G. H. Fellows-Prynn, architect, 6, Queen Anne's-gate, S.W.

FERRYHILL.—School (6,500l.); Mr. J. A. C. Allan, architect, 5, Union-terrace, Aberdeen.

GLASGOW.—Extensions and additions to premises, Hannay-street, for the Steel Company

* See also our list of Competitions, Contracts, etc., on another page.

of Scotland, Ltd., 23, Exchange-square, Glasgow. Extensions to Anchor Chemical Works, Portarnall, for Messrs. Alexr. Hope, Ltd. (2,150.); Mr. A. W. McDonald, 219, Hope-street, Glasgow. Picture theatre, Smith-street (3,000.); Mr. A. V. Gardner, architect, 164, Bath-street, Glasgow.

Glyn (Neath).—Schools; Mr. W. R. Nash, architect, Angel-street, Neath.

Great Harwood.—Extensions to works, Glebe-street, for Messrs. F. Westby & Sons.

Greenock.—Baths and washhouses (5,000.); Mr. F. Low, Burgh-buildings, Greenock.

Grimshy.—Paper mill for Messrs. P. Dixon & Son, Oughy Bridge, Sheffield.

Haggerston Beal (Northumberland).—Re-building, Haggerston Castle; Mr. A. Cayley, Estate Offices, Haggerston Beal.

Haslingden (Manchester).—Catholic School (3,000.); Mr. H. Fielding, architect, 2, Beaconsfield-street, Haslingden.

Haywards Heath.—Alterations and additions to school (4,670.); Mr. H. J. Bessant, builder, Eastbourne.

Honiton (Devon).—Additions to workhouse; Mr. Redfern, architect, Honiton.

Huddersfield.—Yeomanry headquarters, Fitzwilliam-street; Mr. W. Cooper, architect, 41, Kirkgate, Huddersfield.

Hutton.—Proposed hostel, dairy, and farm buildings, etc. (10,000.); Mr. W. H. Schofield, Surveyor, Lancashire County Council, County Office, Preston.

Hyde.—Extensions to rubber works for Messrs. Redfern.

Inverness.—Science and art school for Royal Academy (8,000.); Mr. R. I. McBeth, Queen's House, Inverness.

Keighley.—Trade school (10,000.); Mr. J. Stuart, architect, County Hall, Wakefield.

Kilbowie.—Extensions to sawmills (5,500.); Building Department, Singer Manufacturing Company, Kilbowie.

Laira (Plymouth).—St. Mary's Church; Mr. T. R. Kinsell, architect, 1, George-street, Plymouth.

Lakenham.—School; Mr. C. J. Brown, architect, Cathedral Offices, The Close, Norwich.

Leeds.—Extensions to Notre Dame College; Mr. E. Simpson, 12, Cunliffe-terrace, Manningham, Bradford.

Lerwick.—Extensions to Gilbert Bain's Memorial Hospital (2,000.); Mr. George Cruikshank, builder, Town Buildings, Lerwick.

Limerick.—Additions, infirmary (2,500.); Mr. W. Rosengrove, architect, 33, Catherine-street, Limerick.

Llanystirdwyry.—Public institute (3,000.); Mr. T. T. Rees, architect, Hamilton-street, Birkenhead.

Longbridge (near Northfield).—Catholic home of refuge (13,000.); Messrs. Pugin & Pugin, architects, 51, North John Street, Liverpool.

Mitcham (Upper).—School (4,675.); Messrs. Graoe & Marsh, builders, 79, Tamworth-road, Cropton.

Mullanozan (Ireland).—Church; Mr. F. F. McNamara, architect, Great Brunswick-street, Dublin.

Neuton.—Special subjects centre (1,135.); Messrs. W. Fleming & Son, builders, Neuton.

Newcastle-on-Tyne.—School, Welbeck-road (250 places); Mr. A. C. Coffin, Secretary, Education Committee, Newcastle-on-Tyne Town Council.

Newport (Mon.).—Church; Messrs. Habershon & Fawcner, Queen's-chambers, Newport, Mon.

Newsham.—Picture hall; Mr. J. N. T. Aikin, 1, St. Nicholas Buildings, Newcastle.

Newton.—Additions to Hexine Works for the British Leather Cloth Company.

Newton Bank.—Additions to print works for the Calico Printers' Association.

Norton.—Public baths and washhouses (4,000.); Mr. A. Hartley, Surveyor, Urban District Council Offices, Norton.

Norwich.—Extensions to Willow-lane Schools (5,000.); Mr. C. J. Brown, architect, Cathedral-chambers, The Close, Norwich.

Oxford.—School (7,000.); Mr. A. Castle, City Estate Offices, City Hall, Oxford.

Pembillyncwymer and Glanconwy.—Schools; Mr. W. D. Wiles, Market street, Wrexham.

Penzance.—Pavilion and winter gardens (4,000.); Mr. H. Cowell, architect, Central-chambers, Newquay, Cornwall.

Petersfield.—Rectory (1,900.); Vicar, St. Peter's Church, Petersfield.

Ponteland.—Children's home; Mr. C. S. Shortt, Clerk, Castle Ward Board of Guardians, Newcastle-on-Tyne.

Portlade.—Church; Messrs. Packham Brothers, builders, Preston Park, Brighton.

Port Sunlight.—Schools; Mr. H. Bewick, County Architect, Newgate-street, Chester.

Randolph Hill, N.B.—Villa (3,000.); Mr. C. Simpson, architect, 16, King-street, Stirling.

Renfrew.—Extensions and alterations, Municipal Buildings (3,000.); Mr. John Arthur, architect, 131, West Regent-street, Glasgow.

Rochdale.—Alterations to Lower-place United Methodist Church (700.); the Trustees.

Rushton.—Factory, Allen-road, for Messrs. R. & S. Robinson; additions to factory, Newton-road, for Messrs. Ashford & Campion.

Seaham Harbour (Durham).—School (6,000.); Mr. W. B. Cooper, builder, Sanson-street South, Sunderland.

Sherburn Hill (Durham).—School (7,000.); Messrs. Makepeace & Valks, builders, Trimdon, Durham.

Skegness (Lincs).—Cottage hospital (3,000.); Mr. F. J. Parkinson, architect, 9, Richmond-terrace, Blackburn.

Spread Eagle (Oswaldtwistle).—School (4,000.); Mr. H. Littler, 16, Ribblesdale-place, Preston.

Station Town (Durham).—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Stoke-on-Trent.—School (340 places); Mr. A. R. Wood & Sons, architects, Burslem.

Stourfield (Bournemouth).—School (4,000.); Mr. F. W. Lacey, Surveyor, Municipal Buildings, Bournemouth.

Swansea.—Alterations to block at fever hospital (5,300.); Mr. George Bell, Surveyor, Swansea Town Council.

Thorston.—School (5,000.); Mr. Proctor, 29, Church-street, Hartlepool.

Trowbridge.—School (5,000.); Mr. J. G. Powell, architect, County Hall, Trowbridge.

Tunstall.—Extensions to McKin's factory (6,000.); Mr. J. C. Cowlishaw, architect, Stafford-street, Hanley; Mr. T. Godwin, builder, Victoria-road, Hanley.

Tyne Dock.—Picture hall (2,500.); Mr. H. Grieves, architect, The Croft, Westoe, South Shields.

Tynemouth.—Market buildings (2,000.); Mr. T. F. Smillee, Surveyor, Tynemouth Town Council.

Walkden.—Additions to mills for Messrs. E. Lane & Sons, cotton goods manufacturers, Hope Mills, Walkden.

Warrington.—Extensions to factory of Messrs. J. Fairclough & Sons (3,000.); Messrs. W. & S. Owen, architects, Cairo-street, Warrington.

Wellington (Stoke).—Additions to school; Mr. B. R. Ashworth, Town Hall, Hanley.

Wheatley Hill (Durham).—School; also additions to school at Ford; Messrs. Clerly & Charlton, builders, Sunderland.

Willington.—Enlargement of isolation hospital; Mr. J. H. Gardner, Surveyor, Willington Urban District Council.

Witham.—Enlargement of hospital (1,000.); Mr. T. R. Swales, Surveyor, Maldon Town Council.

Woodhouse (Sheffield).—School and buildings (5,212.); Mr. J. F. Abbey, architect, 244, New Market-street, Huddersfield; Messrs. Mark Brook & Co., builders, Huddersfield.

Woodseats (Sheffield).—Church; Messrs. Geo. Baines & Son, architects, 5, Clement's Inn, W.C.

Wortley (Leeds).—Factory and laundry; Mr. F. D. McKay, architect, The Lodge, Bramley, Yorks.

Yeaddon.—School; Vicar, Parish Church, Yeaddon.

Yeovil.—Fifty houses; Mr. A. Oddy, Surveyor, Yeovil Town Council.

shops, and farming. In the Orange Free State a demand for builders exists at Bethlehem. In *The Cape* there are openings at Cape Town for a few masons in the stone-dressing industry. *Panama Canal*.—The employment by the Isthmian Canal Commission of skilled labourers is now restricted to American citizens, except in cases in which American labour of the character required is not available. There is a surplus of skilled and unskilled labour on the Isthmus, and as the Canal Works are now within measurable time of being completed it will soon be necessary to reduce the number of men employed.

Labour in Cape Town.

We take the following from the Government Labour Bureau, Cape Town, for the month of October:—

Stone-dressing.—Very busy. Seventy-seven masons are employed at the new Law Courts and about twenty-five others in connexion with other undertakings in various parts of the town.

Plumbing.—Much brighter. The greater portion of the work in progress is in connexion with repairs, but a few contracts for new work are now being dealt with, and it is quite possible that a slight shortage of men may occur in the near future.

Painting and Decorating.—Improving. There is an increase in the number of premises in course of redecoration, and only three painters were registered for employment at the Bureau.

Fibroplaster and Cement Working.—Fair, but with no increase in the demand for labour.

Bricklaying.—This trade now shows signs of a definite improvement, and employment is made personally at the rate of about one man at any time during the past six months.

Shopfitting.—As anticipated in September, an increase has occurred in the amount of work in hand.

Joinery and Woodworking Trades.—This industry has improved to a considerable extent since September. Applications by competent joiners to fill prospective vacancies should be made personally at the Labour Bureau or through the medium of the magistrate in whose district the applicant resides.

Furniture Manufacture and Cabinet-making.—Very busy.

Building Work, Ceylon.

The Principal Collector of Customs of Ceylon (Mr. C. D. Vigors), in his report for the year ended June 30, 1911, states that proposals are before the Government for the erection of export warehouses at Colombo on the old coaling grounds, and also for the provision of a steam or petrol launch for Customs use in the harbour. It has been decided to obtain an electric crane for loading material into trucks, and also an additional crane for Government goods. The passenger jetty at the port is to be lengthened by 120 ft. A scheme is being prepared for the deepening of Colombo harbour, a large part of which has a depth of less than 30 ft. This work will be necessary if the Suez Canal is deepened to 36 ft. by 1914.

Hospital, Freetown, Sierra Leone.

The *Sierra Leone Royal Gazette* of November 11 contains the text of the Governor's address on the introduction of the annual estimates, from which it appears that a new hospital is to be built at Freetown.

Building and Road-making, etc., Works, Argentine Republic.

The *Boletín Oficial* of November 10 publishes a decree (No. 8,573), issued by the Ministry of Public Works, earmarking a sum of 20,846,000 pesos currency (about 122,500*l.*) for the carrying out of extensive public works throughout the Republic. Of this sum 1,390,000 pesos (about 121,600*l.*) is allocated to Buenos Aires City, and a similar sum to each of the following provinces: Buenos Aires, Santa Fé, Córdoba, Entre Ríos, Corrientes, San Luis, Jujuy, San Juan, Santiago del Estero, Men doza, Salta, Tucumán, Rioja; and 1,356,000 pesos to Catamarca. The principal works to be carried out consist of the building and enlarging of schools, colleges, hospitals, and libraries; the making of roads; dredging, irrigation, and canal works; and bridge building.

Theatre at Yurief, Russia.

H.M. Consul at Riga (Mr. V. H. C. Bosanquet) reports that, according to the local Press, a project is on foot to construct a stone theatre at Yurief (Dorpat), in the province of Livonia. A sum of 110,000 roubles (about 11,600*l.*) is required for the enterprise.

School Houses, Cuba.

The *Gaceta Oficial* publishes a law earmarking a sum of 150,000 pesos (about 31,000*l.*) for the erection of 150 new school houses in various parts of the Republic.

FOREIGN AND COLONIAL.

Labour in the Colonies.

From the Supplement to Circulars of Emigrants' Information Office, 34, Broadway, Westminster, S.W., we take the following: *New South Wales*.—In Sydney and suburbs the building and iron trades and factory workers have been well employed, and stone-masons, bricklayers, plasterers, carpenters, joiners, able-bodied labourers, are in great demand. The strike of iron workers at Lithgow continues.—In *Victoria* employment continues to be very good, and assisted passages are now being granted to mechanics. There is a large demand for bricklayers, carpenters, plasterers, boiler-makers, blacksmiths, moulders, engine fitters, plumbers, turners, and furniture makers. *South Australia*.—Work of nearly all kinds is plentiful, and there is a good demand for bricklayers, masons, plasterers, carpenters, first-class painters, plumbers, boiler-makers, ironworkers, moulders, and cooper-smiths. *Queensland*.—There is a good demand for labour generally, both in towns and factory. *New Zealand*.—The demand for mechanics is not general, but skilled men, such as plumbers, have little difficulty in finding work. *Union of South Africa*.—Employment in the building trades in Johannesburg continues brisk. In Pretoria the state of trade is fair in building,

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xvi.; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

Contracts.

BUILDING.

DECEMBER 29. — **Glasgow.** — DESIGN FOR A BRIDGE. — Designs are invited (Alexander Thomson Travelling Studentship) for a bridge. Premiums of 500, and 200, are offered. See advertisement in issue of December 24, 1910, for further particulars.

DECEMBER 30. — **Armadale.** — Public hall and offices, to cost 250,000. From Messrs. 1234, 70, and 101. Open only to architects who were represented on the site on October 12.

DECEMBER 30. — **Hastings.** — EAST SUSSEX HOSPITAL. — Plans for 1234, 70, and 101. Mr. E. P. Hall, R.I.B.A., Assessor.

DECEMBER 30. — **Welsh Eisteddfod, 1912.** — DESIGNS FOR WORKMEN'S DWELLINGS. — Prize, 500. Particulars from Welsh Housing Association, 9, Temple-chambers, E.C.

JANUARY 1, 1912. — **Rochdale Infirmary.** — EXTENSIONS. — Limited to Rochdale architects. Assessor, Mr. Alex. Graham, F.R.I.B.A.

JANUARY 6. — **Bolton.** — Miners' Federation Hall and Offices. Limited to architects within twenty-five miles of Bolton. Premiums, 600, and 250. Assessor, Mr. Jonathan Simpson, F.R.I.B.A. Particulars from Messrs. Fielding & Fernihough, 7, Fold-street, Bolton.

JANUARY 6. — **Stafford.** — PUBLIC LIBRARY. — The Stafford Corporation invite designs for a Public Library. Mr. Henry T. Hare, F.R.I.B.A., Assessor. Second and third premiums of twenty and forty guineas. Deposit, 10. Particulars from Mr. W. Plant, A.M.Inst.C.E.

JANUARY 9. — **Maghera.** — TECHNICAL SCHOOL. — Particulars from Mr. W. D. Cousins, County Technical Office, Court-house, Coleraine.

JANUARY 9. — **Spennymoor.** — PUBLIC HALL, etc. — The Spennymoor U.D.C. invite complete plans and designs for a public hall, market, and offices, etc. Three premiums are offered. See advertisement in issue of December 17 for further particulars.

JANUARY 29. — **Buzan, Roumania.** — TRAINING COLLEGE (16,000). — Premiums 2000, 400, 200. Particulars from the Ministère des Cultes et de l'Instruction Publique, Bucharest.

JANUARY 31. — **Warrington.** — GOVERNMENT PALACE (premiums, 1,250, and 850), and town improvement scheme (premiums, 1,000, 600, and 425). Conditions may be seen at the Board of Trade, 73, Eastcheap-street, E.C.

JANUARY 31. — **Australia.** — DESIGNS FOR FEDERAL CAPITAL CITY. — The Government of the Commonwealth of Australia invite competitive designs for the laying out of this Federal capital city. See advertisement in issue of September 1 for further particulars. See also page 505, November 3.

FEBRUARY 3. — **Bolton.** — NURSES' HOME AT THE INFIRMARY. — Premiums of 800, 200, and 100. Assessor, Mr. John B. Gass, F.R.I.B.A.

FEBRUARY 17. — **London, E.C.** — NEW OFFICES. — The Port of London Authority invite preliminary sketch designs for new head offices in Trinity-square, and for laying out remainder of land as a building site. See advertisement in issue of November 24 for further particulars.

MARCH 15. — **Drammen, Norway.** — RAILWAY-STATION. — Particulars from the Norges Statsbaner, Christiania.

* MARCH 15. — **Prestatyn, North Wales.** — LAYING-OUT ESTATE. — Lord Aberconway and the Trustees of the Prestatyn Estate invite designs for laying out of the estate. Three premiums are offered. See advertisement in this issue for further particulars.

* MARCH 16. — **Harrow.** — PUBLIC OFFICES. — The Harrow Urban U.D.C. invite tenders for the enlargement of and alterations to their Public Offices. See advertisement in this issue for further particulars.

MAY 1. — **Society of Architects' Travelling Studentship.** — Design for a Town Hall. 250, and medal.

* JUNE 1. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000, to 3750. Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

NO DATE. — **Jordanhill, Glasgow.** — PROPOSED TRAINING COLLEGE. — Limited to six firms, named in Competition News, December 1, page 635.

NO DATE. — **Winnipeg.** — PARLIAMENT BUILDINGS. — Conditions from the High Commissioner for Canada, 17, Victoria-street, S.W.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 30. — **Bradford.** — ALTERATIONS. — For alterations to classrooms and erection of new conveniences at the Ryan-street School. Drawings and general conditions of contract seen, and quantities from the City Architect, Town Hall, Bradford.

DECEMBER 30. — **Fartown.** — PAVILION. — Erection of being pavilion at the H.C. and A.C. ground. Mr. R. W. Yates, architect and surveyor, 32, John William-street, Huddersfield.

DECEMBER 31. — **Bradford.** — WAREHOUSE. — Erection of a warehouse at North Wing, Bradford. Mr. Wm. Illingworth, architect, 9, Market-street, Bradford.

JANUARY 1, 1912. — **Dundalk.** — HOTEL. — Erection of a new wing to the Carlingford Hotel. Mr. J. P. McGahon, architect, 9, Exchange-buildings, Dundalk.

JANUARY 2. — **Merthyr Tydfil.** — ROOM. — Erection of manual instruction room at Abermorlais School. Particulars from the Deputy-Surveyor, Town Hall.

JANUARY 3. — **Huddersfield.** — CLUB. — Erection of a Liberal Club at Almondsbury, Huddersfield. Plans seen, and quantities from Messrs. Stocks & Sykes, architects, St. Peter's-street, Huddersfield.

JANUARY 3. — **Seven Sisters.** — VICARAGE. — Erection of a vicarage. Plans and specification seen, and quantities from Mr. J. Cook Rees, M.S.A., Parade-chambers, Neath.

JANUARY 3. — **Derby.** — OFFICES. — The Midland Railway Company invite tenders for the erection of additional offices for Telegraph Superintendent at Derby. Plans and specifications seen, and quantities and particulars from the Engineer, Derby Station.

JANUARY 4. — **London.** — EXTENSION. — For the extension of Hampstead Sorting Office. Drawings, specification, and conditions and form of contract with Mr. J. Rutherford, 22, Carlisle-place, S.W. Quantities and forms of tender at H.M. Office of Works, etc., Storey's-gate, S.W., on deposit of 10.

JANUARY 4. — **Redruth.** — SCHOOL. — The Dudley E.C. invite tenders for the erection of a new junior and infants' school to accommodate 460. See advertisement in this issue for further particulars.

JANUARY 4. — **Redruth.** — CHURCH. — Erection of Wesleyan church at Wheal Buller, near Redruth. Plans and specifications with Mr. S. Hill, architect, Green-lane, Redruth.

JANUARY 6. — **Alford.** — HOUSE. — Erection of a house in Station-road. Quantities and forms of tender from Mr. Frederick Parker, F.S.A., architect, Boston. Deposit of 10.

JANUARY 6. — **Frampton.** — VICARAGE. — Erection of a vicarage house. Plans and specifications with Mr. C. N. Tunnard, 16, Wide Bargate, Boston.

JANUARY 6. — **Landore.** — ADDITIONS. — For additions to Salin schoolroom. Architects, Messrs. Richard & Matthews, Salubrious-place, Swansea.

JANUARY 6. — **Treener.** — SCHOOL. — Erection of a county school for girls at Treener, Penance. Plans and specification with Mr. O. R. Caldwell, architect, Penance, or Mr. Sampson Hill, Architect to the Committee, Green-lane, Redruth.

JANUARY 8. — **Bryn Ithel.** — HOUSE. — Erection of a detached house at Bryn Ithel, Aberbeeg. Plans and specifications with Messrs. Seaborn & Cayley, architects and surveyors, Hengoed.

JANUARY 8. — **Bryn Ithel.** — HOUSES. — Erection of two houses at Bryn Ithel, Aberbeeg. Plans and specifications with Messrs. Seaborn & Cayley, architects and surveyors, Hengoed.

* JANUARY 8. — **London, N.W.** — KIOSK. — The Commissioners of H.M. Works and Public Buildings invite tenders for a kiosk at Primrose Hill, Regent's Park, N.W. See advertisement in this issue for further particulars.

JANUARY 8. — **Richmond.** — ADDITIONS. — For alterations and additions to police-station, Victoria-road, Richmond. Plan and specification with Mr. F. W. Oliver, Richmond, Yorks.

* JANUARY 10. — **Hammersmith.** — ALTERATIONS, etc. — The Hammersmith E.C. invite tenders for alterations and repairs to premises, No. 120, King-street. See advertisement in this issue for further particulars.

JANUARY 10. — **Catherham.** — SCHOOL. — Erection of Roman Catholic school. Mr. W. Bevan, F.R.I.B.A., architect, 65, Lansdowne-road, Croydon. Quantities on deposit of 10.

* JANUARY 11. — **London, N.** — ALTERATIONS, etc. — The St. Mary Islington Guardians invite tenders for certain alterations, etc., at Receiving Houses, Hornsey-rise, N. See advertisement in this issue for further particulars.

JANUARY 11. — **Radstock.** — COTTAGES. — Erection of twenty-eight cottages. Specifications from the Surveyor, Mr. G. H. Gibson, Radstock, near Bath. Deposit of 10.

JANUARY 11. — **Southampton.** — WORKS. — For construction of economiser flues and buildings, and supply and erection of a fuel economiser, at waterworks pumping station at Otterbourne; also for construction of a meter recorder house conditions seen, and quantities and forms of tender from the Waterworks Engineer, 35 and 35, French-street, Southampton, on deposit of 10.

* JANUARY 12. — **Knockly.** — EXTENSION OF POST-OFFICE. — The Commissioners of H.M. Works and Public Buildings invite tenders for extension of office. See advertisement in this issue for further particulars.

JANUARY 12. — **Korton-in-Ribblesdale.** — SCHOOL. — For erection of Helwith Bridge new school. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 10.

JANUARY 13. — **Naas.** — WATER WORKS. — Erection of a new pump-house, the supplying and fixing of pumps, gas-engine, and other works. Plans and specification prepared by Mr. Francis Bergin, B.E., 56, Westmoreland-street, Dublin. Deposit of 10 for quantities.

JANUARY 12. — **Owston.** — SCHOOL. — For erection of a new school at Owston, Carroft. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 10.

JANUARY 12. — **Silkstone.** — SCHOOL. — For erection of a new school. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 10.

JANUARY 12. — **Workington.** — POST-OFFICE. — The Commissioners of H.M. Works and Public Buildings invite tenders for new post-office. See advertisement in this issue for further particulars.

JANUARY 13. — **Cirencester.** — HOUSES. — Erection of twenty-four houses in Siddington-road. Drawings and specification seen, and quantities, on deposit of 20, 25, from Mr. V. A. Lawson, A.M.Inst.C.E., Council Buildings, Cirencester.

JANUARY 13. — **Honley.** — SEWER. — Construction of 9-in. sewer in Gynn-lane, near Honley Station. Plans seen, and quantities and form of tender from the Engineer, Mr. W. H. Radford, C.E., Albion-chambers, King-street, Nottingham, on deposit of 10.

* JANUARY 15. — **Chatham.** — HOSPITAL EXTENSION. — The Secretary of State for War invites tenders for demolition of water tower and erection of new administrative, operation, and ward blocks and boiler-house at Military Hospital, Fort Pitt. See advertisement in this issue for further particulars.

* JANUARY 15. — **Coventry.** — CLASSROOMS. — The Governors of Bablake School, Coventry, invite tenders for additional classrooms, gymnasium, etc. See advertisement in this issue for further particulars.

JANUARY 16. — **Gwanfaren.** — VILLAS. — Erection of ten pairs of semi-detached villas, for the Marlborough Building Club. Plans and specifications with the architect, Mr. J. Mann, June, 27, Lancaster-villas, Merthyr Tydfil.

* JANUARY 17. — **St. Albans.** — COTTAGES. — Tenders are invited for the erection of six cottages in Catherine-street, St. Albans. See advertisement in this issue for further particulars.

JANUARY 23. — **Ilford.** — SCHOOL. — Erection of elementary school. Plans and specifications seen, and quantities and forms of tender from the architect, Mr. C. J. Dawson, F.R.I.B.A., 11, Cranbrook-road, Ilford, on deposit of 50 s.

JANUARY 31. — **Prescot.** — ADDITIONS. — For additions to the Council school. Plans seen, and quantities from the County Architect, Mr. H. Little, 16, Ribblesdale-place, Preston. Deposit of 20.

FEBRUARY 13. — **Whalley.** — ASYLUM. — For the completion of the erection of the asylum. Specification, general conditions, and quantities from Mr. Henry Little, architect, 16, Ribblesdale-place, Preston, on deposit of 100.

NO DATE. — **Barnsley.** — PREMISES. — Erection of new business premises for Messrs. Hunters, Ltd. Mr. W. W. Wray, A.R.I.B.A., architect, 2, King-street, Wakefield.

NO DATE. — **St. Albans.** — COTTAGES. — Erection of six new cottages, Catherine-street. Particulars from Mr. H. F. Mence, architect, 11, St. Peter's-street, St. Albans.

of Messrs. D. R. Paterson, Ltd., has been accepted for the construction of a sewer in Neasden-lane; as has also the tender of Mr. G. W. Riley, at 13s. 10s., for the provision of a bandstand in Roundwood Park.

Wood Green.—The Surveyor is to be instructed to prepare plans and estimates of the cost of levelling and laying-out the land at the rear of the Town Hall. Tenders are to be invited for cuiverting, etc., a portion of Moselle Brook. A plan has been lodged by Mr. S. W. Cranfield for the conversion of a shop into a cinematograph hall, Myddleton-road, Bowes Park.

Woolwich.—Plans have been lodged with the London County Council by Mr. Bruce Dawson, 6, Old Queen-street, Westminster, S.W., for the erection of a new factory in Green-lane, North Woolwich.

OBITUARY.

Sir James C. Inglis, M.Inst.C.E.

Sir James Charles Inglis, member of the Council, 1907, and President, 1908 and 1909, of the Institution of Civil Engineers, and General Manager of the Great Western Railway Company, died at Rottingdean on December 19, aged sixty years. He was member of the Prussian Order of the Red Eagle (Third Class) and the Order of the Crown of Italy; a member of the Royal Commission upon Canals and Inland Navigation, and an arbitrator for the Federated Malay States Government in the matter of the purchase of the Tanjong Pagar Docks, Singapore, 1906. A native of Aberdeen, he received his earlier education in the Grammar School and University there; he entered Messrs. Norman, Copeland, & Co.'s engineering works in Glasgow, and then, 1872-5, was employed as James Abernethy's pupil upon the Alexandria railways and docks. Under Mr. P. J. Margary he worked upon the construction of the Great Western docks at Millbay, Plymouth, for the South Devon and Cornwall Railways. Having started in practice as a civil engineer at Plymouth, Sir James Inglis constructed Mount Batten breakwater for the Cattewater Harbour Commissioners, together with railway, harbour, and similar undertakings in South Devon and Cornwall. In 1892 he was appointed Assistant-Engineer, and within a few months Engineer-in-Chief to the Great Western Railway Company; in 1903 he became General Manager and Consulting Engineer, and thus was associated with their extension schemes for Fishguard Harbour, their South Wales lines, and the joint line with the Great Central to Wolverhampton and Birmingham. It is stated that he was the first student of the Institution of Civil Engineers and the first railway General Manager who became President of the Institution. The funeral took place on December 23 at Kensington Cemetery.

PATENTS.

APPLICATIONS PUBLISHED.*

27,653 of 1910.—Jean Jacques Pousset: Apparatus for the display of sectional building models.

27,805 of 1910.—Charles Ervin Reitz: Ventilators.

28,216 of 1910.—Thomas Downie: Furnace fronts and doors.

28,224 of 1910.—Henry William Hemingway: Process for preserving or treating stone and like building materials, and for producing cement.

1,008 of 1911.—Charles Clayton Shaw: Flushing apparatus.

1,560 of 1911.—John Thomas Henthorne: Joint for pipes or conduits.

3,153 of 1911.—Fedor Silber: Roofing tiles.

6,576 of 1911.—John Howard Cartland and Archibald Henry Collins: Apparatus for closing doors and the like.

9,839 of 1911.—Max Seyferth: Floor cleaning machines.

11,513 of 1911.—Isidor Garcia Lastra, Guillermo Bernstein and Cipriano Salvatierra: Manufacture of reinforced cement column.

12,002 of 1911.—Arthur Johnson: Means for moulding bricks, tiles, and similar articles.

12,856 of 1911.—Charles Back and Rudolf Wakik: Process and device for manufacturing marble slabs with inscriptions, ornamentations, and the like in imitation marble.

15,511 of 1911.—Henry Arthur Goddard: Box cores that are used in building hollow concrete walls.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

16,506 of 1911.—George Baxter Upham: Processes for manufacturing bituminous paving blocks.

16,531 of 1911.—Robert Hudson: Fasteners suitable for windows, doors, gates, shutters, box-lids, and the like.

19,508 of 1911.—Paul Schwenzow: Machines for stamping plastic material into moulds in the manufacture of pipes, tubes, and like bodies.

18,856 of 1911.—Edouard Benedictus: Strengthened glass.

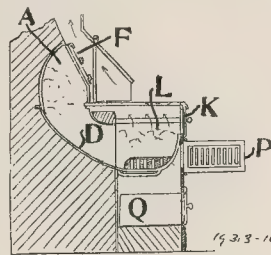
20,104 of 1911.—Frank Hiff: Chimney-pots or cowls.

22,135 of 1911.—Henri Marliere: Safety-chains for doors, windows, or the like.

SELECTED PATENTS.

19,313 of 1910.—Robert MacLaurin: Stoves.

This relates to a kitchen stove having a charging-hopper *A* with a gastight cover *F*, and a shoot *D*, at the rear of a cooking-range, and wherein the primary and secondary air supplies may be regulated by doors. The upper door *K*, and the ashpit *Q* are tight-fitting, and a door *P*, with a hit-and-miss or other regulator, controls the primary air



19,313 of 1910.

supply and also the secondary air supply, which passes from the ashpit through a hollow cheek. The bottom grate-bars may be curved up at the front without additional front bars, or front bars with a lifting bottom grate may be provided. Flues are provided beneath and above a side boiler *L*, and continue above or around the oven, a damper being provided to direct the hot gas.

18,250 of 1910.—Edward Charles Robert Marks (Soc. Anom. Beer, Belgium): Transporters.

This relates to an apparatus for removing material from a heap which comprises a crane-like structure, from the crab of which depends a rigid frame carrying the shovel. In one arrangement the crab 4 is driven by a pinion engaging a rack 18 on the bridge 1, and carries a vertically-adjustable frame 5, at the lower end of which the shovel 7 is pivotally mounted at 6. The shovel is formed symmetrically so as to be capable of working in either

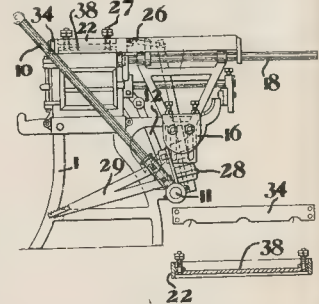
direction, and is provided with small rollers 14 to run upon the ground. The shovel is swung about its axis by cords operated from a winding machine controlled from the driver's cabin. In the other arrangement the shovel has only one cutting-face, and one side of the frame 4 is extended downwards, at 15, to form an abutment for the frame 5. The shovel is discharged over the rear edge down a shoot 16 leading to a hopper.

18,142 of 1910.—William Larmer: Chimney-tops.

This relates to a chimney-top which consists of an inner tube, having its bore equal in diameter to the chimney opening, with a canopy over, and an outer tube, which is of about twice the height of the inner tube, and is formed at its base as a chamber of four or more sides, in which are air-holes.

18,929 of 1910.—Edward Charles Robert Marks (Ideal Machinery Company, U.S.A.): Moulding concrete blocks.

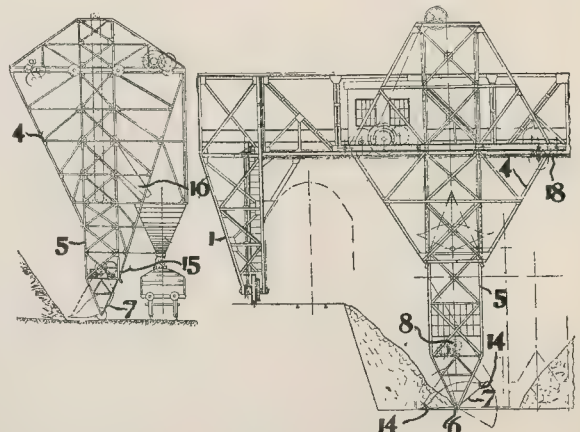
This relates to moulding machines for concrete blocks of the type described in Specification No. 12,452-1907, which are fitted with a device for removing the surplus moulding-material after the tamping operation, and consists in the provision of a scraper 34 carried by a frame 22, sliding on guide-bars 18 mounted on vertically adjustable brackets bolted to plates 16 fixed to arms on the machine frame 1. The scraper frame also carries a spring-supported plate 38, which is depressed by a blow from a heavy tool or tamping-hammer after the passage of the



18,929 of 1910.

scraper to smooth and flatten the upper surface of the block. The forward movement of the scraper frame is effected by a foot-lever 29 fixed to a yoke 23, which is revolvably mounted on the shaft 11 of the core-actuating yoke 12, and operates through a lever 27 and link 26. The return movement is effected by the engagement of the yoke 12 with the lever 27 when the lever 10 is operated to withdraw the cores.

SELECTED PATENTS.—Continued on page 790.



18,250 of 1910.

LEGAL COLUMN.

Water Charges.

Another conundrum has come up for decision by the Courts under the Metropolitan Water Board (Charges) Act, 1907, in the case Metropolitan Water Board v. Phillips, the question being what was the rateable value of certain premises upon which the water rate was to be calculated.

The premises in question were the Brown Bear, Aldersgate. The claim of the Water Board related to two quarters, viz., October 1 to December 31, 1910, and January 1 to March 31, 1911. By a supplementary list, which came into force April 6, 1909, the rateable value had been assessed at 400l., but on June 2, 1910, the overseers had sent to the Assessment Committee a provisional list, placing the value at 399l. On objection the Assessment Committee reduced the rateable value to 234l., and that list was dated October 3, 1910, and came into force on that day.

The defendants contended that the water rate should be based for both quarters on this lower valuation, but the Water Board claimed 5l. being 5 per cent. on 400l., the former assessment for the first of the two quarters and 5 per cent. on the lower assessment for the second of the two quarters' water rate.

The Court decided the question in favour of the Water Board, but agreed that the case involved difficult questions, and that the decision involved some hardship on the defendant. Very shortly stated, the reasoning of the decision was as follows:—Sect. 13, sub-sect. 1, of the Metropolitan Water Board (Charges) Act, 1907, provides that the rateable value "shall be determined by the valuation list in force at the commencement of the quarter for which the water rate accrues." This Act incorporates the Waterworks Clauses Act, 1847, sect. 70 of which made the water rates payable in advance on the ordinary quarter days, but the Charges Act, by sect. 15, makes the quarterly dates of payment April 1, July 1, October 1, and January 1. After a careful examination of the various Acts relating to valuation the Court came to the conclusion that under sect. 13 of the Charges Act the valuation list in force at the commencement of the quarter for which the water rate accrued was the original list, placing the rateable value at 400l., the provisional list not being in force until after the objection had been heard and determined by the Assessment Committee, which, it will be seen in this case, was October 3, or three days after, under the Charges Act, the water rate accrued became due.

The Act which regulates the supply of water by the Metropolitan Water Board is a private Act, and therefore the public have less facilities for becoming acquainted with its provisions than is the case with public statutes, but it has altered and modified many public statutes and has been the cause of considerable litigation which has involved questions the Courts have expressed difficulty in solving. With reference to the changes of dates in the quarter days upon which the water rate is payable we may remind our readers of a decision reported in *The Builder*, September 5, 1903, in which it was held that the Water Board were under no statutory obligation to give any notice to consumers.

LONDON COUNCILS.

Barking.—Application is to be made to the Local Government Board for sanction to a loan of 505l., the estimated cost of widening Ripple-road, between Cobham-road and Westbury-road. The plans of the Architect for the erection of four cottages on a portion of the hospital site have been referred to a sub-committee for consideration and report.

Battersea.—Repairs to granite macadam are to be carried out in six roads at an estimated cost of 618l. Electricity mains are to be extended at an estimated cost of 107l. No objection is to be raised to the proposals of Mr. L. A. White to erect a new chapel on the site of the old chapel at the Salestan Schools, Surrey-lane, and of Messrs. Edwin Evans & Sons, for six houses in Sudbrooke-road.

Camberwell.—Alterations are to be carried out to the Camberwell Baths, Church-street, to comply with the conditions of the London County Council, at an estimated cost of 1,100l. **County of London.**—A meeting of Metropolitan Borough Engineers has been held to consider the following letter from Mr. W. E. Kiley, Superintending Architect to the London County Council:—"The Building Acts Committee of the Council has had under further consideration the question as to an arrangement being agreed between the Council and the Metropolitan Borough Councils with regard to buildings and structures to be dealt

with by the respective authorities under Part VII. of the London Building Act, 1894. Experience since the subject was last discussed has confirmed the Committee in the opinion that it would be to the public advantage if an arrangement could be arrived at to define which buildings and structures could be dealt with by the Council and Borough Councils. I am, therefore, authorised by the Committee to inquire whether you would be prepared to recommend your Council to agree to an arrangement under which your Council would deal, under sect. 84 of the London Building Act, 1894, with buildings within the following limits, buildings not complying with these conditions being dealt with by this Council:—Summer-houses, tool sheds, coals or wood sheds, fowl houses, and ruins, pigeon houses, dog kennels, perambulator sheds, cycle sheds, motor-car sheds, and other similar structures:—(a) Not exceeding in area 64 sq. ft.; (b) Not exceeding in height 7 ft. in any part measured from the level of the ground to the underside of the eaves or roof-plate; (c) Situated at least 5 ft.; (1) from any street; (2) from any other building or structure, unless there be a non-perforated wall separating the proposed structure for the whole of its length and height from such other building or structure; (d) Not having therein any stove, fire, fireplace, hot-air pipe, hot-water pipe, or other apparatus for warming or ventilating the same; (e) Not extending in an part thereof within the prescribed distance from the centre of the roadway, in any street or way; and (f) Not projecting in any part thereof beyond the general line of buildings in any street or way." The following resolutions were agreed to at the conference:—(a) That with reference to Mr. Riley's letter of the 11th inst., after carefully considering, in conference, the suggestion of the Superintending Architect, the Metropolitan Borough Surveyors are not prepared to acquiesce in Mr. Riley's proposals. (b) That this conference would willingly take into consideration some alternative scheme for equitable distribution of the statutory duties of Part VII. of the London Building Act, 1894.

Deptford.—The Public Health Committee have put forward the following recommendations at the conclusion of their report on infantile mortality:—(1) That the Baths and Washhouses Committee consider the desirability of converting two or more houses in one of the wards in the central district of the borough as slipper baths; (2) That the Works Committee take into consideration the paving of streets in congested areas with a surface of jointless and impervious material. Plans have been passed for Mr. J. Adams for additions to a building at the rear of Nos. 41-3, Clifton-hill, and for the erection of a building at the rear of Nos. 45-7, Clifton-hill.

Kensington.—The kerb and footway paving in portions of Ossington-street, Pembridge-road, Hite-street, King's Hill-gate, Ladbrooke-road, and Cornhill-road is to be raised and made good where necessary at a total estimated cost of 272l. The tender of Messrs. A. Roberts & Co., Ltd., at 126l., has been accepted for carrying out alterations and other works in adapting No. 21, Drayton-mews for use as a tool-house, store, etc. The Works Committee report that in connexion with a report submitted to the Council in October last on the subject of the advisability of a scheme being adopted providing for street name tablets in London being of a uniform character, they stated that they had had before them a suggestion that it might be of considerable assistance to pedestrians if the names of streets were also let in the paving of the footways at street corners, particularly in more important thoroughfares. They had had before them a footway tablet in mosaic which had been prepared by the directions of the Borough Engineer, and he suggested that footway tablets of this material, which gives a good foothold, should be laid on each side of Kensington High-street, indicating that thoroughfares, in close proximity to the eastern and western boundaries of the street. As regards the proposal put forward, the Committee wish to point out that whilst tablets let in footways may be of some advantage to pedestrians, they would be found to be of little, if any assistance to vehicular traffic, and looking to the number of pedestrians in busy thoroughfares, such as Kensington High-street, and to other conditions, they consider that plainly lettered street name tablets fixed on buildings and tablets fixed on lamps would be found more useful than footway tablets, particularly as the latter, if fixed in such thoroughfares, would very frequently be wholly or partially covered up by persons making use of the footways. The Committee have, therefore, given directions for special attention to be given to the fixing of name tablets at a lesser height upon buildings than has been the practice in the past, and to the fixing of a greater number of tablets on street lamps.

Lambeth.—The tenders of Messrs. Thomas Wood & Sons, Ltd., Messrs. Briantow & Co., Ltd., and Messrs. Johnson Brothers have been accepted at 1,500l., 250l., and 250l. respectively for tar-spraying works during the year 1912-13. The following plans have been passed:—Mr. Walter Nightingale, on behalf of the Duchy of Cornwall, drainage of ten houses proposed to be erected in Aquinas-street, Stamford-street; Mr. J. Parsons, on behalf of the Duchy of Cornwall, drainage of twenty houses proposed to be erected in Denny-street; Messrs. Stringer Brothers, drainage of three houses proposed to be erected in Claverdale-road, Upper Tulse-hill.

Lewisham.—Tenders are to be invited for paving Phœbeth-street, Francemary-street, and a portion of George-lane, as soon as 75 per cent. of the estimated cost of the works have been received. A 16-in. strip of pavement in front of 218-244, Brownhill-road is to be paved at an estimated cost of 95l. The tender of the Improved Wood Pavement Company, Ltd., has been accepted for laying wood-paving in Catford-road at the following costs:—340 yards super. wood-paving 9-in. concrete, 12s. 11d. per super. yard; 70 yards super. wood-paving, 8s. 2d. per yard; 50 yards super. 12-in. concrete, 12s. 11d. per yard. The footpaths on the north side of Rosenthal-road are to be repaired with artificial stone in lieu of tar-paving, at an estimated cost of 102l. The tender of Mr. G. J. Howick has been accepted for replastering the ceilings in the Central and Forest Hill Libraries in sirapite, at 37l. 17s. and 38l. 17s. 6d. respectively. The following plans have been passed:—Royal Arsenal Co-operative Society, Ltd., additional rear of Nos. 50 and 52, Rushey-green; Mr. J. Randall Vining, shops, London-road; Mr. E. H. Harrison, five shops, Fernbrook road; Mr. G. A. Lansdown, forming and laying-out street in continuation of Newstead-road, also new street out of St. Mildred's-road.

Middlesex County Council.—The City Engineer and Surveyor has been authorised to substitute Lancashire or Yorkshire grit stone sets for the existing granite sets over Cobham County Bridge, Yiewsley, at an estimated cost of 100l. A new carriageway of mild steel decking and wood blocks in lieu of the existing plank decking and macadam is to be constructed over the Middlesex half of Hampton Court County Bridge, at an estimated cost of 1,750l.

Poplar.—The electrolytic disinfecting shed is to be removed from the site adjoining the electricity works to the opposite side of Violet-road, where it is to be enlarged and reconstructed at an estimated cost of 240l., including the provision of concrete foundations, drainage, refilling apparatus, electric installation, etc. During the quarter to end March 31 next repairs are to be carried out to the wood-paving of five roads at an estimated cost of 1,800l.; the macadam paving of ten roads at an estimated cost of 662l. and repaving of two roads at an estimated cost of 300l. The application has been approved of Mr. C. Dunch, on behalf of Messrs. Howard Brothers, for the erection of buildings in Portico-street.

St. Pancras.—The Council have decided to lease Oak House and Wellington House to Mr. Samuel Pulham, Victoria-parade, Muswell Hill. The tenant proposes to expend nearly 1,000l. on improving the property.

Shoreditch.—Laburnum-street is to be repaved with 2-in. compressed asphalt, and Union-walk with redressed granite sets, at an estimated cost of 2,115l. Electricity mains are to be extended in the Bethnal Green area at an estimated cost of 350l.

Southwark.—The tender of St. Pancras Iron-works Company, Ltd., has been accepted at 128l. for supplying and fixing stall divisions on the first-floor stables at Greenmoor Wharf. Plans submitted by Messrs. Henry Langston & Co., 1, 2, 3, and 30, The Exchange, Southwark-street, S.E., have been approved for the erection of a building on the site of Nos. 266-282, Waterloo-road.

Walthamstow.—The tender of the Trinidad Lake Asphalt Paving Company, Ltd., has been accepted for a supply of Trinidad asphalt macadam and bitumen, at 14. 6s. per ton for the macadam and 5l. 5s. per ton for the pure natural Trinidad Lake bitumen (for grout). Plans are to be prepared by the Engineer for making-up the footpath in front of Nos. 113-149, Blackhorse-lane. Tenders are to be invited for carrying out the work of doubling the tramway track at the "Bell" corner in Forest-road. Plans have been passed for Messrs. F. H. Heath, Ltd., for an electric theatre in Wood-street. Mr. F. W. Willmott and Mr. F. Clayton have lodged plans for an electric theatre in Hoe-street, and three houses, Byron-road, respectively.

Willesden.—The work of repaving the pathways in Cavendish-road is to be proceeded with at an estimated cost of 830l. The tender

BUILDING—continued.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NO DATE.—Waverton.—VICARAGE.—Erection of new vicarage. Quantities and form of tender from Mr. J. H. Martindale, F.R.I.B.A., architect, Eaglesfield Abbey-rooms, Castle-street, Carlisle.

ENGINEERING, IRON, AND STEEL.

* **JANUARY 16, 1912.—Truro.**—IRON GATES, RAILINGS, ETC.—The Cornwall C.C. invite tenders for wrought-iron gates and railings, etc., upon boundary walls at new County Offices. See advertisement in this issue for further particulars.

FURNITURE, PAINTING, MATERIALS, ETC.

DECEMBER 29.—Rhonda.—TOOLS.—For supply of tools, etc., for the metalwork and woodwork classes at the new Centre Handicraft Centre. Forms of tender from Mr. T. W. Berry, Director of Education, Council Offices, Pentre, Rhonda.

JANUARY 1, 1912.—Leeds.—PAINTING.—For painting, etc., to be done at the Central Home and Superintendent's house, Street-lane, Round-bay, and the Receiving Home, Leopold-street, Leeds. Specifications and forms of tender from Mr. James H. Ford, Clerk to the Guardians, Poor Law Office, South-park, Leeds.

JANUARY 1.—North Uist.—FENCE.—Erection of a six-wire corromony fence. Particulars from Mr. H. H. Mackenzie, Factor, Balone, Lochmaddy.

* **JANUARY 11.—Hampstead.**—WORKS, MATERIALS, OR SERVICES.—The Hampstead B.C. invite tenders for works, materials, or services for one or three years from April 1 next. See advertisement in this issue for further particulars.

JANUARY 13.—Leeds.—REPORTS, ETC.—For the supply of freelay reports, fire bricks, fire-brick lumps, and freelay. Specification and form of tender from Mr. R. H. Townsley, General Manager, Gas Offices, East-parade, Leeds.

* **JANUARY 16.—Truro.**—SCREENS, PLATFORMS, AND FURNITURE.—The Cornwall C.C. invite tenders for supplying screens, platforms, and furniture for Council-chamber of new offices. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

DECEMBER 29.—Northwood.—SEWER.—For the construction of six lengths of sewers. Plans and specifications seen, and quantities and forms of tender from Mr. W. L. Carr, Surveyor, Council Offices, on deposit of 1l.

DECEMBER 30.—Eastbourne.—ROADS.—For private improvement works. Plan and specification seen, and form of tender from Mr. A. E. Prescott, Borough Surveyor, Town Hall, Eastbourne.

JANUARY 1, 1912.—Edmonton.—KERB.—Supply and delivery of kerb on edge. Forms of tender and particulars from Mr. Cuthbert Brown, A.M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Edmonton.

JANUARY 1.—Gildersome.—GRANITE.—For supply of granite. Mr. W. Wilby, Surveyor, Council Offices, Gildersome, Yorks.

JANUARY 5.—Chesterfield.—SEWAGE, ETC.—For laying a new sewer and surface-water drains, and construction of new approach road to the new burial ground. Plans and specifications seen, and quantities from the Borough Surveyor. Deposit of 1l. 1s.

JANUARY 6.—Penarth.—SEWER.—For extension of the Kymyn outfall sewer. Plans and specifications seen, and quantities from Mr. Edgar J. Evans, A.M.Inst.C.E., Surveyor, District Council Offices, Penarth.

JANUARY 9.—Aldershot.—PLINTS.—For supply of Hungry Hill flints. Forms of tender from Mr. F. C. Uren, Surveyor, Municipal Buildings, Aldershot.

JANUARY 9.—Meriden.—GRANITE.—For supply of granite. Mr. A. W. Liggins, Clerk, 11, Priory-street, Coventry.

JANUARY 10.—Didcot.—ROAD.—For making a new road, for the Wallingford R.D.C. Plans and specifications from Mr. G. F. Slade, Clerk, Wallingford.

JANUARY 13.—Bexley Heath.—MATERIALS.—For materials. Specifications and forms of tender from Mr. W. T. Howse, Surveyor, Council Offices, Bexley Heath.

JANUARY 15.—Hitchin.—GRANITE.—For supply of broken granite. Mr. Wm. O. Times, Clerk, Council Offices, Town Hall, Hitchin.

JANUARY 15.—London.—ROADS.—For the formation of two short connecting roads near the Recreation Ground, Freemasons-road, Custom House, E. Mr. William Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C. Deposit of 1l.

JANUARY 20.—Norfolk.—GRANITE.—For supply of granite. Specification and tender forms from Mr. T. H. B. Heslop, M.Inst.C.E., County Surveyor, the Shirehouse, Norwich.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*LECTURER, BRICKWORK, CARPENTRY, JOINERY, Etc.	Council of the Harris Inst. ...	Not stated.	Jan. 4

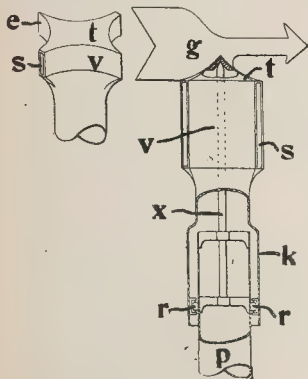
Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD BUILDING LAND, FULHAM, S.W.—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	Jan. 10
*DEALS, BATTENS, BOARDS, TIMBER, Etc.—Great Hall, Winchester House, E.C.	Churchill & Sim.	Jan. 10

SELECTED PATENTS—Continued from page 788.

18,694 of 1910.—Henry Osmond Barnard: Ventilating shaft tops.

This relates to a ventilating shaft top, wherein the top is formed of a number of curved plates having narrow unobstructed openings between them. A cap closes the upper end altogether or in part, and the coupling shaft is of less cross-section than the top; the top may be fixed or wind-directed.



18,694 of 1910.

The plates *v* are of parabolic cross-section and openings *s* are formed at the angular points. The cross-section of the shaft is gradually enlarged to that of the top, and the cap *t* may be a flat plate or be made up of curved plates completely closing the end. The lower part of the coupling shaft *k* may be enlarged, be fixed to, and stand off from, the shaft *p*, to which it is applied, so that rain may escape between them; or the top may have a windvane *g*, and be mounted on a central spindle *x* with rollers *r* between the shafts.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any communication to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiered Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TRADE CATALOGUES.

We have received from the Wilson Rolling Shutter Company, of St. John's House, 124-127, Minorie, London, E., a booklet descriptive of their improved rolling doors and shutters. These are of the interlocking slat type, and are designed as an improvement upon the various other types of shutters which have been hitherto in use, particularly with regard to the corrugated form of shutter made out of also to overcome the difficulties arising from the use of shutters composed of steel slats, which are constantly liable to break away. The slats are so shaped at the edges as to form a continuous hinge running the whole length of the shutter. The shutters can be supplied for fixing to any class of opening and for attachment to buildings of brick, stone, cement, or iron or steel structures.

Messrs. Henry Hope & Sons, Ltd., of 55, Lionel-street, Birmingham, and 39, Victoria-street, Westminster, S.W., forward us a leaflet illustrating their new wedge mortise lock. The special wedge shape of the lock, it is claimed, saves time in fixing, preserves the strength of the door, less being cut away from the tenon of the lock rail than is necessary for a square-cased lock, and ensures better fixing, at least two screws in each case entering the solid wood. A great number of these locks have been used by the Royal Liver Buildings, Liverpool. The firm also call attention to Hope's two-point casement handle, designed to hold a casement open one inch or one-quarter of an inch, a feat impossible with the common quadrant casement stay in gusty weather without the most irritating rattling.

Messrs. Lacey-Hulbert & Co., Ltd., pneumatic engineers, of 31, Victoria-street, London, S.W., send us leaflets of some of their latest designs for air compressors. A neat portable pattern, particularly adapted for blowing out dust from generators, motors, switch-gear, and electrical machinery of all kinds, is mounted on one base-plate with a substantial electric motor, and fitted with comparatively large wheels to facilitate ready transference from place to place, where the condition of the floor is unsuitable for wheels of small diameter, which can also be fitted without extra charge, if preferred. The base-plate itself forms an air receiver of considerable volume, which permits of the air being cooled and drained before passing through the base. The firm are also the manufacturers of the well-known "Boreas" rotary pumps. Driven by petrol engines or electric motors, mounted on one bed plate, they make excellent sets for country houses and factories requiring water to be forced into tanks.

The Genest-Stoessel Insulating Company, of 47, Victoria-street, Westminster, forward us a pamphlet dealing with their Korfund foundation plates for deadening and absorbing the noise and vibration of machinery. Our readers need hardly be told that the question of efficient foundation for machinery is an exceedingly important one with regard to the building in which the plant is erected, whose stability is likely to be seriously endangered by excessive vibration. Korfund is made of cork strips, protected by iron framing from losing its elasticity by compression, and is made to order for the actual area of the

Telephone:
North 3032 (4 lines).

